

Archive of Mathematica weekly newsletters

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1.1 Thursday, May 27, 2021

1.1.1	Top new questions this week	8
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1.1.1 Top new questions this week

Is Internal‘StringToDouble broken in 12.3?	8
in V 12.3, expression in notebook shakes when scrolling mouse to edit them. How to stop this effect?	8
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What are the key reasons for the performance improvements in 12.3?	10
Default window size too small in version 12.3 (in Windows 10) .	10

Is Internal‘StringToDouble broken in 12.3?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246449>

I believe Internal‘StringToDouble was the only way to fast convert string into numbers. Now in V12.3 it was removed: Internal‘StringToDouble["1"]

asked by Murta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2266> 17 votes

answered by Itai Seggev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4848> 20 votes

in V 12.3, expression in notebook shakes when scrolling mouse to edit them. How to stop this effect?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246400>

I noticed in V 12.3, when trying to edit an expression in a cell, and moving/scrolling the mouse, the expression itself shakes. It seems to auto-resize or adjust while one is editing it. This does not ...

asked by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 14 votes

answered by MassDefect <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42264> 16 votes

Programming language prototyping in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246507>

Are you aware of any projects using the Wolfram language resp. Mathematica as an environment to explore the design of programming languages - in particular languages with a focus on mathematics (...)

asked by Math Gaudium <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74255> 12 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 18 votes

WriteString to TCP socket appears to be broken in Mathematica 12.3

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246444>

I have a large codebase in which some functions make calls to Python TCP servers. The code used to work perfectly in Mathematica 12.2, but has not worked since I ...

asked by Shredderroy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9257> 11 votes

answered by Dorian B. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23275> 2 votes

DirichletCondition doesn't always work with RegionBoundary

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246520>

I am trying to solve the heat equation on a circle with a square shaped hole in it. It works:

asked by Pillsy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=531> 9 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 11 votes

What are the key reasons for the performance improvements in 12.3?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246476>

The built in benchmark test on my stationary workstation shows an improvement from 2.82 to 5.99, all other hardware and operating systems settings the same. This looks very good. My question is: What ...

asked by FredrikD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1635> 9 votes

answered by Dan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42162> 5 votes

Default window size too small in version 12.3 (in Windows 10)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246466>

After starting Mathematica 12.3, the default window size is like this, it's too small for me, I dont want to manually drag the window every time. I have tried this,

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 7 votes

1.1.2 Greatest hits from previous weeks

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Is there an open source implementation of Mathematica-the-language?	12
How to express trigonometric equation in terms of of given trigonometric function?	12
How can I plot a graph of an integral?	12
Find eigen energies of time-independent Schrödinger equation .	13

Multivariable Taylor expansion does not work as expected

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=15023>

The basic multivariable Taylor expansion formula around a point is as follows:

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla)f(\mathbf{r}) + \frac{1}{2!}(\mathbf{a} \cdot \nabla)^2 f(\mathbf{r}) + \dots$$

asked by matheorem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4742> 65 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 73 votes

How to calculate contour integrals with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34073>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

asked by user64494 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7152> 42 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 64 votes

What does "Tag Integer is Protected" message mean?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=6738>

(Newbie question)

For every function I define I get this message: When I close and reopen Mathematica, and re-enter the function definition, I don't get the message anymore. What does it mean?

asked by stevenvh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1450> 11 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 13 votes

Is there an open source implementation of Mathematica-the-language?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4454>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

asked by sblom <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=178> 124 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 86 votes

How to express trigonometric equation in terms of of given trigonometric function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=434>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

asked by Prashant Bhate <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=99> 30 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 37 votes

How can I plot a graph of an integral?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=78451>

I want to plot the following function:

$$\int \left(\frac{\Gamma(x+1)}{2} - \frac{\Gamma(x-1)}{2} \right) dx$$

asked by Anixx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=651> 4 votes

answered by k_v <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24727> 9 votes

Find eigen energies of time-independent Schrödinger equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32293>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrödinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = Ei \psi$$

where $U(x)$ is some potential and Ei is the ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 49 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 46 votes

1.1.3 Can you answer these questions?

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Step-by-step solution for a Limit	14

What is "Flatten" doing to my elements?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246395>

Here's some of my code. `x1` results in returning the position of a list in a `{{{n1}}, {{n2}}...}`. Im trying to flatten it such that the list reads out as `{n1,n2,n3...}` some how it's adding elements.

asked by MT Cup <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79502> 1 vote

Inconsistent boundary and initial conditions when solving sine Gordon equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246596>

I have been trying to solve the following sine Gordon equation $\partial_{x,x}u(x,t) - \partial_{t,t}u(x,t) - \sin(u(x,t)) - \alpha\partial_t u(x,t) + \gamma = 0$, for $x \in [0, 15]$ and

asked by t Lê Thành <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68852> 1 vote

Step-by-step solution for a Limit

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246560>

Is it possible in Mathematica to get a step-by-step evaluation of some functions? Such that Mathematica is outputting not only the result but all the stages that have led to it? If so, how does one do ...

asked by putti.123 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=80178> 1 vote

1.2 Thursday, May 20, 2021

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1.2.1 Top new questions this week

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How can I style a Line like "Glassrectangle"?	17

Stable fluids code for electromagnetic mixture application

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246091>

This code has been translated from the original Jos Stam code and improved with some Mathematica functions. It solves problem of viscous incompressible flow with electromagnetic force in a rectangle ...

asked by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 14 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 11 votes

How can I create an animation showing how a circular sector deformed to a cone?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246171>

I want to create the following animation with Mathematica.

What is the simplest way to do so? My first effort:

asked by Kim Jong Un <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42141> 12 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

Dataset from association of lists doesn't work

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246088>

Mathematica 12 on wolfram cloud isn't rendering the table for an association of lists. According to the documentation you should be able to make columns in the table by:

However I tried this

asked by Ion Sme <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=62529> 10 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 9 votes

Creating the Yin Yang symbol with minimal code

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246309>

The following code creates the Yin Yang symbol

asked by nilo de roock <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=156> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 15 votes

On the ordering of the vertices of a polygon

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245994>

Writing:

```
pts = {{1, 0}, {2, 0}, {2, 3}, {3, 3}, {3, 4}, {0, 4}, {0, 3}, {1, 3}, {1, 0}};
Graphics[{Red, Point[pts], Blue, Line[pts]}
```

we get:

and all of this ...

asked by Rolex <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=80016> 9 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 15 votes

Is it possible to vary the thickness of curves according to their color code

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246125> I have this data `data = Table[{x, Sin[5 x], Tanh[3 x]}, {x, -1, 1, 0.01}]`;

which I plot as follows

asked by valar morphulis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26937> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 6 votes

How can I style a Line like "Glassrectangle"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246046>

I'd like a thick Line to look like ChartElementFunction -> "GlassRectangle" How can that be accomplished?

asked by Gannicus <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=80033> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 11 votes

1.2.2 Greatest hits from previous weeks

What's the most difficult multidimensional integral that Mathematica has solved?	17
Extract real part of a complex expression better than Re does .	18
Exporting graphics to PDF - huge file	18
My Girlfriend is going to prison...Save her with Math	18
How to plot an ellipse?	19
Is there something like DensityPlot3D to visualize atomic orbitals?	19
Calling Correct Function for Plotting DiracDelta	19

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 34 votes

answered by nixeagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 54 votes

Exporting graphics to PDF - huge file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1542>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

asked by Matthew Leingang <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=395> 109 votes

My Girlfriend is going to prison...Save her with Math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=135937>

Salacious title, but true story.

asked by Prisoners Dilema <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46025> 42 votes

answered by bobthechemist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7167> 23 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using

```
Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]
```

but I'm getting ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 18 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 30 votes

Is there something like DensityPlot3D to visualize atomic orbitals?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32378>

I'm visualizing some hydrogen like atomic orbitals. For looking at plane slices of the probability density, the DensityPlot function works well, and with something ...

asked by Peeter Joot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10> 45 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 25 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta[] function. When using this inside of a ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

1.2.3 Can you answer these questions?

Speeding up this function?	20
Error when integrating with constants?	20
Is there an analog of ArrayQ for datasets?	20

Speeding up this function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246242> Is there a way to speed this function?

asked by An old man in the sea. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11313> 2 votes

Error when integrating with constants?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246300>

I'm trying to integrate an ellipse: $(x^2)/\alpha^2 + ((y^2)/\beta^2) = 1$. I am not sure if I should have insert constants for alpha and beta or if there's a way to keep them there.

This is my code

asked by user80088 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=80088> 1 vote

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 0 votes

Is there an analog of ArrayQ for datasets?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=246152>

ArrayQ provides a nice way to check for missing data (specifically, it checks if the array is ragged). But if you import your data as a dataset, and apply ArrayQ, it will return False for both ragged ...

asked by theorist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45215> 1 vote

1.3 Thursday, May 13, 2021

1.3.1	Top new questions this week	21
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1.3.1 Top new questions this week

Finding "chains" of numbers in a matrix	21
How to formulate this problem in Mathematica?	21
Problem with optimal control and Pontryagin's maximum principle	22
Sorting Associations by DayName (day of week) using KeySort and/or KeySortBy	22
Using the PowerPoint's laser pointer in symbols of plots	22
How would one add Hyperreals as a new type to Mathematica?	23
Extract held value from Association	23

Finding "chains" of numbers in a matrix

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245937>

To give some context, this problem is related to music theory. I have a matrix I'm generating with this code:

asked by Eriek <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18649> 6 votes

answered by thorimur <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63584> 9 votes

How to formulate this problem in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245908>

Say, I have the following expressions

$$f = R[p]$$

$$g = S[p]$$

where R,S are rational functions, and I want to find a polynomial such that

asked by nilo de roock <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=156> 6 votes

answered by Roman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26598> 11 votes

Problem with optimal control and Pontryagin's maximum principle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245797>

For dynamic system: $\dot{x} = \frac{df}{dx} + u$ where $f = e^{-x^2}$ It is necessary to develop optimal control, minimizing criterion: $J = \int_0^{t_f} ((\frac{df}{dx})^2 + u^2) dt$ Algorithm:

We ...

asked by dtn <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=67019> 6 votes

answered by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 7 votes

Sorting Associations by DayName (day of week) using KeySort and/or KeySortBy

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245721>

I have an association where the keys are the days of the week:

asked by theorist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45215> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 6 votes

Using the PowerPoint's laser pointer in symbols of plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245800>

I am interested in exploiting a symbol that is similar to the PowerPoint's laser pointer in the role of PlotMarkers. Is there any idea to create that!? This symbol ...

asked by Inzo Babaria <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=33967> 5 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 12 votes

How would one add Hyperreals as a new type to Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245782>

Hyperreals are an extension to the real numbers; they formalise the concepts of infinities and infinitesimals as numbers, rather than the named limit points outside of the system of reals and form ...

asked by Julian Moore <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12858> 5 votes

Extract held value from Association

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245784>

Consider an association which contains a key which must not be prematurely evaluated.
`assoc = <| key :> value |>`

For example, a value of ...

asked by Anti Earth <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=32591> 5 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 6 votes

1.3.2 Greatest hits from previous weeks

1 Plot, 2 Scale/Axis	24
How to perform a multi-peak fitting?	24
Standard deck of 52 playing cards in curated data?	24
Is it possible to export the equations from Mathematica to MAT- LAB?	25
\LaTeX and Mathematica	25
How can I plot implicit equations?	25
Calling Correct Function for Plotting DiracDelta	26

1 Plot, 2 Scale/Axis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=627>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 152 votes

answered by ArgentoSapiens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=92> 152 votes

How to perform a multi-peak fitting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26336>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3). The ...

asked by Everett You <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1389> 55 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 55 votes

Standard deck of 52 playing cards in curated data?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16108>

I am not sure how to find out what all is included as curated data. For example, are the individual images of each of the 52 cards in a standard deck of playing cards included?

If not, is there a way ...

asked by JohnD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1629> 25 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 23 votes

Is it possible to export the equations from Mathematica to MATLAB?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=14035>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

asked by Seyhmus Güngören <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4256> 43 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 48 votes

L^AT_EX and Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=736>

I quite often would like to draw graphics in my L^AT_EX documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

asked by Thomas Rot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=227> 130 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 46 votes

How can I plot implicit equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34668>

If you enter the following into Wolfram | Alpha, you get nice graphs:

graph $4x^4 + y^2 = 2$

How do you do this in Mathematica? I realize that these are not ...

asked by Rollie <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10174> 40 votes

answered by Timothy Wofford <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9391> 41 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta[] function. When using this inside of a ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

1.3.3 Can you answer these questions?

Excess lines in the solution plot of vector ODE	26
Algorithmically imposing a substitution in a difficult integral . .	26
How to expand a rational function as a single fraction	27

Excess lines in the solution plot of vector ODE

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245826>

I've got an ODE system, which I attempt to solve by two ways: solving the system itself, and using vector ODE. Here is code of first way:

asked by Cpp Nosavvier <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79893> 3 votes

Algorithmically imposing a substitution in a difficult integral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245884>

Consider the following integral:

$$I = \frac{1}{\pi c^2} \int_{r=0}^c 2\pi r e^{-\frac{(\sqrt{a^2-r^2}-\sqrt{b^2-r^2})}{\lambda}} dr$$

under the conditions $a > b > c > \dots$

asked by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 2 votes

How to expand a rational function as a single fraction

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245673>

This has been annoying me for a long time. I want a rational function to be represented in the form

$$\frac{a_n x^n + \dots a_0 x^0}{b_m x^m + \dots b_0 x^0}$$

But this seems to be quite difficult. Mathematica ...

asked by grdgfr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=28163> 2 votes

answered by Ulrich Neumann <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53677> 0 votes

1.4 Thursday, April 29, 2021

1.4.1	Top new questions this week	27
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1.4.3	Can you answer these questions?	33

1.4.1 Top new questions this week

Replacing duplicates instead of deleting them	28
RecurrenceTable and While	28
Speed up averaging of numerically solved differential equations .	28
FEM: how to redo a composed boundary mesh for better quality?	29
Were these Images made with Wolfram Language / Mathematica? ica?	29
How to find the repeated elements in a vector	29
How to separate two regions in DensityPlot	30

Replacing duplicates instead of deleting them

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245078>

My code replaces each repeated element by "X".

asked by azerbaijan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53172> 10 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 18 votes

RecurrenceTable and While

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2450308>

Good day. Let's take an example from Help on RecurrenceTable

asked by macros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79485> 6 votes

answered by Roman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26598> 3 votes

Speed up averaging of numerically solved differential equations

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245121>

I deals with a coupled system with non-linear differential equations of first order. I perform numerical solution with NDSolve and then use obtained solutions,

asked by Artem Alexandrov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49992> 5 votes

answered by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 1 vote

FEM: how to redo a composed boundary mesh for better quality?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245050>

Suppose you have region with 2 materials: one embedding material matrix containing some particles

asked by Mauricio Fernández <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24710> 4 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 5 votes

Were these Images made with Wolfram Language / Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245080>

I am currently writing a paper in which Fibonacci Spirals are discussed. In the text of the paper the mathematics of these objects is discussed and the relevant equations and relationships are shown ...

asked by urquiza <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79636> 4 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 9 votes

How to find the repeated elements in a vector

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245068>

Is there a way to write a function where the input is a vector and the output is the elements in the vector that are repeated? I was trying to use something along the lines:

asked by Trashlife <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79628> 4 votes

answered by Roman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26598> 7 votes

How to separate two regions in DensityPlot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245051>

I want to separate two regions in DensityPlot similar to the attached image.

In my code and the obtained result, I want to separate the region with less value of one from others. How can I do this? ...

asked by mehrosadat ebrahimi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=40575> 4 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 4 votes

1.4.2 Greatest hits from previous weeks

How to graph a sphere with cartesian equations?	30
Parallel and perpendicular symbol from Mathematica to L ^A T _E X .	31
How do I make a 3DPlot using cylindrical coordinates?	31
What does Compile[] do to make code run so much faster? . . .	31
How do I clear all user defined symbols?	32
Formatting legend text font	32
How can I plot the direction field for a differential equation? . .	32

How to graph a sphere with cartesian equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=24169>

I'm new to Mathematica and I need to ask how to graph a sphere, cylinder, etc.. using cartesian equations.

For example in sphere's case $x^2 + y^2 + z^2 = 1$

I tried to use ...

asked by German <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7145> 8 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 14 votes

Parallel and perpendicular symbol from Mathematica to L^AT_EX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to L^AT_EX:

$$\begin{bmatrix} E_{\parallel} \\ E_{\perp} \end{bmatrix}$$

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 20 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 27 votes

How do I make a 3DPlot using cylindrical coordinates?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19076>

I'm trying to plot a function of the form $z(r, \theta)$ where $r \in [0, R]$ for a finite R , $\theta \in [0, 2\pi[$, and z is the third coordinate, a function of the first two. I couldn't find anything ...

asked by Learning is a mess <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5643> 19 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 26 votes

What does Compile[] do to make code run so much faster?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2371758>

I am looking for an ELI5 explanation of what Compile[] in the Wolfram Language context does and why it works so much faster than uncompiled code in certain cases. I am trying to get more insight to ...

asked by anon248 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66458> 20 votes

answered by chasly - supports Monica <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34024> 9 votes

How do I clear all user defined symbols?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=850>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

asked by niklasfi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=82> 99 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 98 votes

Formatting legend text font

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3433>

I am using this code to plot a graph, and I am trying to make the font of the legend bigger.

asked by Julia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=525> 20 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 25 votes

How can I plot the direction field for a differential equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8841>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

asked by Matt Groff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1735> 33 votes

answered by Peter Breitfeld <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=307> 26 votes

1.4.3 Can you answer these questions?

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Custom multiplication operation between variables	33

Artifacts When Plotting Results of Numerical Integration

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2451018>

I am trying to reproduce the following graph of phase shifts as function of frequency.

Please see my code bellow. I used Mathematica to solve for t_1 and ...

asked by guestuser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76488> 2 votes

How to solve a system with infinitely many equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=245194>

I need to solve the following system of (infinitely many) equations. I am looking for $V(0, 0)$

$t \in \{0, 1, 2, \dots\}$ with one caveat that $s \leq 1 + t$ should hold.

$s \in \{1, 2, 3, L - 1\}$

fixed ...

asked by Monire Jalili <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=62240> 1 vote

Custom multiplication operation between variables

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2452988>

I am constructing polynomial expressions in the variables $s[0], s[1], \dots, s[n]$ and I'm trying to define a new operation to simplify the expression:

asked by David <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72836> 1 vote

1.5 Thursday, April 22, 2021

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1.5.1 Top new questions this week

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joining three lists to plot data with errors

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244887>

I have three lists:

```
x = {x1, x2, ...},
y = {y1, y2, ...},
yErr = {y1Err, y2Err, ...}
```

that I want to join into the following format:

asked by uuu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42359> 7 votes

answered by Ulrich Neumann <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53677> 9 votes

Interpreting traditional math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244672>

There are two ways (afaik) to parse traditional math string to an expression:

asked by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 7 votes

answered by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 3 votes

Is it possible to define conjugate of a function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244907>

Could you help me, please? I have two complex functions of real variable $f[x]$ and $fc[x]$ such that one is a conjugate of another one. I'd like to take a conjugate of an expression that includes both of ...

asked by Svetlana <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72941> 6 votes

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 9 votes

Maximal circle packing inside a given square

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244820>

How to pack n equal disks (radius $a/2$) with maximal area inside a given rectangle? I'm trying to solve this problem using Mathematicas Region functions. Here my approach: Maximize the area of the ...

asked by Ulrich Neumann <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53677> 6 votes

answered by cvgmt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72111> 6 votes

Some doubts about symbolic equations in Wolfram Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244961>

I need to perform the following operations using Wolfram Mathematica. I have these equations:

$$ab = c + d + e$$

$$\frac{d}{f} = gh + i$$

$$k = \frac{a}{c}$$

I need to obtain k as a function of: a, b, c, e, \dots

asked by Skyhawk <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79597> 5 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 9 votes

Count number of balls in each bin, given a two-element sequence of balls and bins

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244834>

If I have a list:

```
{ball, ball, BINDIVIDER, ball, ball, ball, BINDIVIDER, BINDIVIDER, ball, BINDIVIDER, ball}
```

The balls and bins can be in any permutation. Then, the ...

asked by apkg <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35029> 5 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 6 votes

FEM: elastic cylinder under circumferential pressure

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244993>

Suppose you have an elastic cylinder of radius R and height H and you want to solve the mechanical 3D equilibrium with Mathematica's FEM. How do you impose a pressure p only on the cylinder ...

asked by Mauricio Fernández <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24710> 4 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 4 votes

1.5.2 Greatest hits from previous weeks

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Plot data from txt file?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=5910>

I have data in file.txt which can be expressed by 20000x11 matrix. I do not want to import all of these data. How can I plot graph of the column 1 & column 4?

asked by Gokce <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1297> 21 votes

answered by user1066 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=106> 24 votes

How to make a Spherical Cow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=125043>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

asked by Sumit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8070> 69 votes

answered by andre314 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5467> 76 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 485 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 288 votes

My Girlfriend is going to prison...Save her with Math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=135937>

Salacious title, but true story.

asked by Prisoners Dilema <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46025> 42 votes

answered by bobthechemist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7167> 23 votes

Plotting the Star of Bethlehem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236499>

Christmas is around the corner! In preparation, consider the polynomial $f[x_,y_] := 1/10 (4 - x^2 - y^2)$ and define $r = (f_x, f_y)$ using the ...

asked by fwgb <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44151> 30 votes

answered by Roman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26598> 22 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 34 votes

answered by nixeeagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 53 votes

1.5.3 Can you answer these questions?

Understanding the behavior of HypergeometricPFQ	40
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Understanding the behavior of HypergeometricPFQ

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244963>

this is my very post here, so I apologize for any possible format issue. I am using HypergeometricPFQ functions (more exactly ${}_3F_2$) as approximants for other more complicated functions. Here are ...

asked by avg <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79519> 1 vote

recursively find StringCases

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244663>

Can I recursively extract StringCases[] that match a specific pattern? Here is a minimalist example (not my actual problem):

asked by Conor Cosnett <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36681> 2 votes

How to specify custom Loss function for Predict

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244702>

How can I use Predict[Xs->Ys, Method->"NeuralNetwork"] to predict 90%-quantile (instead of mean value)? Utility Function does not work well for this case, because it assumes ...

asked by Artem Vorozhtsov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61755> 2 votes

1.6 Thursday, April 15, 2021

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1.6.1 Top new questions this week

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Efficiently compute Minkowski sum of a 2D Region and a Disc of radius r?	42
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Is there a neat code to swap elements of a list?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244314>

I want to swap the list to make a new list as follows. The code works but I'm wondering if there is a neat code, or an elegant way to do this.

asked by anhnha <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18805> 9 votes

answered by kirma <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3056> 10 votes

Stokes equations in 2D with traction boundary conditions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244482>

This is a follow-up to a previous question (see here). We would like to solve the two-dimensional Stokes equations using the FEM package in Mathematica, when we prescribe traction boundary conditions. ...

asked by Alex R <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=78043> 7 votes

answered by Oleksii Semenov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63028> 3 votes

Transform a number to a factorial

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244566>

I came across the need to transform a number into a factorial n , with positive integer n . I have searched in the MMA information but I can't find anything like that. I imagine an input, which verifies ...

asked by zeros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26849> 7 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 6 votes

Stopping condition for FindMinimum / FindMaximum

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244313>

This seems like it should be a simple question – but I am looking to use a "home made" stopping condition with FindMaximum, while evaluating a very complex function. Printing out the ...

asked by Richard E <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79342> 7 votes

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 8 votes

Efficiently compute Minkowski sum of a 2D Region and a Disc of radius r ?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244565>

Given a 2D Mathematica Region, e.g. $A = \text{Region}[\text{RegionDifference}[\text{Disk}[\{0, 0\}, 2], \text{Disk}[\{2, 0\}, 2]]$, how can I grow the region by an arbitrary radius r ? For example, ...

asked by Aaron T. Becker <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76690> 6 votes

answered by cvgmt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72111> 5 votes

Random orthogonal matrix

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244316>

Is there a way to generate real random orthogonal matrices in mathematica? If Q is an orthogonal matrix, it's properties are

asked by Jasmine <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73364> 6 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 9 votes

Detecting patterns in a graph network

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244592>

If we create a random graph

```
Chop[LowerTriangularize[RandomReal[{-1, 1}, {10, 10}], -1], 0.6] /. 0 -> \[Infinity] /
WeightedAdjacencyGraph[%]
```

How can ...

asked by Teabelly <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=56986> 5 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 6 votes

1.6.2 Greatest hits from previous weeks

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Conversion of Sine to Cosine	46

What do the X and Y axis stand for in the Fourier transform domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=85139>

In Wolfram Mathematica the function Fourier has the following declaration

```
Fourier[list]
```

And after a list is given to the ...

asked by user253956 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29958> 27 votes

answered by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 61 votes

Plot, extract data to a file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19859>

I need to save data that Mathematica uses inside the Plot command. The format that I would like to have is:

```
x1 y1  
x2 y2
```

asked by molkee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5097> 30 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 47 votes

Get a "step-by-step" evaluation in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=148>

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it? If so, how does one do it?

asked by Cydonia7 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44> 131 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 109 votes

How to add a vertical line to a plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3561>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 64 votes

answered by Ajasja <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=745> 83 votes

Selecting every n-th element from a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=64003> I have a list:

```
data = {4, 5, 7, 8, 9, 5, 3, 2, 1, 2, 13, 12};
```

I want to take those elements in the list which are located at equal distances, say, every third ...

asked by Suro <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=20003> 37 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 34 votes

How to graph a sphere with cartesian equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=24169>

I'm new to Mathematica and I need to ask how to graph a sphere, cylinder, etc.. using cartesian equations.

For example in sphere's case $x^2 + y^2 + z^2 = 1$

I tried to use ...

asked by German <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7145> 7 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 13 votes

Conversion of Sine to Cosine

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=67521>

I'm solving equations with many Cosines and Sines. And I want to convert all the Sines to Cosines using trigonometric formulas such as $\cos(x)=\sin(x+\pi/2)$. How can I do this?

asked by YongCheol Kwon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23041> 4 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 2 votes

1.6.3 Can you answer these questions?

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How to use ScalingFunctions with Graphics ChartElements . .	47

RandomInstance of GeometricScene producing unexpected result

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244335>

Consider the following scene as an example:

asked by user13892 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13892> 1 vote

Solving an ordinary differential equation with boundary condition at infinity

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244342>

I want to solve the following differential equation $f''[z] + (1/z)*f'[z] - f[z] + f[z]^3 == 0$ subject to the boundary conditions

asked by HeitorGalacian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73726> 1 vote

answered by Mariusz Iwaniuk <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26828> 0 votes

How to use ScalingFunctions with Graphics ChartElements

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=244387>

How to draw spheres with BubbleChart with a reversed vertical axis? The 3rd example shows the problem (empty plot), likely caused by the transformation, but how to correct it?

asked by HuibH <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70256> 3 votes

1.7 Thursday, April 1, 2021

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1.7.1 Top new questions this week

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 Find all English words that can be comprised of Element Abbreviations found in the Periodic Table 48
 Efficient uniform sampling of certain Boolean matrices 48
 Incorrect integration from article? 48
 Running Mathematica in ‘SpouseMode’ 49
 Putting together several ListPlot 2D in a 3D graphic 49
 Combine SortBy with ReverseSortBy 49

Are Mathematica’s maps copyright-free?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243660>

Are the maps available in Mathematica copyright-free? For instance, if I generate the image

asked by sam wolfe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=64001> 13 votes

answered by Carl Lange <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57593> 24 votes

Find all English words that can be comprised of Element Abbreviations found in the Periodic Table

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243664>

This question is majorely influenced by a meme...

Now, I thought... it would be interesting to see what kind of "passwords" could one derive using Periodic Table :D Hence, I began to work ...

asked by e.doroskevic <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18696> 9 votes

answered by creidhne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41569> 3 votes

Efficient uniform sampling of certain Boolean matrices

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243547>

I want to uniformly sample $(0,1)$ -matrices with certain constraints. In particular, I want sum of each row to be rowsum and the sums of columns to equal ...

asked by kirma <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3056> 8 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 7 votes

Incorrect integration from article?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243711>

Recently I came across an interesting article by Daniel Lichtblau, where the integral

$\text{Integrate}[\text{Abs}[x - y]^n, \{x, 0, 1\}, \{y, 0, 1\}]$

asked by user64494 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7152> 7 votes

answered by Ulrich Neumann <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53677> 8 votes

Running Mathematica in 'SpouseMode'

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243859>

In this previous question I looked into a deprecated capability of Mathematica from Version 2. Mathematica command that allows it to read my intentions Thanks to all for your answers. I note that ...

asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 6 votes

answered by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 1 vote

Putting together several ListPlot 2D in a 3D graphic

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243823>

I'm trying to put together several different 2D plots in a 3D graphics to create a figure which would be like the one below (taken from <https://aip.scitation.org/doi/10.1063/1.4998724> However my ...

asked by AntoineM <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79171> 6 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 4 votes

Combine SortBy with ReverseSortBy

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243776>

Suppose I have a dataset, which I want to sort according to two criteria. However, I want the first criteria to be sorted ascending, and the second descending. This would require to somehow combine ...

asked by Gabriel Landi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=347> 6 votes

answered by SquareOne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19960> 3 votes

1.7.2 Greatest hits from previous weeks

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What's the most difficult multidimensional integral that Mathe- matica has solved?	51
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How to add a front-end to the free Wolfram Engine?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=198839>

<https://blog.stephenwolfram.com/2019/05/launching-today-free-wolfram-engine-for-developers/>

<http://www.wolfram.com/engine/>

The Free Wolfram Engine for Developers is available for pre-production ...

asked by Alexey Golyshev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23402> 65 votes

answered by Alexey Golyshev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23402> 55 votes

How to express trigonometric equation in terms of of given trigonometric function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=434>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

asked by Prashant Bhate <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=99> 30 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 37 votes

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

Standard deck of 52 playing cards in curated data?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16108>

I am not sure how to find out what all is included as curated data. For example, are the individual images of each of the 52 cards in a standard deck of playing cards included?

If not, is there a way ...

asked by JohnD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1629> 25 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 23 votes

Even Fibonacci numbers

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=37266>

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

asked by xyz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9627> 34 votes

answered by rcollyer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=52> 46 votes

How do I clear all user defined symbols?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=850>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

asked by niklasfi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=82> 99 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 98 votes

How to perform a multi-peak fitting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26336>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3). The ...

asked by Everett You <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1389> 55 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 55 votes

1.7.3 Can you answer these questions?

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Graphics get cropped when wrapped in Hyperlink and Inset in MMA 12.2 (doesn't seem to happen on 12.1 RPi) Bug?	53
Does Mathematica have build-in function to compute dimension of square polynomial system?	53

pure function assignment

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243708>

I do not understand this statement from the Introduction to Dynamic tutorial:

asked by Dave <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79143> 1 vote

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 0 votes

Graphics get cropped when wrapped in Hyperlink and Inset in MMA 12.2 (doesn't seem to happen on 12.1 RPi) Bug?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243637>

I've noticed that wrapping a `Graphic[]` in `Hyperlink[]` causes weird things to happen when using ...

asked by Mike H <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=79121> 1 vote

Does Mathematica have build-in function to compute dimension of square polynomial system?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=243849>

I'm working with square polynomial systems and wish to know if a (small) system has a finite number of solutions. That is, if it's zero-dimensional. I'm not aware of any built-in function to do this ...

asked by Dominic <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47466> 1 vote

1.8 Thursday, March 25, 2021

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1.8.1 Top new questions this week

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How to make a circular heat map or diagram in Mathematica?	56

Head[x] vs x[[0]]?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242183>

Can we say Head[x] and x[[0]] are identical ? In mathematica manual I could find :
'The head is the part with index 0'

But I am not sure whether Head[x] are x[[0]] are really interchangeable in any ...

asked by imida k <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34532> 15 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 13 votes

How to roll a graph on the y-axis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242180>

I want to roll the function $f(x)=\sqrt{x}$, $x[0,1]$ along the y-axis. I know how to rotate the graph around a point, but I'm not sure how to rotate along an axis in 2D. Rotating around a point e.g. (0,...

asked by Guy Foxx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75736> 14 votes

answered by cvgmt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72111> 17 votes

Numerically solving Helmholtz equation in 2D for a Guitar

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242138>

Hi I am new to using Mathematica, so am not too confident. I am essentially trying to model vibrations of a guitar sound board for a project. It would be great to get some visualisations of the ...

asked by sp96 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77970> 11 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 8 votes

How to draw the tree in a "pitchfork" form?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242140>

How to set the options or other parameters in a TreePlot to draw the branching outside of the vertex? I.e. in a form similar to a dendrogram (but the dendrogram plot itself does not support the ...

asked by Slepecky Mamut <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=48033> 10 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Digitizing a geometrical sensor

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242186>

I want to quantify the flow from photos taken from a sensor such as this one:

For a limited number of readings, I can use a plot digitization method. However, I need to do this many times for ...

asked by MathX <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38575> 9 votes

answered by MelaGo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63360> 10 votes

How Can I Compute The Automorphism Group of a Matroid?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242030>

I want to compute the automorphism group of a matroid. This reduces to the following (more general) problem: Suppose I have a list of sets $\{\{b_{11}, \dots, b_{1k}\}, \dots, \{b_{k1}, \dots, b_{kk}\}\}$...

asked by Madeline Brandt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=51040> 7 votes

answered by Madeline Brandt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=51040> 6 votes

How to make a circular heat map or diagram in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242425>

Is there any way to make a circular heat map in Mathematica? Thanks for your help! Here is a toy example for regular heat map. Can anyone help me make it to a circular one?

asked by Frankie <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70269> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 4 votes

1.8.2 Greatest hits from previous weeks

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How can I draw the Olympic rings with Mathematica??

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8885>

How can I draw the 5 interlocking Olympic rings with Mathematica? (SVG version)
Edit

Hard choice, but some pretty cool answers here. I didn't have 3D answers in mind when I posted the question, but ...

asked by Mike Honeychurch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77> 44 votes

answered by cormullion <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61> 23 votes

Plot, extract data to a file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19859>

I need to save data that Mathematica uses inside the Plot command. The format that I would like to have is:

asked by molkee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5097> 30 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 47 votes

What does "Tag Integer is Protected" message mean?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=6738>

(Newbie question)

For every function I define I get this message: When I close and reopen Mathematica, and re-enter the function definition, I don't get the message anymore. What does it mean?

asked by stevenvh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1450> 11 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 13 votes

Selecting every n-th element from a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=64003>

I have a list:

```
data = {4, 5, 7, 8, 9, 5, 3, 2, 1, 2, 13, 12};
```

I want to take those elements in the list which are located at equal distances, say, every third ...

asked by Suro <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=20003> 37 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 33 votes

Labeling individual curves in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4444>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience,...

asked by Tianxiang Xiong <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1041> 63 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 47 votes

Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 201 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 261 votes

Plotting the frequency spectrum of a data series using Fourier

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18082>

```
testData = Table[N@Sin[500 x], {x, 0, 100}];
ListLinePlot[Abs[Fourier[testData]], PlotRange -> Full]
```

Gives me Which I do not expect because the Fourier ...

asked by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 14 votes

answered by KennyColnago <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3246> 16 votes

1.8.3 Can you answer these questions?

Is the fancy script 'C' <code>mathscrC</code> available in Mathematica? . . .	59
FormFunction output automatic download	59
Generating a lattice by N^{th} iteration of unit cell	60

Is the fancy script 'C' `mathscrC` available in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242074>

In `mathjax \mathscr{C}` gives me the character `\mathscr{C}` that I want. There is a UTF listing for this character. <https://www.compart.com/en/unicode/U+1D49E> If I copy form this webpage and paste ...

asked by Steven Thomas Hatton <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44139> 2 votes

FormFunction output automatic download

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242097>

I want to create a FormFunction that takes in a CSV file, applies some operations on the data and outputs another CSV file. I would like for the output CSV file to be automatically downloaded. I have a ...

asked by Gabriel Landi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=347> 1 vote

Generating a lattice by N^{th} iteration of unit cell

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=242436>

This question is in continuation of the my previous question that was not clearly presented by me at all. I have a unit cell, and I would like to generate a lattice but in iterative order. For ...

asked by L.K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=15927> 1 vote

1.9 Thursday, March 18, 2021

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1.9.1 Top new questions this week

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 How to plot a "main effect" plot? 62
 generating tuples of ones and zeroes with a fixed number of ones 62
 How to add an attractive potential (migration term) named component to Mass Transport PDE 62

Why am I getting that $0.999999999999988 \geq 1.0$ is True?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241791>

I am getting these results:

asked by Craig Carter <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12461> 20 votes

answered by Chip Hurst <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4346> 23 votes

Can we make an "Outerable" Attribute?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241712>

We can declare a function to have the Listable Attribute so that it automatically threads over lists in a particular way. For functions of multiple arguments it ...

asked by Tanner Legvold <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68925> 14 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 8 votes

How to fit a curve in a picture with an equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241686>

For a curve taken from a picture, is there any method to fit it with an equation if it appears to be some standard curve? For example, in the following picture, the curve looks like an ellipse or a ...

asked by Nobody <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66106> 10 votes

answered by mikado <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36788> 9 votes

Bug with Json payload with diacritics for HTTPRequest

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241573>

Working in the creations of APIs with Mathematica 12.2, I got this problem with diacritics when sending JSON data. Here is a toy code using httpbin.

asked by Murta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2266> 10 votes

answered by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 8 votes

How to plot a "main effect" plot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241876>

I'm trying to make a "main effect" type chart but I haven't found a way to do it in Mathematica. The main effect plots are the graphs plotting the means for each value of a categorical ...

asked by ALEXANDRE ARARIPE <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77894> 7 votes

answered by MassDefect <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42264> 11 votes

generating tuples of ones and zeroes with a fixed number of ones

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241943>

I would like to generate all the tuples of ones and zeros of a given length and with a given number of ones without generating all the possible tuples, which is impossible for tuples of large enough ...

asked by EGME <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53849> 6 votes

answered by Roman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26598> 10 votes

How to add an attractive potential (migration term) named component to Mass Transport PDE

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241642>

Wolfram Mathematica 12.2 now features "Named Partial Differential Equation Terms" For specific physics fields, relevant PDE terms have been packaged as components and augmented with ...

asked by rhermans <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10397> 6 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 4 votes

1.9.2 Greatest hits from previous weeks

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Plotting the frequency spectrum of a data series using Fourier

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18082>

```
testData = Table[N@Sin[500 x], {x, 0, 100}];
ListLinePlot[Abs[Fourier[testData]], PlotRange -> Full]
```

Gives me Which I do not expect because the Fourier ...

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answered by KennyColnago <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3246> 16 votes

Is there something like DensityPlot3D to visualize atomic orbitals?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32378>

I'm visualizing some hydrogen like atomic orbitals. For looking at plane slices of the probability density, the DensityPlot function works well, and with something ...

asked by Peeter Joot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10> 45 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 25 votes

xkcd-style Plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11350>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over ...

asked by Amatya <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2039> 622 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 483 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 17 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 33 votes

How can I plot implicit equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34668>

If you enter the following into Wolfram Alpha, you get nice graphs:

graph 4 $x^4 + y^2 = 2$

How do you do this in Mathematica? I realize that these are not ...

asked by Rollie <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10174> 39 votes

answered by Timothy Wofford <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9391> 40 votes

Oak Island, extending the "Alignment", possible Great Circle?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235815>

During these days of COVID, I indulged in the guilty pleasure of watching The Curse of Oak Island - Season 8, Episode 4 Alignment, which viewed last night (1 Dec 2020). During the episode, some "...

asked by Jagra <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=571> 13 votes

answered by Carl Lange <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57593> 12 votes

1.9.3 Can you answer these questions?

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Reduce the time to find six integer numbers so that the angle of two vectors equal to $\text{Pi}/6$	66

ColorFunction in ListContourPlot3D raising error when using more than one argument

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241851>

The documentation of ColorFunction states that in ListContourPlot3D your chosen function gets the arguments ...

asked by Fidel I. Schaposnik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45839> 1 vote

Autocomplete file argument for custom function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241842>

When typing Importin a notebook Mathematica suggests to autocomplete the file path you want to enter or choose a file using the GUI. Is there a way to let a ...

asked by Gert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27889> 1 vote

Reduce the time to find six integer numbers so that the angle of two vectors equal to $\text{Pi}/6$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241633>

I am trying to find six integer numbers a, b, c, x, y, z so that the angle of two vector {a, b, c ...

asked by minhthien_2016 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5320> 1 vote

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 0 votes

1.10 Thursday, March 11, 2021

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1.10.1 Top new questions this week

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Metropolis-Hastings Algorithm - Significantly slower than Python

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241402>

I would like to code a Metropolis Hasting algorithm and thought I would get the general scheme of things going with a toy example.

I think I got it running but my Mathematica code runs significantly ...

asked by Smerdjakov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=55615> 13 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 22 votes

Manipulate for playing along with "Deal or No Deal?"

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241234>

I started building this Manipulate and am certain I can do so on my own, but thought it was fun enough that others might want to try. (If this is some abuse of the ...

asked by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 9 votes

BoxWhiskerChart - how to show Quartile and other values

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241231>

I have a question in respect of the BoxWhiskerChart. The default functionality of BoxWhiskerChart is that you mouse over it and ...

asked by Jiri <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77351> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Strictly Increasing Sequences of Length n in a List

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241087>

I need to determine how many strictly increasing sequences of a certain length (e.g. 5) are contained in a list of integers. I would be very happy if someone could help me. A sequence would be ...

asked by hnh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77559> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Wafer Chucking Model

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241086>

I am trying to calculate the pressure required to flatten a bowed wafer. The simple model I am using for the study has a bottom layer (the bowed wafer) pushed against a harder flat surface as shown in ...

asked by martin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77626> 8 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 2 votes

Art on Mathematica: How can I export 4K resolution png images?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241503>

This question is solely based upon [1] and therefore, the reading of [1] could be interesting. How can I export the image created, by the code in the following, with high definition, beautiful, 4K ...

asked by M.N.Raia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71570> 8 votes

answered by thorimur <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63584> 10 votes

Skewed grid in plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241405>

Is it possible to add a skewed grid in a plot? Consider the following image;

The grey axes are the normal axes (\mathbf{e}_1 and \mathbf{e}_2), the black axes are transformations $\mathbf{e}'_1 = 2$

asked by mf67 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=55498> 8 votes

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 8 votes

1.10.2 Greatest hits from previous weeks

Mathematica vs. Python - how does Mathematica compare to Python's scientific computing suite?	70
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How to create animated snowfall?	71
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Mathematica vs. Python - how does Mathematica compare to Python's scientific computing suite?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=86058>

Python's family of packages for scientific computing has matured rapidly. I can pretty much replicate all of Mathematica's functionalities, but with production level and open-source code using the ...

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 49 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 36 votes

Exporting graphics to PDF - huge file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1542>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

asked by Matthew Leingang <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=395> 109 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 88 votes

How do I plot a plane EM wave?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1987>

I would like to display an electromagnetic (EM) wave. I have written code that works, but it does not "shade" the area between the graph and the axes. Both the ...

asked by Rainforest Frog <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=202> 22 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 16 votes

How to create animated snowfall?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16881>

Well, the title is self-explanatory. What sorts of snowfall can we generate using Mathematica? There are two options I suggest to consider:

1) Continuous GIF animations with smallest possible number ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 40 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 54 votes

Image processing: Floor plan - detecting rooms' borders (area) and room names' texts

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19546>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The problem

asked by s.s.o <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=840> 64 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 59 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image< with Mathematica and plot the magnitude and phase ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 17 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 33 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 482 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 288 votes

1.10.3 Can you answer these questions?

Front-end rendering issues on Linux	72
time series - minimum differencing order needed to remove the trend	72
How does 'TextureCoordinateFunction[]' works within 'SurfaceAppearance[]'?	73

Front-end rendering issues on Linux

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241216>

I'm using Mathematica 12.2 on Ubuntu Mate 20.10 on an AMD FX(tm)-8120 with a GeForce GTX 1070 Ti NVIDA card. The issue is that I get unwanted horizontal lines just below the cell that I'm working on ...

asked by c186282 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4515> 1 vote

time series - minimum differencing order needed to remove the trend

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241097>

I was wondering how can I find What is the minimum differencing order needed to remove the trend in a time series? I have a a times series and a TimeSeriesModelFit, which is SARIMA model. I want to ...

asked by Pjana <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75643> 1 vote

How does ‘TextureCoordinateFunction[]’ works within ‘SurfaceAppearance[]’?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=241245>

Following up from @kg1r’s answer here, I’d like to understand how TextureCoordinateFunction[] works within SurfaceAppearance[]

asked by martin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9923> 1 vote

1.11 Thursday, February 25, 2021

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1.11.1 Top new questions this week

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Simplify $1+\text{Sqrt}[2]\text{I-Complex}[1,\text{Sqrt}[2]]$	74
How to correctly calculate the number of seating plans for the 4-couples problem?	75
How to approximate $PV \int_0^\infty \frac{\tan x}{x} dx$?	75
Mirror image of graph	75

Mathematica 12.1: Don’t use Accumulate or Differences on Around objects!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240449>

SUMMARY: If a List,TimeSeries etc. of Around objects contains any identical elements, asked by Aaron Eiben <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72186> 14 votes

answered by Sjoerd Smit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=43522> 11 votes

How to enter a repeating decimal in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240596>

I don't understand how to manipulate numbers with repeating decimal in Wolfram Mathematica language. For example 0.3... does not work as input and I don't see how ...

asked by Simpleton Jack <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22399> 9 votes answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 11 votes

How to judge whether two groups of sequences are equal in cycles?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240325>

There's a set of arrays that I want to remove repeated elements that are equal after rotation:

asked by A little mouse on the pampas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 9 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 11 votes

Simplify $1 + \sqrt{2} I - \text{Complex}[1, \sqrt{2}]$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240522>

The expression $1 + \sqrt{2} I - \text{Complex}[1, \sqrt{2}]$ should be zero. In fact, `N[1 + Sqrt[2] I - Complex[1, Sqrt[2]]]` yields ...

asked by pdmclean <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9154> 7 votes answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 10 votes

How to correctly calculate the number of seating plans for the 4-couples problem?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240357>

Four couples are sitting around a round table, in which husband and wife can not be adjacent. How many different seating plans are there? I want to get as many simple calculations as possible.

asked by A little mouse on the pampas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 7 votes

answered by Beny Izd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77079> 8 votes

How to approximate $PV \int_0^{\infty} \frac{\tan x}{x} dx$?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240461>

What's the mathematica command to get the numerical value of :

$$PV \int_0^{\infty} \frac{\tan x}{x} dx?$$

where PV is the principal value.

asked by Ali Shadhar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=67714> 7 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 7 votes

Mirror image of graph

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240571>

I need to display a directed acyclic graph (say Hasse diagram of partial order) oriented with minimal elements at the bottom, maximal elements at the top as is conventional for Hasse diagrams. I tried ...

asked by Mike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=62210> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

1.11.2 Greatest hits from previous weeks

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What's the most difficult multidimensional integral that Mathematica has solved?	76
xkcd-style Plots	77
Finding Limits in several variables	77
How to use Mathematica functions in Python programs?	77
Plot data from txt file?	78
How to find integer solutions?	78

\LaTeX and Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=736>

I quite often would like to draw graphics in my \LaTeX documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

asked by Thomas Rot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=227> 127 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 46 votes

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

xkcd-style Plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11350>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over ...

asked by Amatya <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2039> 620 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 481 votes

Finding Limits in several variables

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=21544>

Is there a way to find a limit of a multivariable function, like

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y)$$

with Mathematica?

When f is continuous, we can use

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y) =$$

asked by Dominic Michaelis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5899> 31 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 42 votes

How to use Mathematica functions in Python programs?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4643>

I'd like to know how can I call Mathematica functions from Python.

I appreciate a example, for example, using the Mathematica function Prime.

I had search about MathLink but how to use it in Python ...

asked by GarouDan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1058> 69 votes

answered by GarouDan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1058> 28 votes

Plot data from txt file?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=5910>

I have data in file.txt which can be expressed by 20000x11 matrix. I do not want to import all of these data. How can I plot graph of the column 1 & column 4?

asked by Gokce <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1297> 21 votes

answered by user1066 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=106> 24 votes

How to find integer solutions?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=42359>

Following is the equation: Need to solve for integer values of x,y when a,b lies between -1000 and 1000. Problem is to find the number of integer values of pair (x,y) that satisfy it.

asked by Sahil Sareen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12396> 2 votes

answered by bill s <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1783> 4 votes

1.11.3 Can you answer these questions?

Idiomatic pattern for subtracting a function from a list	79
How can I simplify a symbolic tensor expression?	79
Nothing showing up on my LogLogPlots	79

Idiomatic pattern for subtracting a function from a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240468>

I would like to know a more idiomatic way to subtract a function from a list of pairs than this: `Table[point-{0,fitFunction[point[[1]]]}, {point,data}]`

I use this ...

asked by Diffycue <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46327> 1 vote

How can I simplify a symbolic tensor expression?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240422>

My question is about simplifying tensor expressions. If I have $(a + b) \otimes (c + d)$ The function `TensorExpand` gives $a \otimes c + a \otimes d + b \otimes c + b \otimes d$...

asked by Physor <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74507> 2 votes

Nothing showing up on my LogLogPlots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240457>

I am trying to make 2 log log plots. One with each equation, a and g. I don't know why, but the plot is not showing up. My notebook is in the link below. <https://imgur.com/a/sXQX0YS>

What am I doing ...

asked by QuaffyWaffles <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77475> 1 vote

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 0 votes

1.12 Thursday, February 18, 2021

1.12.1 Top new questions this week	80
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1.12.1 Top new questions this week

How to create a spiral using Golden Triangles	80
How to modify default options of Dataset	81
How to use Filling in PolarPlot?	81
How to reduce timing to find the integer numbers a, b, c, d, e, f, g, h, k, m of this equation?	81
How to extract a column (or a row) of a matrix as another column vector/ column matrix (or a row vector), not as a list?	82
Intuitive explanation of RemoteBatchSubmit[] in AWS for total novices?	82
Solving a 2D heat equation on a square with Dirichlet boundary conditions	82

How to create a spiral using Golden Triangles

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239914>

Working with students in a pre-calculus class, an application of the sine law. They are working on a question that has them create a Golden Triangle (A golden triangle is an isosceles triangle in ...

asked by Tom De Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=721> 14 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 14 votes

How to modify default options of Dataset

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239960>

I try to make a dark stylesheet based on the ReverseColor theme. However, dataset headers are barely readable.

This question is related to others such as Question ...

asked by Vly <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47700> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

How to use Filling in PolarPlot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239946>

For example: `PolarPlot[{1, 1 + 1/10 Sin[10 t]}, {t, 0, 2 Pi}]`

how to fill color in the space between 2 functions?

asked by DORA <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74396> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 11 votes

How to reduce timing to find the integer numbers a, b, c, d, e, f, g, h, k, m of this equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239874>

I use by hand to get this result

$$\sqrt{\sqrt{48 + 5\sqrt{3}} + \sqrt{27 + 4\sqrt{3}} + \sqrt{12 + 3\sqrt{3}} + \sqrt{4 + 2\sqrt{3}}} = 1 + 4\sqrt{3}$$

asked by minhthien_2016 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5320> 7 votes

answered by yarchik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9469> 6 votes

How to extract a column (or a row) of a matrix as another column vector/ column matrix (or a row vector), not as a list?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240123>

Suppose I have a matrix 'mat' as

```
mat = Table[Subscript[m, i, j], {i, 5}, {j, 5}];
mat // MatrixForm
```

I want to extract the first column (or any row) as

asked by PoreyS <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=54258> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 6 votes

Intuitive explanation of RemoteBatchSubmit[] in AWS for total novices?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240149>

When I read Wolfram's post about the new features in MMA 12.2 I was intrigued by RemoteBatchSubmit[]. He wrote:

I have only ever used MMA from my laptop, and never used any other cloud computing or ...

asked by TumbiSapichu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53229> 6 votes

Solving a 2D heat equation on a square with Dirichlet boundary conditions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240090>

I am trying to solve the following heat equation problem on the square $[0,1] \times [0,1]$.

$$\begin{equation*} \begin{gathered} u_t = u_{xx} + u_{yy} + f(x,y,t), \quad \iint u(x,y,t) \end{gathered} \end{equation*}$$

asked by kroner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77278> 6 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 7 votes

1.12.2 Greatest hits from previous weeks

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How do I plot a plane EM wave?	85

Crack CAPTCHA using deep learning

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=143691>

Deep convolutional neural networks are very good at computer vision related tasks. Optical Character Recognition (OCR) is one important branch of computer vision. In fact, the convolution neural ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 88 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 98 votes

How to make an inkblot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3345>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 86 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 51 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Exporting graphics to PDF - huge file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1542>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

asked by Matthew Leingang <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=395> 109 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 88 votes

How to make the digits of π go around in a spiral like this?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=109982>

Here is a start.

```
MapIndexed[Text[Reverse[First[RealDigits[Pi, 10, 252]]][[Tr@#2]], #]&,
  Table[{t Cos[t], t Sin[t]}, {t, 0, 16Pi, 0.2}]]//Graphics
```

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 57 votes

answered by Martin Ender <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2305> 73 votes

How to create a new "person curve"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=17704>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter WolframAlpha["person curve"] into a Mathematica ...

asked by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 85 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 45 votes

How do I plot a plane EM wave?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1987>

I would like to display an electromagnetic (EM) wave. I have written code that works, but it does not "shade" the area between the graph and the axes. Both the ...

asked by Rainforest Frog <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=202> 22 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 16 votes

1.12.3 Can you answer these questions?

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Can one preset credentials for ServiceConnect["Twitter", "New"] to allow wolframscript headless use?	86
Warnings while solving a system of coupled differential equations	86

Unpacking list of arguments into parameters

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240016>

I have a list in the following form: `list = {{a,1,3},{b,1,3},{c,1,3}}`

Now I want to apply this list as parameters for the Sum function so that I end up with the ...

asked by Hell stormer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77333> 1 vote

Can one preset credentials for ServiceConnect["Twitter", "New"] to allow wolframscript headless use?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=240056>

Trying to run some wolframscript code from a server, is it possible to set ServiceConnect credentials in the environmental variables for example?

asked by Tim <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=416> 3 votes

Warnings while solving a system of coupled differential equations

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239861>

I have a system of differential equations, given by

asked by No name <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69573> 1 vote

1.13 Thursday, February 11, 2021

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1.13.1 Top new questions this week

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Plot many curves on the same graph	87
Is there any other way to access the n-th element of a BlankSe- quence?	88
Periodic von Neumann neighbours	88
Equivalent of numpy's newaxis	88
Plot[Im[f[x]],...] incorrectly gives graph of identical zero function	89

Mathematica cannot seem to properly handle times in the 1 hour before clocks go back

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239480>

Using Chicago as an example; According to the current rules for applying daylight saving time, at 02:00:00 on the first Sunday of November, clocks in Chicago go back 1 hour (from Central Daylight Time ...

asked by RobertNathaniel <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60404> 24 votes

answered by Patrick Stevens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=30771> 22 votes

Dataset Association of Association vs Hierarchical data

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239455>

I have the following dataset:

asked by Whelp <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1287> 10 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 13 votes

Plot many curves on the same graph

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239609>

This plot has 40 curves on the same graph which makes it hard to see. I need to plot them on one graph. So I have an idea to plot to make it easier to see which one is larger or smaller in each range....

asked by anhnha <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18805> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 21 votes

Is there any other way to access the n-th element of a BlankSequence?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239659>

Consider a named BlankSequence `x__`. How can I access the n-th element?
Is `{x}[[n]]` the only ...

asked by Money Oriented Programmer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42141> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

Periodic von Neumann neighbours

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239512>

From Carl Woll's answer here, I have this code for pulling the von Neumann neighbors:

asked by TubularHell <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76599> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 6 votes

Equivalent of numpy's newaxis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239518>

Numpy has a `newaxis` object that allows you to insert a new dimension of length 1 into an array. So after ...

asked by Dan Piponi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13642> 8 votes

answered by swish <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2490> 8 votes

Plot[Im[f[x]],...] incorrectly gives graph of identical zero function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239728>

Consider

```
Plot[Im[(1 + (-1)^(2/3)*x)/((-1)^(2/3) + x)], {x, 0, 1}]
```

At least in Mma 11 it gives the following picture: Meanwhile,

asked by Roma Lee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57495> 7 votes

1.13.2 Greatest hits from previous weeks

How to create animated snowfall?	89
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Mathematica Minecraft	91
Plotting the frequency spectrum of a data series using Fourier	91

How to create animated snowfall?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16881>

Well, the title is self-explanatory. What sorts of snowfall can we generate using Mathematica? There are two options I suggest to consider:

1) Continuous GIF animations with smallest possible number ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 40 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 54 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta[] function. When using this inside of a ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

How to manipulate 2D plots?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=7142>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 137 votes

answered by IstvánZachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 155 votes

Using Export[] sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the Export command to convert a list of plots into a *.gif file, and the command runs and executes well, but I can't find the file! Where is it ...

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 51 votes

How can I reproduce this mandala with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233050>

I found this image on the Internet and it is very beautiful. How can I reproduce it? The ideal would be to be able to control the colors of the outside as well as the center.

asked by Susana <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=37778> 14 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 35 votes

Mathematica Minecraft

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19669>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 167 votes

answered by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 241 votes

Plotting the frequency spectrum of a data series using Fourier

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18082>

```
testData = Table[N@Sin[500 x], {x, 0, 100}];  
ListLinePlot[Abs[Fourier[testData]], PlotRange -> Full]
```

Gives me Which I do not expect because the Fourier ...

asked by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 14 votes

answered by KennyColnago <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3246> 16 votes

1.13.3 Can you answer these questions?

Fourier transform in polar coordinates using built-in hankel transform of the function constant 1	92
Exponent combinations	92
Plot derivative of a real function consisting of a complex function	92

Fourier transform in polar coordinates using built-in hankel transform of the function constant 1

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239754>

Like in the table of transforms https://en.wikipedia.org/wiki/Fourier_transform#Distributions,_one-dimensional the FT (Fourier transform) of δ is 1 and the FT of 1 is δ , but in polar ...

asked by user740332 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76926> 1 vote

Exponent combinations

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239664>

How can I have Mathematica represent the product of two different bases and exponents as a single power (where possible)? For example, see the product below can be expressed below:

asked by Steve237 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69429> 1 vote

Plot derivative of a real function consisting of a complex function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239796>

I obtained the data for the real and imaginary parts of a complex function $A(x, t) = A_r(x, t) + iA_i(x, t)$ from NDSolve, both are functions of time t and space x

asked by Enter <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19178> 1 vote

1.14 Thursday, February 4, 2021

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1.14.1 Top new questions this week

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How to refine a boundary mesh with MeshRefinementFunction?w	94
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Trying to Rotate the North Pole View of a Globe	95
problem with DelaunayMesh 3D coordinates	95

Confirm vs Throw

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239250>

Version 12.2 brought us Confirm and Enclose. What's the point? Is it just that it's a slightly more convenient syntax than ...

asked by Patrick Stevens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=30771> 13 votes

How to use wolframscript to develop flexible command-line tools?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239072>

I am currently changing a notebook into a wolframscript for a "production" environment, where I plan to pack the script as a standard CLI tool. However I do not know how to implement such an ...

asked by Gravifer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72025> 10 votes

Automatic Method for FindMinimum with constraints

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238999>

What is the default method used by FindMinimum with constraints? The documentation says:

"Currently, the only method available for constrained optimization is ...

asked by VarunM <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69094> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

How to refine a boundary mesh with MeshRefinementFunction?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239220>

MeshRefinementFunction works well to refine elements in a defined spatial domain (here $x > 0$):

asked by Oscillon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13605> 8 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 8 votes

Ugly streaks caused by Arg in a contour plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239255>

I had a more general question about a similar problem more than two years ago, Getting rid of discontinuities in plots caused by square roots, logarithms, 'Arg', etc, which got lots of interesting ...

asked by <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35000> 8 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 11 votes

Trying to Rotate the North Pole View of a Globe

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239294>

My goal is to generate diagrams like this.

But I would like to be able to rotate the globe about the North Pole, so that I can represent different times of the day. When I use ImageRotate, the ...

asked by David Elm <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44449> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 11 votes

problem with DelaunayMesh 3D coordinates

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239303>

I found DelaunayMesh works fine for 2D. For example,

asked by matheorem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4742> 7 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 7 votes

1.14.2 Greatest hits from previous weeks

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Assign the results from a Solve to variable(s)	96
Why round to even integers?	97
Using Export[] sends the file where?	97
Formatting legend text font	97
What do the X and Y axis stand for in the Fourier transform domain?	98

Conversion of Sine to Cosine

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=67521>

I'm solving equations with many Cosines and Sines. And I want to convert all the Sines to Cosines using trigonometric formulas such as $\cos(x)=\sin(x+\pi/2)$. How can I do this?

asked by YongCheol Kwon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23041> 4 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 2 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 34 votes

answered by nix eagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 53 votes

Assign the results from a Solve to variable(s)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=6669>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

asked by stevenvh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1450> 56 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 34 votes

Why round to even integers?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2116>

According to the Mathematica help: Round rounds numbers of the form $x.5$ toward the nearest even integer. For example:

```
Round[{0.5, 1.5, 2.5, 3.5, 4.5}]
```

gives

asked by wxffles <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=427> 83 votes

answered by Per Alexandersson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=488> 51 votes

Using `Export[]` sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the `Export` command to convert a list of plots into a `*.gif` file, and the command runs and executes well, but I can't find the file! Where is it ...

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 51 votes

Formatting legend text font

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3433>

I am using this code to plot a graph, and I am trying to make the font of the legend bigger.

asked by Julia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=525> 20 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 25 votes

What do the X and Y axis stand for in the Fourier transform domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=85139>

In Wolfram Mathematica the function Fourier has the following declaration

```
Fourier[list]
```

And after a list is given to the ...

asked by user253956 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29958> 27 votes

answered by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 61 votes

1.14.3 Can you answer these questions?

RegionPlot of the Maximum of a function	98
How to let Mathematica evaluate a large amount of data	98
Directed Infinity vs Indeterminant in this output	99

RegionPlot of the Maximum of a function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239047>

For the function $\text{fun}[a_, b_, x_, y_] = \text{Sin}[a x] \text{Cos}[b y] (a x + b y)$; corresponding to x and y , I need a RegionPlot showing the maximum of function $\text{fun}[a, b, x]$

asked by Mike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76947> 1 vote

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 0 votes

How to let Mathematica evaluate a large amount of data

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239107>

I have the following code in mathematica which runs perfectly for a small matrix of 21 x 12 matrix. But I really want to test it for a large system. My data is 35844 x 21000 elements, totaling 1.5 GB. ...

asked by shixx597_Min <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59772> 1 vote

Directed Infinity vs Indeterminant in this output

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=239335>

When I evaluate

asked by user824530 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75136> 1 vote

1.15 Thursday, January 28, 2021

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1.15.1 Top new questions this week

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What's the difference between these 2 associations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238880>

I have 2 associations similar to these simplified ones:

asked by Coolwater <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9754> 16 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 16 votes

How can I handle graphics or artworks with millions of points?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238735>

As a hobby, I am trying to use Mathematica and Wolfram Language as a tool for making generative artworks. Generative art techniques may require drawing millions of points, lines, or curves. For ...

asked by mikabozu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74721> 15 votes

answered by George Varnavides <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41179> 21 votes

ContourPlot3D, grid of cylinders

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238849>

I am trying to make a 3D contour plot that looks like a grid of cylinders to represent the Fermi surface of a metal, like below:

I have no problem generating something that kind of looks like it.

asked by Nick <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76998> 10 votes

answered by cvgmt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72111> 13 votes

Distorting image to ensure consistent vanishing point

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238742>

Here's Giorgio de Chirico's painting, Ariadne:

The Surrealist artist deliberately broke the rules of geometric perspective, giving the work his characteristic sense of mystery and unease. What would ...

asked by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 10 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 2 votes

Export infinite looping GIFs by default

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238591>

```
frames=Table[Plot[Sin[x(1+a x)],{x,0,6}],{a,0,2,0.2}];  
Export["test.gif",frames]
```

The above code runs in version 9.0 to get a infinite looping GIF ...

asked by expression <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7339> 10 votes

answered by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 7 votes

Replace a color in image with hatchfilling

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238687>

Is it possible to identify a color (say grey in a 3 color Black, Gray and White image) and ...

asked by skyfire <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70181> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

MeshRefinementFunction on 2D surfaces embedded in 3D

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238705>

DiscretizeRegion doesn't seem to run the supplied MeshRefinementFunction when meshing a 2D surface in 3D. For example:

asked by alessandro <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42454> 7 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 3 votes

1.15.2 Greatest hits from previous weeks

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How do I identify the source of a "Tag times protected" error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11982>

I have some code that looks like

```
Table[
  a = 1;
  b = {2, 3}
  c = i;,
  {i, 2}
]
```

which gives an error:

```
Set::write: Tag Times in c {2,3} is Protected....
```

asked by dearN <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=204> 29 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 35 votes

Labeling individual curves in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4444>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience,...

asked by Tianxiang Xiong <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1041> 63 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 47 votes

How to add a vertical line to a plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3561>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 61 votes

answered by Ajasja <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=745> 82 votes

Drawing a square root spiral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66969>

Here is a start. I'm looking for a nice way to draw it.

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 24 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 21 votes

Multivariable Taylor expansion does not work as expected

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=15023>

The basic multivariable Taylor expansion formula around a point is as follows:

asked by matheorem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4742> 63 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 71 votes

Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=57763>

When I solve the aforementioned equation for W or A on Mathematica I get a long and ugly equation in return, namely one of the solutions for W is: (attempt to read at your own health)

asked by J.D'Almbert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19257> 8 votes

answered by Alexei Boulbitch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788> 15 votes

Mathematica command that allows it to read my intentions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=194384>

In version 2.0 of Mathematica there was a command, `ReadProgrammerIntentions[]` which allowed it rapidly compose code that could solve problems simple to complex, ...

asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 52 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 38 votes

1.15.3 Can you answer these questions?

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How to improve this code?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238887>

The aim of my work is to find a value for the complex constant ω . In order to do that I solve the below system of differential equations with a manual shooting method: I first solve the system ...

asked by mattiav27 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8822> 3 votes

Error on DSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238596>

I've been trying to solve this initial value problem using DSolve []:

$$\frac{dy}{dt} = 1 + t \sin(ty), \quad y(0) = 0, \quad t = [0, 2]$$

asked by Walser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60465> 1 vote

answered by Mariusz Iwaniuk <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26828> 0 votes

Remove defect of display in ListDensityPlot3D

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238719>

I have a 3D volumetric data (for example, 64 × 64 × 64, at each point there is a value) read in from a file and I want to use ListDensityPlot3D to ...

asked by Dennis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69969> 1 vote

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1.16.1 Top new questions this week

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How can I use Mathematica to solve a complex truth-teller/liar logic problem?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238461>

I have a logic puzzle I want to convert to Mathematica to solve: Person A states, "Exactly two people are truth-tellers," Person B states, "I and Person C are truth-tellers."

asked by Peter Burbery <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76873> 16 votes

answered by SneezeFor16Min <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69875> 19 votes

list-array construction

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238293>

I want to create the list $ix=\{1,1,1,1,2,2,2,2,3,3,3,3,4,4,4,4\}$ I can do

asked by geom <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68502> 11 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 20 votes

why do these two Meijer G functions not cancel each other?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238321>

I encountered such expressions in Mathematica $\text{MeijerG}[\{\{ \}, \{1, c + 1/2\}\}, \{\{0, c, c, c\}, \{ \}$

which in ...

asked by Jing <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76801> 8 votes

answered by Chromo Runge <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68326> 12 votes

How to partition a square into successive halves

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238440>

I am teaching the idea of infinite geometric series to high school students, looking for hints to create the diagram below using Mathematica. (I don't need the labels). I can do it manually, but ...

asked by Tom De Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=721> 7 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 9 votes

Ignoring fractions can lead to correct answer

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238501>

There is a curious example in Posamentier's book "Magnificent Mistakes in Mathematics" (p. 72): $(7 + 3/7) * (4 - 3/13) = 7 * 4 = 28$, where cancelling the fractions leads to correct result. If we ...

asked by Darko G <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60625> 7 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 9 votes

Context Manipulation within Scoping Constructs

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238335>

In the following the full context form of Test is not required as "Aaa'" is added to ...

asked by Ronald Monson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2249> 6 votes

answered by Ronald Monson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2249> 2 votes

Why does NMinimize not follow MaxIterations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238268>

...

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 6 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 4 votes

1.16.2 Greatest hits from previous weeks

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Is it possible to export the equations from Mathematica to MATLAB?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=14035>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

asked by Seyhmus Güngören <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4256> 43 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 48 votes

How to ask Mathematica to imitate Andy Warhol's pop-art painting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=59132>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

asked by Putterboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16069> 52 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 67 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using

```
Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]
```

but I'm getting ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 18 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 30 votes

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

Even Fibonacci numbers

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=37266>

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

asked by xyz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9627> 34 votes

answered by rcollyer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=52> 46 votes

Find eigen energies of time-independent Schrödinger equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32293>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrödinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = E_i \psi$$

where $U(x)$ is some potential and E_i is the ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 49 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 46 votes

Standard deck of 52 playing cards in curated data?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16108>

I am not sure how to find out what all is included as curated data. For example, are the individual images of each of the 52 cards in a standard deck of playing cards included?

If not, is there a way ...

asked by JohnD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1629> 25 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 23 votes

1.16.3 Can you answer these questions?

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ListDensityPlot3D with x-axis in logscale

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238481>

Starting from a data set like the one used in this post: Importing and visualizing 4D data DATA It can be viewed using ListDensityPlot3D, as follows:

asked by Ivan Y. Forero <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76882> 1 vote

Trying to solve a PDE getting warnings I don't understand

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238231>

Consider the partial differential equation

asked by beginners <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76785> 2 votes

How can we improve transonic flow visualization?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238500>

With this code we can make 2D FEM simulation of transonic flow around airfoil NACA 0012 at Mach number of 0.925. It takes about 5 minutes on the XENIA-15 laptop of 32 GB memory with processor Intel ...

asked by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 4 votes

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1.17.1 Top new questions this week

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Faster "Closest Pair of Points Problem" implementation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237884>

The closest pair of points problem is a common computational geometry problem: given n points, find a pair of points with the smallest distance between them. A naive algorithm of finding distances ...

asked by Aaron T. Becker <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76690> 17 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 11 votes

Broken ValueQ function in Mma12.2?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237871>

```
f[x] ^= 1;
ValueQ[g[x]]
```

returns True in Mathematica 12.2. Is it a bug?

asked by Roma Lee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57495> 15 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 17 votes

Graphics not correctly produced when saving to PDF in Version 12

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237994>

12.0.0 for Microsoft Windows (64-bit) (April 6, 2019) How do I get my graphic to look the same in PDF as it does in a Notebook? This is what the graphic looks like in the FrontEnd:

This is how the ...

asked by Steven Thomas Hatton <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44139> 10 votes

answered by MelaGo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63360> 13 votes

MoleculePlot draws sucrose benzoate with overlapping bonds

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237903>

Recently I learned that in Mathematica it is possible to create chemical structures here: Chemical formulas with Mathematica I am having a problem with a structure called "Sucrose benzoate"

asked by John <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72940> 9 votes

answered by Jason B. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9490> 9 votes

How to globally disable and re-enable Echo?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238163>

I have Echo's buried in code all over my notebook, I'd like a flag to turn them all on or off globally.

Sure `Unprotect[Echo]; Echo=Identity` would disable them, but ...

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 6 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 9 votes

Compile - Optimization of function calls - does it matter?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238018>

I was surprised to see that, in the results of CompilePrint for a function made with Compile, calls to ...

asked by Sean <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76328> 6 votes

answered by Sean <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76328> 2 votes

neighbouring pixels : next smaller and bigger perimeter

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237914>

I have a list of pixels centers, for example :

asked by yfs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71775> 6 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 7 votes

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How to make Jacobian automatically in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=5790>

If we have two vectors, a and b , how can I make Jacobian matrix automatically in Mathematica?

```


$$a = \left( \begin{array}{c} x_1^3 + 2x_2^2 \\ 3x_1^4 + 7x_2 \end{array} \right); b = \left( \begin{array}{c} \dots \end{array} \right)$$


```

asked by George Mills <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1012> 39 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 52 votes

Plotting Complex Quantity Functions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3458>

Trying to plot with complex quantities seems not to work properly in what I want to accomplish. I would like to know if there is a general rule/way of plotting when you have complex counterparts in ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 42 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 29 votes

QR Code in shopping cart handle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26268>

This week, the market people from my work wanted to put QR codes in shopping cart handles, but when they tested it, the QR code did not work. I noted that the cylindrical curvature (even small) ...

asked by Murta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2266> 196 votes

answered by halirutan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=187> 192 votes

How do I plot a plane EM wave?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=1987>

I would like to display an electromagnetic (EM) wave. I have written code that works, but it does not "shade" the area between the graph and the axes. Both the ...

asked by Rainforest Frog <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=202> 22 votes

answered by J. M.'s ennui <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 16 votes

Standard deck of 52 playing cards in curated data?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16108>

I am not sure how to find out what all is included as curated data. For example, are the individual images of each of the 52 cards in a standard deck of playing cards included?

If not, is there a way ...

asked by JohnD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1629> 25 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 23 votes

Why I get the "Set::write: "Tag Times in is Protected." error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11868>

Why I get the error below with this code:

asked by Aurelius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1669> 10 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 13 votes

Mathematica vs. Python - how does Mathematica compare to Python's scientific computing suite?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=86058>

Python's family of packages for scientific computing has matured rapidly. I can pretty much replicate all of Mathematica's functionalities, but with production level and open-source code using the ...

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 49 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 36 votes

1.17.3 Can you answer these questions?

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NDSolve - interpolation or machine precision problem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237920>

For the following equations;

asked by confused <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74890> 1 vote

Matrix regularization, how to pick λ

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237834>

Since v12 FindFit[] now supports regularisation, such as Tikhonov regularization. Do there exist statistics to help guide the choice of the hyper-parameter

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 2 votes

Memory consuming Expand

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=238106>

Expand floods all my 64GB RAM in MMA 12.1 (Windows). Therefore I cannot run the code. Somebody with >64GB RAM could give the result. A memory saving alternative ...

asked by granular bastard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69288> 1 vote

1.18 Thursday, January 7, 2021

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1.18.1 Top new questions this week

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Why do the frame ticks disappear when a plot is exported as PNG?	121

Why MMA refuses to simplify the following simple expression?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237547>

I have the following simple expression $\text{Exp}[(\text{Log}[1 + x]^2 - \text{Log}[x]^2)/\text{Log}[1 + 1/x]] - x^2$ that can be shown to simplify to x

asked by user16320 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16320> 13 votes

answered by yarchik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9469> 5 votes

Simplifying code that displays a square rolling inside a circle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237692>

The vertex A,B of the square ABCD with side length $\sqrt{2}$ is on the circle with radius $\sqrt{2}$, vertex C,D is inside the circle, roll the square ABCD along the inside of the circle ...

asked by expression <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7339> 10 votes

answered by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 0 votes

Trying to build a code to translate handwritten formulas using ML

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237533>

I'm lazy writing equations in Latex so I want a code to translate handwritten equations. This question is related to an old experiment I'm reviewing during vacations, here. I'm trying to use ...

asked by Gluoncito <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8696> 10 votes

How to define a function reminding of names of the independent variables?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237458>

I am using a function with a lot of variables. There are 9 and sometimes more of them. In this case, it is difficult to memorize, which one stays on the, say, fourth position, and which one - on the ...

asked by Alexei Boulbitch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788> 8 votes

answered by CA Trevillian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63039> 2 votes

Improve running speed for DeleteDuplicates

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237681>

How to make this faster? I want to remove elements that satisfy the condition below but it's way too slow.

asked by anhnha <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18805> 8 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 10 votes

Why does Mathematica try to take the first element of the empty list when plotting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237785>

I'm using Mathematica 12.1.1.0. When I enter

asked by Jason Gross <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12258> 7 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 3 votes

Why do the frame ticks disappear when a plot is exported as PNG?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237678>

I am using M12.0.0.0 on Ubuntu and I have these two plots:

asked by valar morghulis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26937> 6 votes

answered by Rolf Mertig <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29> 5 votes

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What do the X and Y axis stand for in the Fourier transform domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=85139>

In Wolfram Mathematica the function Fourier has the following declaration

`Fourier[list]`

And after a list is given to the ...

asked by user253956 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29958> 27 votes

answered by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 61 votes

How can I plot the direction field for a differential equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8841>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

asked by Matt Groff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1735> 31 votes

answered by Peter Breitfeld <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=307> 25 votes

Is Mathematica worth it for me?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=100072>

I'm 13 years old and in 7th grade. I'm currently in Algebra 1, and I have fallen in love with both math and programming.

When I came upon Mathematica, it was awesome. My two favorite things fused ...

asked by Nico A <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35769> 81 votes

answered by Pillsy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=531> 55 votes

How to ask Mathematica to imitate Andy Warhol's pop-art painting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=59132>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

asked by Putterboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16069> 52 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 67 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

Conversion of Sine to Cosine

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=67521>

I'm solving equations with many Cosines and Sines. And I want to convert all the Sines to Cosines using trigonometric formulas such as $\cos(x)=\sin(x+\pi/2)$. How can I do this?

asked by YongCheol Kwon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23041> 4 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 2 votes

Finding unit tangent, normal, and binormal vectors for a given $r(t)$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18598>

For my Calc III class, I need to find $T(t)$, $N(t)$, and $B(t)$ for $t = 1, 2$, and -1 , given $r(t) = \{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...

asked by a98 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5605> 30 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 44 votes

1.18.3 Can you answer these questions?

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Numerically obtaining inverse 2D Laplace transform

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237480>

I wonder if there is a function in Mathematica (or code) that can help obtaining inverse 2D Laplace transform of a function, $f(s_1, s_2)$ which is the 2D Laplace transform of a function $F(t_1, t_2)$ in (s_1, s_2) ...

asked by Refaat Galal <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76583> 1 vote

How to determine population from a list of arbitrary jurisdictions (cities, states, counties, et al.)?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237541>

I am an aspiring data scientist who's working on a passion project, namely to assign danger-level scores to police departments in the United States. One specific metric I'm developing results from ...

asked by useleslemma <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72297> 3 votes

answered by George Varnavides <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41179> 0 votes

Computing correspondences between two images

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237484>

A classic problem in computer vision is computing correspondences between keypoints in two similar images, despite modest variations in size, lightness, orientation, etc., of the images, as ...

asked by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 6 votes

CHAPTER 2

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2.1 Thursday, December 24, 2020

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2.1.1 Top new questions this week

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**These PDE's no longer evaluate in version 12.2 as they did under 12.1.
What can be done to make them evaluate under 12.2?**

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236895>

These 399 PDE's no longer produce result under Version 12.2 on windows. DSolve now returns unevaluated. These all evaluated under version 12.1. Why is that? And ...

asked by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 17 votes

answered by Devendra Kapadia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18617> 12 votes

Travelling around Jupiter

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236843>

Since we have soon historical conjunction of Jupiter and Saturn I have prepared code with visualization planet Jupiter and Saturn with moons. This code first been prepared for version 11.3 and with ...

asked by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 16 votes

Numerically evaluating parameter derivatives of a hypergeometric function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237032>

I am unable to obtain the numerical value of the derivative of the hypergeometric function. Please note that the $(2,4,0,0)$ is the derivative with respect to the first and second argument

asked by Sachin Kaushik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58727> 7 votes

answered by Mariusz Iwaniuk <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26828> 7 votes

Numeric Solution Hydrogen Atom

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236980>

I'm trying to solve the Schrödinger equation for the hydrogen atom without made the variable separation of the polar and radial coordinate. It is my test code to extrapolate to another system with its ...

asked by Jorge Castaño <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73029> 7 votes

answered by Jorge Castaño <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73029> 0 votes

Sum cause a Recursion problem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236934>

`Sum[((-1)^(i + 1)*Binomial[n, i]*(n - i!)/n!, {i, 1, n}]`

This cause a Recursion problem.

As the comment said, If simplify the formula and then sum it, problem ...

asked by wuyudi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68689> 6 votes

Is it possible to ask Mathematica to give the maximum value of a function over a specific domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236971>

I have a function $f(n)$ over $n \in \mathbb{N}$. I want to know its maximum value over a very large domain, say $n = 1, 2, 3, 4, \dots, 10^6$. Is there a way to ask Mathematica to give me the maximum value of ...

asked by charmin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74550> 6 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 9 votes

Unrolling a surface

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237045>

The surface is determined by this parametric equation `ParametricPlot3D[{Cos[], Sin[], z(2 + Cos[])}, {z, 0, 1}]`

How to unfold the surface in Mathematica? ...

asked by expression <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7339> 5 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 3 votes

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Conversion of Sine to Cosine

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=67521>

I'm solving equations with many Cosines and Sines. And I want to convert all the Sines to Cosines using trigonometric formulas such as $\cos(x)=\sin(x+\pi/2)$. How can I do this?

asked by YongCheol Kwon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23041> 3 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 1 vote

How to ask Mathematica to imitate Andy Warhol's pop-art painting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=59132>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

asked by Putterboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16069> 51 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 66 votes

Plot, extract data to a file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19859>

I need to save data that Mathematica uses inside the Plot command. The format that I would like to have is:

```
x1 y1  
x2 y2  
.....
```

asked by molkee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5097> 30 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 46 votes

My Girlfriend is going to prison...Save her with Math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=135937>

Salacious title, but true story.

asked by Prisoners Dilema <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46025> 42 votes

answered by bobthechemist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7167> 23 votes

How to create animated snowfall?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16881>

Well, the title is self-explanatory. What sorts of snowfall can we generate using Mathematica? There are two options I suggest to consider:

1) Continuous GIF animations with smallest possible number ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 40 votes answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 54 votes

Parallel and perpendicular symbol from Mathematica to L^AT_EX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to L^AT_EX:

$$\begin{bmatrix} E_{\parallel} \\ E_{\perp} \end{bmatrix}$$

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 19 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 27 votes

1 Plot, 2 Scale/Axis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=627>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 148 votes

answered by ArgentoSapiens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=92> 151 votes

2.1.3 Can you answer these questions?

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How to determine if a number is an integer power?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236779>

How can I do simple tests like determining if an integer is a power of 2? Mathematically, the result below should be True, and I understand why it doesn't work on MMA, but how do I do this test ...

asked by Jerry Guern <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=20042> 1 vote

dot product of vectors with noncommutative elements

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=237042>

I came upon an interesting problem. Suppose you have three vectors $\psi = (a, b)$, $\phi = (c, d)$ such that their components do not commute: $ac \neq ca$, $bd \neq db$ etc. (in general the vectors may ...

asked by geom <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68502> 1 vote

How to Inherit Arrowheads size?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236932>

I'm trying to write a Module that produces some arrows with custom Arrowhead shapes. However, I want the code external to the

asked by Wynne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36616> 1 vote

2.2 Thursday, December 17, 2020

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2.2.1 Top new questions this week

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Is there a Mathematica CUDA ode solver?	134
How to properly use the function ThermodynamicData	134
How do I reorder and combine sublists based on sublist rankings given by another list?	135
How to convert cuboid to mesh efficiently	135

Plotting the Star of Bethlehem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236499>

Christmas is around the corner! In preparation, consider the polynomial $f[x_,y_] := 1/10 (4 - x^2 - 2y^2)$ and define $r = (f_x, f_y)$ using the ...

asked by fwgb <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44151> 19 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 15 votes

Opacity gradient in custom legend

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236442>

I need to produce the legend of a plot which encodes a color gradient together with a color gradient. In particular, I would like the image bellow to have the blueish edge faded and the redish solid:

asked by Marcelo Broinizi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53497> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

Circle Packing in Cone Texture

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236449>

This is a cone with texture generated by PatternFilling in plane. The problem this texture mapping is not conformal. So my question is how to generated a pattern image which could suit a fixed height ...

asked by HyperGroups <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6648> 5 votes

answered by cvgmt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72111> 3 votes

Is there a Mathematica CUDA ode solver?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236625>

I have a system of ODEs which I'd like to solve with many (thousands) different initial conditions. In the net there are articles that CUDA can speed up such computations, but I haven't found ...

asked by Andrew <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=306> 5 votes

How to properly use the function ThermodynamicData

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236558>

I've been trying to use the function ThermodynamicData, and it is going fine when I try to calculate properties such as Enthalpy or Entropy or even phase as a ...

asked by Igor Stravinsky <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35043> 5 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 2 votes

How do I reorder and combine sublists based on sublist rankings given by another list?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236526>

I have two lists:

asked by Gregorio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75996> 5 votes

answered by wuyudi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68689> 2 votes

How to convert cuboid to mesh efficiently

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236306>

```
cuboids =
Table[Cuboid @@ (pts = RandomReal[100, {2, 3}]), {i, 10000}];
```

Method1:

asked by HyperGroups <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6648> 5 votes

answered by chyanog <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2090> 6 votes

2.2.2 Greatest hits from previous weeks

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How to make the digits of go around in a spiral like this?	137
How to make a Spherical Cow?	137
How can I plot a graph of an integral?	137
How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc	138

Mathematica code for Bifurcation Diagram

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=13277>

At the moment I am trying to construct a bifurcation diagram of the iterative function $f(x) = ax - 1.1975x^3$. I've scoured the internet for pre-made bifurcation diagrams and found many (mostly of the ...

asked by Mel <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3249> 27 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 47 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 473 votes answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 285 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 17 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 33 votes

How to make the digits of π go around in a spiral like this?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=109982>

Here is a start.

```
MapIndexed[Text[Reverse[First[RealDigits[Pi, 10, 252]]][[Tr@#2]], #]&,
  Table[{t Cos[t], t Sin[t]}, {t, 0, 16Pi, 0.2}]]//Graphics
```

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 57 votes

answered by Martin Ender <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2305> 73 votes

How to make a Spherical Cow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=125043>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

asked by Sumit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8070> 69 votes

answered by andre314 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5467> 76 votes

How can I plot a graph of an integral?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=78451>

I want to plot the following function:

$$\int \left(\frac{\Gamma(x+1)}{2} - \frac{\Gamma(x-1)}{2} \right) dx$$

asked by Anixx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=651> 4 votes

answered by k_v <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24727> 9 votes

How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66273> I'm trying to expedite some quantum mechanical calculations (expectation values etc.) by running them through Mathematica. When I say, for example,

asked by Matthew Brunetti <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22304> 39 votes

answered by SquareOne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19960> 24 votes

2.2.3 Can you answer these questions?

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Importing equations generated in subpackage to be solved in another subpackage	139

Interpolation for different Parameters

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236606>

I am rather new to Mathematica and I tried to find a solution for my Problem on my own, also looking through this site and the suggested Similar Questions, but I at least could not make out that my ...

asked by n00bBoil <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76302> 1 vote

Problem in iterative equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236532>

I am solving the following iterative equation to calculate Tf and Cp as a function of temperature:

An initial attempt for a ...

asked by John <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72940> 2 votes

Importing equations generated in subpackage to be solved in another subpackage

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236345>

I have a package which contains two subpackages: one ("MOTSimulator'MOTGenerator") which generates a systems of differential equations of the form

asked by crich <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76216> 1 vote

2.3 Thursday, December 10, 2020

2.3.1 Top new questions this week 139
 2.3.2 Greatest hits from previous weeks 142

2.3.1 Top new questions this week

Find the equidistance curve between two curves 139
 Confused by results of FunctionDomain 140
 Cannot reproduce well-known summation result 140
 Is there a way to get tooltip for parts of a string? 140
 Nice use case for symbolic tensors? 141
 Drawing hollow disks in 3D with an sphere in center and small
 spheres on the rings 141
 Solve'DirInf[] Meaningful value or just a bug? 141

Find the equidistance curve between two curves

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235971>

I have three function $f(x) = x^x$, $g(x) = \ln(x)^{\ln(x)}$, $h(x) = \ln(x)^2$ and I want to find (numerically) C the center of the circle tangent to the three curves.

I think that one way is to find ...

asked by Domenico Modica <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76121> 14 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 14 votes

Confused by results of FunctionDomain

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236138>

Why does Mathematica give me the function domain of

$$f(x) = (2x - 3)^{\frac{1}{5}} - (2x + 1)^{\frac{1}{5}} - (x - 3)^{\frac{1}{5}}$$

as $x \geq 3$? I used this command:

asked by Ramez Hindi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76160> 7 votes

answered by Roderic <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=76085> 8 votes

Cannot reproduce well-known summation result

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236149>

Bug introduced in 4.2 or 5.0, persisting through 12.2.0.

Note: this is a repost of my OP on math.SE. I am posting it here because multiple users with different Mathematica versions have given me the ...

asked by Klangen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49819> 7 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 3 votes

Is there a way to get tooltip for parts of a string?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235911>

Is there a way to get the tooltip to appear for parts of a string?

asked by user13892 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13892> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Nice use case for symbolic tensors?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236188>

I come from before the times of symbolic tensors in Mathematica, and am used to working with concrete tensors and custom commands to contract them using Transpose, Dot, etc. I recently realized that ...

asked by Stijn <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69486> 6 votes

answered by jose <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10552> 2 votes

Drawing hollow disks in 3D with an sphere in center and small spheres on the rings

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236161>

I was trying to draw the following logo of an atom using Mathematica, but I could only figure out how to draw intersecting ellipses, not a nice logo like below. Do you have any idea? And is ...

asked by Saeid <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35814> 6 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 7 votes

Solve`DirInf[]` Meaningful value or just a bug?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236077>

Bug introduced in 4.1 or earlier and persisting through 12.2.0. or later

To the problem below, I get four independent, incomplete solutions, three in terms of ...

asked by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 6 votes

answered by Akku14 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34287> 0 votes

2.3.2 Greatest hits from previous weeks

Why is raytracing so slow?	142
Generate a Unit Circle Trigonometry	142
Drawing a square root spiral	143
How do I make a 3DPlot using cylindrical coordinates?	143
How to calculate contour integrals with Mathematica?	143
Skip header lines on import	144
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Periodical sum of rows by a certain step	144
Behavior of \$MinPrecision seems to have changed between 12.0.0 and 12.1.1	145
HankelTransform problem	145

Why is raytracing so slow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219629>

I'm trying to get some rays to bounce in a circle. But I want to be able to control the reflections, i.e. the direction the rays bounce in the circle. I have a MWE below, and it is severely limited by ...

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 31 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 42 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Drawing a square root spiral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66969>

Here is a start. I'm looking for a nice way to draw it.

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 24 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 21 votes

How do I make a 3DPlot using cylindrical coordinates?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19076>

I'm trying to plot a function of the form $z(r, \theta)$ where $r \in [0, R]$ for a finite R , $\theta \in [0, 2\pi[$, and z is the third coordinate, a function of the first two. I couldn't find anything ...

asked by Learning is a mess <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5643> 18 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 24 votes

How to calculate contour integrals with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34073>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

asked by user64494 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7152> 42 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 64 votes

Skip header lines on import

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=50718>

When importing a data file what are the comment symbols for Mathematica? That is, given a file like this

```
blabla
bulbul
```

```
1 2 6 54 7 ...
```

what symbol do I have ...

asked by MaxJ <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=14687> 20 votes

answered by george2079 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2079> 18 votes

Using `Export[]` sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the `Export` command to convert a list of plots into a `*.gif` file, and the command runs and executes well, but I can't find the file! Where is it ...

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 51 votes

Can you answer these questions**Periodical sum of rows by a certain step**

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236085>

I've been struggling with one problem. I have a classic matrix in this example 12×4 such as: `matrix = Table[i, {i, 12}, {4}]`

asked by Jakub Petrj <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75456> 2 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 0 votes

Behavior of \$MinPrecision seems to have changed between 12.0.0 and 12.1.1

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235851>

I am running into a very weird bug where setting \$MinPrecision to some value (in this case 200 has a very different and ...

asked by Kvothe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45020> 3 votes

HankelTransform problem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=236119>

Somewhere in the following code there is a bug. The result should not be zero!
FunctionExpand@HankelTransform[Sqrt[r] Cos[r], r, k, 1/2]

I think the answer should ...

asked by SolutionExists <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70331> 1 vote

2.4 Thursday, December 3, 2020

2.4.1 Top new questions this week 145
 2.4.2 Greatest hits from previous weeks 148
 2.4.3 Can you answer these questions? 151

2.4.1 Top new questions this week

Interpolation on an unstructured mesh 146
 Tower of Pisa function 146
 How can I ingest and analyze benchmark results posted at MSE? 146
 Construct a polyhedron from the coordinates of its vertices and
 calculate the area of each face 147
 Make an InterpolatingFunction periodic 147
 How do I place the Clock arrows inside this clock face? 147
 How can I sketch a right-angled triangle? 148

Interpolation on an unstructured mesh

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235681>

This may have a duplicate but I have spent some time looking and can't find it. I have experimental data in the form of $\{ \{x_1, y_1, z_1\}, \{x_2, y_2, z_2\} \dots \}$ I wish to interpolate it so my thoughts turned ...

asked by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 10 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 8 votes

Tower of Pisa function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235495>

I'm trying to construct a 'smooth' function $f : \mathbb{R}^2 \rightarrow [0, 1]$ such that all level sets

$$\{x | f(x) = y\}$$

are circles in a way that f looks like the 'Leaning Tower of Pisa'.

asked by darksun <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75863> 10 votes

answered by fwgb <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44151> 7 votes

How can I ingest and analyze benchmark results posted at MSE?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235390>

How can I ingest Mathematica / WL benchmark results posted at Mathematica Stack Exchange (MSE), like the ones posted here? Assumptions:

There are multiple answers with benchmarks posted

asked by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 10 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 12 votes

Construct a polyhedron from the coordinates of its vertices and calculate the area of each face

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235524>

I have the 3D coordinates for a set of points. I want to construct the convex polyhedron with those points as vertices.

I know I can use functions like `DelaunayMesh`

asked by Dennis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69969> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

Make an `InterpolatingFunction` periodic

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235403>

Interpolation can make an `InterpolatingFunction` periodic with the option ...

asked by Chris K <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6358> 8 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 3 votes

How do I place the Clock arrows inside this clock face?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235711>

I am trying to program a clock, I have the face I want and the hands but I can not seem to put them together so they work.....

asked by Struggling Student <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75041> 7 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 6 votes

How can I sketch a right-angled triangle?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235413>

I would like to replicate this ellipse, but with a right-angled triangle (with smooth/rounded corners). The formula for this ellipse:

asked by nightcape <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75304> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

2.4.2 Greatest hits from previous weeks

Elegant operations on matrix rows and columns	148
Positioning axes labels	149
How to create word clouds?	149
How do I clear all user defined symbols?	149
What does # mean in Mathematica?	150
How to manipulate 2D plots?	150
How to make an inkblot?	150

Elegant operations on matrix rows and columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3069>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

asked by sjdj <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 180 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 61 votes

Positioning axes labels

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=87388>

I need to change the position of my axes labels such that the y-axis label is in the middle and parallel to the y-axis. I'd also like the x-axis label to be in the middle of the x-axis rather than ...

asked by John_dydx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7849> 15 votes

answered by Virgil <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27697> 16 votes

How to create word clouds?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2334>

Word clouds are rather useless fancy and visually appealing plots, where words are plotted with different sizes according to their frequency in a corpus. Many applications exist out there (Wordle, ...

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 145 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 119 votes

How do I clear all user defined symbols?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=850>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

asked by niklasfi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=82> 97 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 95 votes

What does # mean in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19035>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

```
x = Root[#1^8 c^4 - 8 #1^7 c^4 + 28 #1^6 c^4 - 56 #1^5 c^4
```

asked by rononymous <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5730> 38 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 64 votes

How to manipulate 2D plots?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=7142>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 134 votes

answered by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 154 votes

How to make an inkblot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3345>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 86 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 51 votes

2.4.3 Can you answer these questions?

What is the fastest way to get the lowest eigenvalue and corresponding eigenstate in Mathematica?	151
How do I get built-in functions to use custom objects as if they were e.g. List?	151
How to speed up this code (finding eigenvector with smallest eigenvalue)?	151

What is the fastest way to get the lowest eigenvalue and corresponding eigenstate in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235678>

I tried to use the Arnoldi method to get the smallest eigenvalue and corresponding eigenstate for large matrix. However, Arnoldi did not give me the desired result:

asked by lol <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=40838> 2 votes

How do I get built-in functions to use custom objects as if they were e.g. List?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235391>

(This is part 2 of my earlier question, Can I overload Part for specific heads (a la overloaded array subscripting)?, which was well-answered as asked.)

Overview: My goal is to create a custom object -...

asked by Josh Helzer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75893> 3 votes

How to speed up this code (finding eigenvector with smallest eigenvalue)?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=235775>

I have following code. The function TraceSystem is to take partial trace of matrix and I think this part is fine. The main code is below in dd and I think the main problem is in here for Eigenvector. ...

asked by lol <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=40838> 1 vote

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2.5.1 Top new questions this week

3D Inclusion with structured mesh and coarse and arbitrary matrix	152
Smoother jelly / water effect on an image	153
Can Mathematica be used to edit MP3 tags?	153
How can I put the edge of a rectangle inside it rather than outside it?	153
How do I invert my matrix?	154
How to convert a Dataset into an indexed dataset / association- of-associations given a column header?	154
Automatically draw chords from n-1 points on a circle to a fixed point on the circle	154

3D Inclusion with structured mesh and coarse and arbitrary matrix

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234780>

I am wondering if there is a simple way to define a structured 3D mesh (inclusion) like e.g. that and surround it with a coarse and unstructured Matrix. It should be possible to refine both more or ...

asked by Max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68812> 15 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 8 votes

Smoother jelly / water effect on an image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234653>

I'm trying to achieve a jelly / water surface effect. I'd like it to be a bit smoother. Here I am taking a triangulated rectangle and perturbing all points by a little random noise for each frame. ...

asked by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 14 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 15 votes

Can Mathematica be used to edit MP3 tags?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234564>

Can Mathematica edit mp3 tags? I have a set of files and I'd like to batch process artist, album title, etc. I know other tools exist; I wonder if Mathematica can do it.

asked by GregH <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4393> 11 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 15 votes

How can I put the edge of a rectangle inside it rather than outside it?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234866>

Problem: when I draw a rectangle and put a coloured edge around it, the displayed edge is centred along the nominal edge and if it follows the same course as one of the axes then it does not show up. ...

asked by ruffle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59886> 7 votes

answered by Brett Champion <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69> 5 votes

How do I invert my matrix?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234836>

I have the following matrix M :

```
\begin{bmatrix}
P & p & 0 & 0 \\
pe_1 & Pe_1 & \sqrt{P^2 - p^2}q_1 & \sqrt{P^2 - p^2}r_1 \\
pe_2 & Pe_2 & \sqrt{P^2 - p^2}q_2 & \\
\end{bmatrix}
```

asked by Anson Bdo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75764> 7 votes

answered by LouisB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22158> 14 votes

How to convert a Dataset into an indexed dataset / association-of-associations given a column header?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234931>

Given a dataset as such

If "letter" is the header that is chosen, how do I convert it into an indexed dataset / association-of-associations? i.e. How do ...

asked by IntroductionToProbability <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60568> 6 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 6 votes

Automatically draw chords from $n-1$ points on a circle to a fixed point on the circle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234729>

I want to put n equally spaced points on a circle and automatically draw chords from all points to a fixed point preferably $P(0,0)$. I have managed to draw the points and the circle so far with

asked by Guy Foxx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75736> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 5 votes

2.5.2 Greatest hits from previous weeks

How to find the position of elements in a list satisfying criteria .	155
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Mathematica command that allows it to read my intentions . .	157
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How to find the position of elements in a list satisfying criteria

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=180>

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements that are greater than 7.

asked by PeterR <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=140> 67 votes

answered by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 63 votes

Finding Limits in several variables

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=21544>

Is there a way to find a limit of a multivariable function, like

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y)$$

with Mathematica?

When f is continuous, we can use

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y) = \lim_{(x,0)} f(x,y)$$

asked by Dominic Michaelis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5899> 31 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 42 votes

Why round to even integers?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2116>

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

```
Round[{0.5, 1.5, 2.5, 3.5, 4.5}]
```

gives

asked by wxffles <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=427> 82 votes

answered by Per Alexandersson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=488> 50 votes

Why is raytracing so slow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219629>

I'm trying to get some rays to bounce in a circle. But I want to be able to control the reflections, i.e. the direction the rays bounce in the circle. I have a MWE below, and it is severely limited by ...

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 31 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 42 votes

How do I identify the source of a "Tag times protected" error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11982>

I have some code that looks like

```
Table[
  a = 1;
  b = {2, 3}
  c = i;,
  {i, 2}
]
```

which gives an error: `Set::write: Tag Times in c {2,3} is Protected....`

asked by dearN <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=204> 29 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 35 votes

Mathematica command that allows it to read my intentions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=194384>

In version 2.0 of Mathematica there was a command, `ReadProgrammerIntentions[]` which allowed it rapidly compose code that could solve problems simple to complex, ...

asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 52 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 38 votes

How to make a Spherical Cow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=125043>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

asked by Sumit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8070> 69 votes

answered by andre314 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5467> 76 votes

2.5.3 -Can you answer these questions?

Setting pieces of "matrices" - unwanted behavior	158
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Create a Cellular Automata rule in Mathematica	159

Setting pieces of "matrices" - unwanted behavior

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234703>

I am constructing matrices whose elements are lists themselves (of varying length), and am (re)setting the entries of these matrices using among others the "All" command. It seems that in ...

asked by Stijn <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69486> 2 votes

system of coupled nonlinear pdes with FEM (magneto-hydrodynamic mass transfer)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234749>

I'm trying to reproduce the magneto-hydrodynamic flow studied here using the non-linear FEM functionality, and have been having trouble implementing the Neumann boundary conditions. Pardon the long ...

asked by George Varnavides <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41179> 1 vote

Create a Cellular Automata rule in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234577>

I want to create an image in a cellular automata, more specifically an image of an object, like a turtle for example. I found this article online, and i am trying to replicate the results for growing ...

asked by Joana Bugalho <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75694> 2 votes

2.6 Thursday, November 12, 2020

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2.6.1 Top new questions this week

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ReplaceAll, Unexpected output	160
Find All Permutations for Multiset	160
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How to cut a list by max sum

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234240>

```
{5, 10, 3, 8, 9, 8, 8, 4, 1, 7}
```

let `maxsum=20`, then I get ...

asked by wuyudi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68689> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 12 votes

Is it possible to ask Mathematica to stick two plots together to give a continuous plot ? (An example is given)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234373>

I want to plot a function over a large range of x . The problem is that for very large x , even increasing PlotPoint to 5×10^6 and MaxRecursion 15, it does not give the whole result. But I ...

asked by charmin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74550> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 15 votes

ReplaceAll, Unexpected output

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234344>

Each week I import a dataset, and every week the dataset differs in length (the number of records). After the import I need to do some transformations. One of these transformations is the ReplaceAll.

asked by Michiel van Mens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9590> 7 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 9 votes

Find All Permutations for Multiset

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234143>

Take a list with repetitions, say $\{a, a, b, c\}$, and some permutation thereof, say $\{c, a, b, a\}$. I want to know which ...

asked by AccidentalFourierTransform <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34893> 7 votes

answered by ciao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11467> 6 votes

Counting the number of edges between two graph partitions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234462>

Consider the following:

```
g = RandomGraph[WattsStrogatzGraphDistribution[1000, 0.1, 5]]
comm = FindGraphPartition[g, 2];
CommunityGraphPlot[g, comm]
```

asked by Caitlin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74961> 5 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 5 votes

Summing over Partitions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234302>

Imagine I have a list of integers $l = \{l_1, l_2, \dots, l_{50}\}$, say, for example

```
l = RandomInteger[10, 50]
```

and I want to find how many ways there are of summing ...

asked by sam wolfe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=64001> 5 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 6 votes

Incomplete web image scraping

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234154>

Occasionally when I scrape images from a webpage, such as:

```
Import["https://www.freeart.com/gallery/m/mondrian/mondrian.html", "Images"]
only a ...
```

asked by David G. Stork <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9735> 5 votes

answered by Rohit Namjoshi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58370> 4 votes

2.6.2 Greatest hits from previous weeks

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What's the most difficult multidimensional integral that Mathe- matica has solved?	164

Positioning axes labels

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=87388>

I need to change the position of my axes labels such that the y-axis label is in the middle and parallel to the y-axis. I'd also like the x-axis label to be in the middle of the x-axis rather than ...

asked by John_dydx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7849> 15 votes

answered by Virgil <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27697> 16 votes

How to perform a multi-peak fitting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26336>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3). The ...

asked by Everett You <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1389> 55 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 55 votes

How to generate a random snowflake

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39361>

'Tis the season...

And it's about time I posed my first question on Mathematica Stack Exchange. So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

asked by Peltio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6745> 140 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 181 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

Is there an open source implementation of Mathematica-the-language?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4454>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

asked by sbloom <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=178> 122 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 85 votes

How to make a Spherical Cow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=125043>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

asked by Sumit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8070> 69 votes

answered by andre314 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5467> 76 votes

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

2.6.3 Can you answer these questions?

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Does NumberLinePlot give the whole results over a large domain? Or we need to increase its precision?	165

Solving $E[abXab] = Y$ for Gaussian (a, b)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234502>

I have $d/2$ -dimensional variables a, b jointly distributed as Gaussian(μ, Σ) in d dimensions, and need to solve the following equation for X

$$E[ab^T X ab^T] = Y$$

This is equivalent to ...

asked by Yaroslav Bulatov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=217> 1 vote

Problem with RunProcess

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234260>

I'm trying to use the RunProcess function to run docker on Mac OS using Mathematica. But there is a problem:

asked by Wei Li <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75601> 1 vote

Does NumberLinePlot give the whole results over a large domain? Or we need to increase its precision?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234324>

I use this code over the domain $x \in (0, 300)$

asked by charmin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74550> 1 vote

2.7 Thursday, November 5, 2020

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2.7.1 Top new questions this week

Why is there a discrepancy between JoinedCurve/FilledCurve
 and the underlying BSplineCurve segments? 166
 Converting an equation with units to one without units 166
 Generate an e machine graph from transition probability matrices 166
 Deconvolution approaches for 3D data 167
 construct a lattice with a defined unitcell 167
 How to remove Null plot markers in QuantilePlot? 167
 Split in non-overlapping sub-lists with elements within an interval
 from the first member 168

Why is there a discrepancy between JoinedCurve/FilledCurve and the underlying BSplineCurve segments?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233846>

This may be related to [How to discretize a BezierCurve?](#), but this question deals with BSplineCurves with specific SplineWeights, ...

asked by rojohn <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=232> 10 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

Converting an equation with units to one without units

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233804>

I may have a solution but it is not slick! See below [Doing numerical calculations with functions that use units can be very slow](#). I would like to have a function or operator that can turn my functions ...

asked by c186282 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4515> 6 votes

answered by march <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29734> 2 votes

Generate an e machine graph from transition probability matrices

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=234036>

I am trying to generate this type of graphic:

see Fig. 1a from <https://arxiv.org/abs/0905.3587>. This process is associated with two transition matrices

asked by AG1123 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36275> 6 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 7 votes

Deconvolution approaches for 3D data

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233877>

Building neural nets in the WL is great. I was in the process of rewriting a previous GAN of mine in the WL to see if I can get better performance, and was surprised to find that the standard ...

asked by BBirdsell <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49805> 6 votes

construct a lattice with a defined unitcell

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233863>

We can construct a base-centered tetragonal unit cell by: `LatticeData["CenteredTetragonal", "Image`

But how can we construct a lattice by

asked by Inzo Babaria <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=33967> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

How to remove Null plot markers in QuantilePlot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233816>

Bug introduced in 12.0 and persisting in 12.1.1

I want to change the plot markers of the data points in `QuantilePlot`. This seems pretty straightforward:

asked by Q.P. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27119> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 5 votes

Split in non-overlapping sub-lists with elements within an interval from the first member

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233767>

I want to split a large ordered list into consecutive non-overlapping sub-lists, such that all elements are within an interval from the first member of the sub-list . For example:

asked by Oleg <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75470> 6 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 7 votes

2.7.2 Greatest hits from previous weeks

Code that generates a mandala	168
How to create word clouds?	169
How can I draw the Olympic rings with Mathematica?	169
Calling Correct Function for Plotting DiracDelta	169
How to create effect like Van Gogh's stroke brush?	170
Parallel and perpendicular symbol from Mathematica to \LaTeX .	170
Help find a bright object on Mars!	170

Code that generates a mandala

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=136974>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

asked by zeros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26849> 73 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 97 votes

How to create word clouds?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2334>

Word clouds are rather useless fancy and visually appealing plots, where words are plotted with different sizes according to their frequency in a corpus. Many applications exist out there (Wordle, ...

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 145 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 119 votes

How can I draw the Olympic rings with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8885>

How can I draw the 5 interlocking Olympic rings with Mathematica? (SVG version)
Edit

Hard choice, but some pretty cool answers here. I didn't have 3D answers in mind when I posted the question, but ...

asked by Mike Honeychurch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=77> 44 votes

answered by cormullion <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61> 23 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the `DiracDelta[]` function. When using this inside of a ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

How to create effect like Van Gogh's stroke brush?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39003>

I need to apply Van Gogh's stroke brush effect to a random image Take the following image as an example:

Thank you so much if you could help!

asked by user10495 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10495> 34 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 51 votes

Parallel and perpendicular symbol from Mathematica to L^AT_EX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to L^AT_EX:

$$\begin{bmatrix} E_{\parallel} \\ E_{\perp} \end{bmatrix}$$

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 19 votes answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 27 votes

Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 198 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 257 votes

2.7.3 Can you answer these questions?

How can I determine and then plot a confidence bands in QuantilePlot?	171
How to remove the smallest term from asymptotic expansion?	171
Solving the following system of integrodifferential equations: speed up of the code	171

How can I determine and then plot a confidence bands in QuantilePlot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233931>

Does anyone know if its possible to plot a confidence band in QuantilePlot? I haven't been able to find any documentation for this, or a previous example on here.

asked by Q.P. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27119> 3 votes

How to remove the smallest term from asymptotic expansion?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233823>

It is well-known that $e^{-1/x} \sim o(x^n)$ as $x \rightarrow 0^+$ for any $n \in \mathbb{N}$, thus if I do an asymptotic expansion for a function, say $f = 1/(1-x) + e^{-1/x}$ as $x \rightarrow 0^+$, I expect to receive an ...

asked by user142288 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59534> 5 votes

Solving the following system of integrodifferential equations: speed up of the code

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233726>

Consider a system of equations

asked by John Taylor <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41058> 1 vote

2.8 Thursday, October 29, 2020

2.8.1	Top new questions this week	172
2.8.2	Greatest hits from previous weeks	174
2.8.3	Can you answer these questions?	177

2.8.1 Top new questions this week

Dynamically drag graph vertices	172
Display Number with SI prefixes	172
Understanding the profiler: Is pattern matching/de-structuring expensive?	173
How to select the fastest approach for large numerical data computations?	173
Performance of pure function - Best way to define a function? .	173
Font style inconsistency on "number sign" (hashtag) and "at symbol"	173
Solving a Nonlinear Complementary Problem (plasticity)	174

Dynamically drag graph vertices

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233409>

Is it possible to make a dynamic graph with an ability to drag vertices? In other words let vertices behave like Locators and change its ...

asked by swish <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2490> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 13 votes

Display Number with SI prefixes

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233503>

I have a number of $val = 0.000015783$ which represents a current value in Amps. I want to display it with 3 significant digits and with SI prefixes instead of the ...

asked by tobalt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27818> 7 votes

answered by creidhne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41569> 6 votes

Understanding the profiler: Is pattern matching/de-structuring expensive?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233388>

I was profiling some code and I am trying to understand what the results mean. Suppose we have the very idiomatic,

asked by ITA <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42145> 7 votes

How to select the fastest approach for large numerical data computations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233677>

I really love the flexibility of Mathematica: there are several ways to perform one task. However, to get the performance of the intense numeric calculation, it can ...

asked by Nam Nguyen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1712> 6 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 7 votes

Performance of pure function - Best way to define a function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233637>

In general, to define a function, we often use `f[x_]`. Another way is to use pure function (full form and shorthand). I want to test the performance of these ...

asked by Nam Nguyen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1712> 6 votes

Font style inconsistency on "number sign" (hashtag) and "at symbol"

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233665>

Why number sign "#" (known as hashtag symbol on social media) or at sign "@" are not consistent with the ...

asked by azerbaijan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53172> 6 votes

answered by creidhne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41569> 9 votes

Solving a Nonlinear Complementary Problem (plasticity)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233340>

I would like to solve the following: given $t \mapsto \sigma(t)$ and $E > 0$, $\sigma_y > 0$, find ϵ such that:

asked by anderstood <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18767> 5 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 4 votes

2.8.2 Greatest hits from previous weeks

Crack CAPTCHA using deep learning	174
Why I get the "Set::write: "Tag Times in is Protected." error? .	175
What do the X and Y axis stand for in the Fourier transform domain?	175
Where can I find examples of good Mathematica programming practice?	175
How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?	176
How to add a front-end to the free Wolfram Engine?	176
Plotting Complex Quantity Functions	176

Crack CAPTCHA using deep learning

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=143691>

Deep convolutional neural networks are very good at computer vision related tasks. Optical Character Recognition (OCR) is one important branch of computer vision. In fact, the convolution neural ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 87 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 98 votes

Why I get the "Set::write: "Tag Times in is Protected." error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11868>

Why I get the error below with this code:

asked by Aurelius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1669> 10 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 13 votes

What do the X and Y axis stand for in the Fourier transform domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=85139>

In Wolfram Mathematica the function Fourier has the following declaration

```
Fourier[list]
```

And after a list is given to the ...

asked by user253956 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29958> 27 votes

answered by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 61 votes

Where can I find examples of good Mathematica programming practice?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

asked by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 553 votes

answered by faysou <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66> 486 votes

How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8895>

I am seeking a convenient and effective way to calculate such geometric quantities. I've used packages like TensoriaCalc, but they don't work at all time. Sometimes,...

asked by Zoe Rowa <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1713> 40 votes

answered by Yi-Zen Chu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4869> 18 votes

How to add a front-end to the free Wolfram Engine?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=198839>

<https://blog.stephenwolfram.com/2019/05/launching-today-free-wolfram-engine-for-developers/>

<http://www.wolfram.com/engine/>

The Free Wolfram Engine for Developers is available for pre-production ...

asked by Alexey Golyshev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23402> 63 votes

answered by Alexey Golyshev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23402> 53 votes

Plotting Complex Quantity Functions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3458>

Trying to plot with complex quantities seems not to work properly in what I want to accomplish. I would like to know if there is a general rule/way of plotting when you have complex counterparts in ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 42 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 29 votes

2.8.3 Can you answer these questions?

How to define a derivative of a function at some point?	177
Insufficient memory problem in Mathematica	177
Classify; how UtilityFunction matrix is applied to resolve prediction?	177

How to define a derivative of a function at some point?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233672>

Consider a function `derivative[x_]:=D[Sin[x],x]`

When calling it with some argument, like `derivative[2]`, instead of $\cos(x)$ it gives me $\partial_2 \sin(2)$. Is ...

asked by John Taylor <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41058> 1 vote

Insufficient memory problem in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233470>

I am trying to initialize a 48600 x 48600 packed array from a sparse matrix and a diagonal matrix in Mathematica 8. If S1 is a sparsearray of that size then and S2 is list of 48600 length, then I am ...

asked by Roopayan Ghosh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=54433> 4 votes

Classify; how UtilityFunction matrix is applied to resolve prediction?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233669>

I can't find any explanation about the details of the real computation, please anybody knows?

asked by pablo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61453> 1 vote

2.9 Thursday, October 22, 2020

2.9.1	Top new questions this week	178
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2.9.3	Can you answer these questions?	183

2.9.1 Top new questions this week

How can I reproduce this mandala with Mathematica?	178
Tennis Racket theorem	178
Climbing/Descending the Integer Ladder	179
Remove inner brackets	179
Identify the Vertices and Lines around the edges of a free surface - Mesh/DiscreteGraphics	179
How can I extract the edge points from an image?	180
How to speed up integers finding function?	180

How can I reproduce this mandala with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233050>

I found this image on the Internet and it is very beautiful. How can I reproduce it? The ideal would be to be able to control the colors of the outside as well as the center.

asked by Susana <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=37778> 12 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 32 votes

Tennis Racket theorem

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232976>

Torque-free Euler equations experiment seen in low gravity of Russian spacecraft is modelled here with a view to see its tumbling motion around the intermediate axis ω_2 rotation. However its ...

asked by Narasimham <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19067> 10 votes

answered by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 16 votes

Climbing/Descending the Integer Ladder

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233096>

A fun combinatoric puzzle that's popped up in my work that I think would be cute to have a Mathematica solution to, if anyone wants to give it a go. It's basically a ladder climbing/descending problem ...

asked by b3m2a1 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38205> 8 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 5 votes

Remove inner brackets

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233206>

If I have the result

asked by GlomGive <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75305> 7 votes

answered by wuyudi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68689> 10 votes

Identify the Vertices and Lines around the edges of a free surface - Mesh/DiscreteGraphics

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232975>

To write a mesher that closes a mesh surface using an implied surface from a boundary spline curve and mesh generated using DiscreteGraphics, I need to identify the Vertices and Lines around the edges ...

asked by mh2000 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57215> 7 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 8 votes

How can I extract the edge points from an image?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233092>

I want to extract the edge points from a text image and use `ListPlot[points]` to visualize those points:

I tried to used ...

asked by vito <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=30288> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

How to speed up integers finding function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232960>

Playing with integers I looked for a way of finding, let's say, 4-digits positive integers such that $a, b, a + b$ had the same digits, like

$$1089 + 8019 = 9108$$

I am a newbie and I used this function

asked by Raffaele <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49764> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 12 votes

2.9.2 Greatest hits from previous weeks

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Where can I find examples of good Mathematica programming practice?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

asked by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50553> 553 votes

answered by faysou <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66486> 486 votes

Plotting a Phase Portrait

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=14160>

I'm trying to plot a phase portrait for the differential equation

$$x'' - (1 - x^2)x' + x = 0.5 \cos(1.1t).$$

The primes are derivatives with respect to t . I've reduced this second order ODE to ...

asked by covertbob <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=452838> 38 votes

answered by David Slater <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=174633> 33 votes

How can I save both the plot and the legend together?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=35653>

In this example, how can I put the legend inside the graph? Currently, when I save the graph, only the graph is saved, not the legend.

asked by Mika Ike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=654342> 42 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73138> 38 votes

Find eigen energies of time-independent Schrödinger equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32293>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrödinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = E_i \psi$$

where $U(x)$ is some potential and E_i is the ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 48 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 46 votes

xkcd-style Plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11350>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over ...

asked by Amatya <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2039> 616 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 474 votes

How to create a new "person curve"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=17704>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter `WolframAlpha["person curve"]` into a Mathematica ...

asked by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 83 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 45 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using `Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]`

but I'm getting ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 17 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 29 votes

2.9.3 Can you answer these questions?

Equation of Motion: Perturb Scalar Field and flat FLRW Metric

(xAct) 183

Is there any way to change the box-formatting behavior thoroughly? 183

How to get colors at points in Graphics3D? 184

Equation of Motion: Perturb Scalar Field and flat FLRW Metric (xAct)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233105>

Is there a way to get the equations of motion (eom) of a scalar field from a Lagrangian in a perturbed FLRW metric? I want to perturb the field as well as the metric to 1st order. What I did so far:

asked by kalle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68748> 1 vote

Is there any way to change the box-formatting behavior thoroughly?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233100>

Background The box-formmating behavior is affected by the downvalues of the symbol `MakeBoxes`. But the formatting behavior is not exactly ...

asked by asdlds <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72876> 2 votes

How to get colors at points in Graphics3D?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=233287>

To get the color at a 2D point in Graphics you can Rasterize it and look up the pixel value, but not for ...

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 2 votes

2.10 Thursday, October 15, 2020

2.10.1 Top new questions this week 184
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2.10.1 Top new questions this week

How can I plot my financial indicator below a trading chart
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 Has the Undo command really been settled? On version 12.1
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 Solving heat equation on a cylinder with insulated ends and
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 Converting a RawBoxes object to a workable expression 186
 Mean age of people 186
 Suggestion bar still causing Kernel crashes? 186

How can I plot my financial indicator below a trading chart (produced by TradingChart) with the same x-axis?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231660>

Since this question was not answered, I would like to ask again with some additional information. I have a trading chart saved as chart1 as follows.

asked by DLT <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=54107> 9 votes

answered by Lukas Lang <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36508> 6 votes

Adding elements of second list in succession

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231695> Given

```
t1 = {{1, 2}, {3, 4}};  
t2 = {{a, b, c}, {e, f}};
```

I want to add in succession elements of list 2 to list 1 to get:

asked by user57467 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57467> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

Has the Undo command really been settled? On version 12.1 it only works sporadically. What are some reasons it drops steps?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231523>

Although Undo has been around since version 10 (before my time) I've noticed that sometimes it works just fine up to the moment of the last ...

asked by Jules Manson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=37721> 7 votes

Solving heat equation on a cylinder with insulated ends and convective boundary conditions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231588>

I am trying to solve heat equation on a cylinder whose ends are thermally insulated and its circular face is exposed to convection. Therefore I have Neumann boundary condition on all faces of the ...

asked by Deep <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44615> 7 votes

answered by yawnoc <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72028> 5 votes

Converting a RawBoxes object to a workable expression

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232789>

I have managed to turn an image into a RawBoxes expression. How do I turn it back into something I can use in Graphics In ...

asked by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 6 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 9 votes

Mean age of people

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232809>

I have the following data:

I want to find mean age by using following formula,

Any way to do this in general in Mathematica easily.

asked by Jasmine <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73364> 6 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 12 votes

Suggestion bar still causing Kernel crashes?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232784>

On Mathematica 12.1.1, Windows 10. When Suggestions bar is active, entering and evaluating the following crashes the Kernel.

asked by ciao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11467> 6 votes

2.10.2 Greatest hits from previous weeks

- How to express trigonometric equation in terms of of given trigonometric function? 187
- Elegant operations on matrix rows and columns 187
- What do the X and Y axis stand for in the Fourier transform domain? 188
- Figuring when the minute and hour hand coincide on a clock . 188
- Code that generates a mandala 188
- How to generate a random snowflake 189
- Extract real part of a complex expression better than Re does . 189

How to express trigonometric equation in terms of of given trigonometric function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=434>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

asked by Prashant Bhate <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=99> 30 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 37 votes

Elegant operations on matrix rows and columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3069>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 180 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 60 votes

What do the X and Y axis stand for in the Fourier transform domain?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=85139>

In Wolfram Mathematica the function Fourier has the following declaration

```
Fourier[list]
```

And after a list is given to the ...

asked by user253956 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29958> 27 votes

answered by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 61 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

Code that generates a mandala

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=136974>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

examples

asked by zeros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26849> 72 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 95 votes

How to generate a random snowflake

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39361>

'Tis the season...

And it's about time I posed my first question on Mathematica Stack Exchange. So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

asked by Peltio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6745> 140 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 181 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 33 votes

answered by nixeagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 52 votes

2.10.3 Can you answer these questions?

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How to get the coefficients of second-order Runge-Kutta formula coherently?	190
Taking "intermediate" limits, e.g. $\mathcal{X} \rightarrow 0$ but $\mathcal{X}/\epsilon \rightarrow \infty$ as $\epsilon \rightarrow 0$ - *without* taking $\epsilon \rightarrow 0$ directly	190

Passing input from a textfile into a function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231540>

I have a text file which is a list of numbers and would like to pass each number in the list as input to a Mathematica function. For example, my text might contain [2, 1, 4], and I would like to pass ...

asked by Joshua Steier <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75099> 1 vote

How to get the coefficients of second-order Runge-Kutta formula coherently?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=231528>

The form of the second order Runge Kutta formula is as follows(the following is from page 287 of this book):

asked by A little mouse on the pampas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 1 vote

Taking "intermediate" limits, e.g. $\mathcal{X} \rightarrow 0$ but $\mathcal{X}/\epsilon \rightarrow \infty$ as $\epsilon \rightarrow 0$ - *without* taking $\epsilon \rightarrow 0$ directly

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=232859> I have an expression that I would like to take limits of but not in a conventional sense. Take for example, an expression like

This expression involves intermediate variables

asked by epsilonD3LT4 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=75082> 1 vote

2.11 Thursday, October 1, 2020

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2.11.1 Top new questions this week

What is a good way of performing operations on specified columns of a table with many columns	191
Quickest way to test whether array is constant	191
Solving a rotating combination lock puzzle	192
Shortest way to make a checkerboard pattern	192
Smoothing the Region?	192
How to replace only the isolated variable x?	193
Counting Elements in Multiple Lists	193

What is a good way of performing operations on specified columns of a table with many columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230854>

If I have a table of data and I want to do a specific operation on say the third column, I usually do something like this:

asked by Q.P. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27119> 11 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

Quickest way to test whether array is constant

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230971>

At the moment I use `Length[DeleteDuplicates[array]] == 1` to check whether an array is constant, but I'm not sure whether this is optimal. What would be the ...

asked by Gert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27889> 11 votes

answered by Sjoerd Smit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=43522> 9 votes

Solving a rotating combination lock puzzle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230749>

The following puzzle appears in The House of da Vinci II and I thought it might be interesting to tackle in Mathematica:

There are numbers marked on four rotating cylinders. These numbers must add up ...
asked by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 9 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 8 votes

Shortest way to make a checkerboard pattern

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230988>

I'm looking for the shortest (in terms of characters) code snippet to make an n-square checkerboard. Here's my first try (comes in at 72 characters):

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Smoothing the Region?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230725>

There is a 2D Pi

I succeeded transformed it to 3D.

asked by partida <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=15961> 7 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 9 votes

How to replace only the isolated variable x?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230717>

I want to replace the variable x in the result, not x in unrelated x[i]

asked by A little mouse on the pampas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 11 votes

Counting Elements in Multiple Lists

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230864>

How to build a table that counts how many times each element in mainlist occurs in lst1, lst2, lst3, lst4 and which lst1, lst2, lst3, lst4 contains that element. For example, in mainlist, element ...

asked by PRG <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42700> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

2.11.2 Greatest hits from previous weeks

What does # mean in Mathematica?	194
Where can I find examples of good Mathematica programming practice?	194
How do I identify the source of a "Tag times protected" error? .	194
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Extract real part of a complex expression better than Re does .	196
Calculate the 2D Fourier transform of an Image	196

What does # mean in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19035>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

```
x = Root[#1^8 c^4 - 8 #1^7 c^4 + 28 #1^6 c^4 - 56 #1^5 c^4 ...
```

asked by ronanonymous <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5730> 37 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 64 votes

Where can I find examples of good Mathematica programming practice?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

asked by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 550 votes

answered by faysou <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66> 484 votes

How do I identify the source of a "Tag times protected" error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11982>

I have some code that looks like

```
Table[
  a = 1;
  b = {2, 3}
  c = i;,
  {i, 2}
]
```

which gives an error:

```
Set::write: Tag Times in c {2,3} is Protected....
```

asked by dearN <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=204> 28 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 35 votes

How to create a new "person curve"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=17704>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter `WolframAlpha["person curve"]` into a Mathematica ...

asked by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 83 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 45 votes

Mathematica 10.0.x freezes in Initializing kernels

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=92931>

Bug caused by paclet update and fixed by paclet update.

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't ...

asked by mitcheljh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6783> 80 votes

answered by ilian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=145> 101 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 33 votes

answered by nixeagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 52 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 15 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 32 votes

2.11.3 Can you answer these questions?

Simplify Equation with variable unequal to zero	196
finding primes using chebyshev bias	197
Why does NDSolve not give consistent results?	197

Simplify Equation with variable unequal to zero

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230846>

How can I simplify the following equation with Mathematica assuming $z \neq 0$? I have the following code:

asked by Franz Ferdinand <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74882> 1 vote

finding primes using chebyshev bias

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230943>

Using the problem from my previous question link. For each n , that is $n = 10^3$ to 10^6 with a ten-fold increase, how do I use Chebyshev Bias to display the number of primes (which are in the ...

asked by complab56 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74866> 1 vote

Why does NDSolve not give consistent results?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230784>

This is my code:

asked by S.J.E. Huisman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74858> 1 vote

2.12 Thursday, September 24, 2020

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2.12.1 Top new questions this week

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Solving the Lotka-McKendrick model with NDSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230366>

The Lotka-McKendrick model is a demographic model that represents the way a population changes over time due to fertility and mortality. For an age-specific population density $u(a, t)$, and a total ...

asked by Pillsy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=531> 12 votes

answered by Chris K <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6358> 9 votes

Nonlinear dispersal equation modeling insect aggregation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230429>

I'm a newbie with Mathematica, I know it's a basic answer, but I can't solve the problem on my own. I have the following equation reflecting insect aggregation at low population densities (taken from ...

asked by Vefhug <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74729> 10 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 17 votes

Making a faster alternative for PatternSequence

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230622>

I need to improve a pattern or switch an approach. It is best described by an example For a hierarchy/order given by a list e.g.:

```
order = {1, 2, 3}
```

and a list:

asked by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 9 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 9 votes

How can I get material property data past what's provided via ElementData?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230484>

Background Let's say I want information (e.g. bulk modulus or space group) on an element or chemical compound that isn't available via e.g. `ElementData[]`

asked by Sterling <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61736> 6 votes

answered by Sterling <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61736> 6 votes

DSolve does not return solution to simple system of second order PDEs

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230383>

I'm trying to solve a simple system of second order PDEs with Mathematica 11.1. Here is the system:

asked by C. B. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74734> 6 votes

answered by bbgodfrey <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1063> 3 votes

Build the following symmetric array

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230650>

My mind is a bit cloudy and I can't quite pinpoint the pattern here that will allow me to write an elegant piece of code to build the following symmetric matrix of for a given size ...

asked by QuantumDot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2048> 5 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 4 votes

Evaluate section by button click

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230613>

I have a section in my notebook devoted to unit testing, since I'm not comfortable to use the built-in system. I'd like to evaluate the entire section by button click. But I get lost in the notebook ...

asked by infinitezero <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=31036> 5 votes

answered by Kuba <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5478> 5 votes

2.12.2 Greatest hits from previous weeks

Assign the results from a Solve to variable(s)	200
Finding unit tangent, normal, and binormal vectors for a given $r(t)$	201
Multivariable Taylor expansion does not work as expected . . .	201
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What's the most difficult multidimensional integral that Mathematica has solved?	202
Drawing a square root spiral	202
Get a "step-by-step" evaluation in Mathematica	202

Assign the results from a Solve to variable(s)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=6669>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

asked by stevenvh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1450> 56 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 34 votes

Finding unit tangent, normal, and binormal vectors for a given $\mathbf{r}(t)$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18598>

For my Calc III class, I need to find $T(t)$, $N(t)$, and $B(t)$ for $t = 1, 2$, and -1 , given $r(t) = \{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...
asked by a98 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5605> 30 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 43 votes

Multivariable Taylor expansion does not work as expected

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=15023>

The basic multivariable Taylor expansion formula around a point is as follows:

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla)f(\mathbf{r}) + \frac{1}{2!}(\mathbf{a} \cdot \nabla)^2 f(\mathbf{r}) + \dots$$

asked by matheorem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4742> 58 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 65 votes

xkcd-style Plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11350>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over ...

asked by Amatya <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2039> 615 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 474 votes

What's the most difficult multidimensional integral that Mathematica has solved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222184>

I am interested in benchmarking numerical integration methods and am trying to develop a wider set of difficult multivariate examples. For my particular methods, I only want to look at non-negative...

asked by ben18785 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19278> 6 votes

Drawing a square root spiral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66969>

Here is a start. I'm looking for a nice way to draw it.

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 24 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 21 votes

Get a "step-by-step" evaluation in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=148>

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it? If so, how does one do it?

asked by Cydonia7 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44> 125 votes

answered by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 105 votes

2.12.3 Can you answer these questions?

How can I make NDSolve aware of vectorial nature of an ODE?	203
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How can I make NDSolve aware of vectorial nature of an ODE?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230550>

I am trying to solve the equilibrium equation $\text{DIV } \mathbf{P}(\mathbf{u}(x, y)) = \mathbf{f}$, where \mathbf{P} is the stress tensor defined by

$$\mathbf{P} = \mathbf{F} + (1 - \det \mathbf{F})$$

asked by rmk236 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74782> 1 vote

NDSolve Boundary Condition is a Function of the Solution

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230520>

I am trying to solve something like Fick's Law using NDSolve

$$\frac{\partial \varphi}{\partial t} = \frac{\partial^2 \varphi}{\partial r^2} + F(r, t)$$

Subject to a ...

asked by UranylTrioxide <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74775> 1 vote

Optimizing a graph-theoretic piece of code

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230425>

I have written the following piece of code:

asked by Mr. Mister <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74745> 2 votes

2.13 Thursday, September 17, 2020

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2.13.1 Top new questions this week

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Pattern-matching complex numbers as $a + bi$	206

Display hexagon grid to visualize Langton's ant

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230017>

I am looking to recreate the following image from this reference as using Mathematica's Polygon documentation under "Applications" as a starting point. I want to eventually use Mathematica ...

asked by C. Fuhrman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60593> 10 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 8 votes

Position function error

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230018>

I recently upgraded from Mathematica 6 to the most recent version. In my new version the Position function returns strange results that were not present in the old ...

asked by Peter <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74626> 8 votes

answered by ciao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11467> 11 votes

Mathematica 12.1.0.0 exporting low quality images at high ImageResolution

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229973>

I recently upgraded from Mathematica 11 to Mathematica 12.1.0.0 . I understand there were some UI changes to accommodate high resolution monitors. I'm not sure if this issue is related to that. I am ...

asked by user3556814 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74618> 8 votes

answered by Piotr Wendykier <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9239> 1 vote

How can I count the color pixels in each partition of the image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230060>

I have a image of 1000 x 1000 pixels of which I have made 5 x 5 partitions. After that I am looking for a way to count number of color pixels in each partition. Thanks in advance for help.

asked by Atique Khan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59972> 7 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 4 votes

Why does Nearest not return both equally distant values?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230082>

Define the following three vectors:

$a = \{0., 0., 0.\};$

$b = \{-0.5', 0.4330127018922193', 0.25'\};$

$c = \{-0.5', 0.', 0.'\};$

Note that the distance from a to c is the ...

asked by abwatson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1709> 7 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 5 votes

BarChart does not display asymmetric error bars correctly

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230145>

BarChart seems to read the uncertainty in elements the other way around. The object: `Around[5, {1, 10}]` is evaluated as `.` However, when you use it in a BarChart, the uncertainties are swapped:

asked by Luis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24933> 6 votes

Pattern-matching complex numbers as $a + bi$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230013>

I just started working with Mathematica and am toying with pattern matching. There may be something obvious I'm missing in this, but I can't figure it out by myself. I want to write down a function ...

asked by ppln <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69266> 6 votes

answered by eyorable <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=52935> 5 votes

2.13.2 Greatest hits from previous weeks

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Find eigen energies of time-independent Schrödinger equation .	208
How to find the position of elements in a list satisfying criteria .	209

Plot, extract data to a file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19859>

I need to save data that Mathematica uses inside the Plot command. The format that I would like to have is:

```
x1 y1  
x2 y2  
.....
```

asked by molkee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5097> 30 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 47 votes

How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8895>

I am seeking a convenient and effective way to calculate such geometric quantities. I've used packages like TensoriaCalc, but they don't work at all time. Sometimes,...

asked by Zoe Rowa <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1713> 38 votes

answered by Yi-Zen Chu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4869> 18 votes

How can I improve Mathematica's resolution on a macbook retina display?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18419>

Mathematica 9.0 looks a bit fuzzy on the retina screen, how can I increase the resolution? Here another screenshot showing a direct comparison between the browser and Mathematica

asked by Tom Wellington <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2437> 44 votes

Code that generates a mandala

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=136974>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

examples

asked by zeros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26849> 71 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 95 votes

How to create effect like Van Gogh's stroke brush?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39003>

I need to apply Van Gogh's stroke brush effect to a random image Take the following image as an example:

Thank you so much if you could help!

asked by user10495 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10495> 34 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 51 votes

Find eigen energies of time-independent Schrödinger equation

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32293>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrödinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = E_i \psi$$

where $U(x)$ is some potential and E_i is the ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 48 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 46 votes

How to find the position of elements in a list satisfying criteria

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=180>

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements that are greater than 7.

asked by PeterR <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=140> 66 votes

answered by J. M.'s discontentment <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 63 votes

2.13.3 Can you answer these questions?

Faster alternative to ImageCorrespondingPoints?	209
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Faster alternative to ImageCorrespondingPoints?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229962>

I'm trying to use ImageCorrespondingPoints to register frames in a video sequence. Computational speed is an important consideration for the application I am ...

asked by Brady Hunt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9017> 2 votes

How to make this expression?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=230052>

How to code this expression in WolframAlpha. I am interested in how to code the second sum, because it contains a boolean expression:

$$\sum_{i=1}^{100} \sum_{j>n} x_i x_j$$

asked by Andrey Stebenkov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74632> 1 vote

2.14 Thursday, September 10, 2020

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2.14.1 Top new questions this week

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Coordinate-free derivative	211
Please explain this syntax: <code>GaborWavelet[6]["FourierFactor"]</code> . .	211
How to select several columns from a dataset	212
BarLegend ticks distorted in MatrixPlot	212

Can we use Mathematica to design an electronic active filter?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229714>

How can we use Mathematica to design an electronic implementation of an active filter?
asked by David Keith <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44700> 19 votes

answered by David Keith <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44700> 22 votes

How to mesh a French biscuit (modulated ellipsoid)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229535>

I would like to create a boundary mesh of the following ellipsoid, whose thickness is modulated along its long axis:

The surface parametrization I used for it is:

asked by Oscillon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13605> 10 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 10 votes

Solutions for searching over Mathematica notebooks?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229522>

I have hundreds of Mathematica notebooks accumulated over the years, and I'd like to search over them. I've been using various versions of text search (grep, SilverSearcher, Spotlight), but there are ...

asked by Yaroslav Bulatov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=217> 10 votes

answered by Chris Degnen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=363> 11 votes

Coordinate-free derivative

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229703>

Given the function

$$f : v \mapsto \frac{v}{\|v\|},$$

I would like to compute the derivative of f , that is $df(v)$. It is possible to derive it by hand, which leads to

asked by anderstood <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18767> 9 votes

Please explain this syntax: GaborWavelet[6]["FourierFactor"]

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229853>

I've been using Mathematica for some years, yet I'm befuddled by this statement: `GaborWavelet[6]["FourierFactor"]`

It appears to give the center frequency ...

asked by Chris <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66733> 7 votes

answered by Carl Woll <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45431> 11 votes

How to select several columns from a dataset

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229678>

I have a dataset with 20 columns. For a analysis I need all columns except the columns 9 and 11. What I do is:

asked by Michiel van Mens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9590> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

BarLegend ticks distorted in MatrixPlot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229502>

As shown in many threads here (this, this, ...), Ticks is a valid option of BarLegend. But it doesn't seem to work well in this ...

asked by xiaohuamao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11125> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 8 votes

2.14.2 Greatest hits from previous weeks

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Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W	213
How to ask Mathematica to imitate Andy Warhol's pop-art painting? ing?	214
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How to generate a random snowflake	214
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Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 198 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 257 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 33 votes

answered by nix eagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 52 votes

Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=57763>

When I solve the aforementioned equation for W or A on Mathematica I get a long and ugly equation in return, namely one of the solutions for W is: (attempt to read at your own health)

asked by J.D'Almbert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19257> 8 votes

answered by Alexei Boulbitch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788> 15 votes

How to ask Mathematica to imitate Andy Warhol's pop-art painting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=59132>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting.

However, the result shown below is far from ...

asked by Putterboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16069> 50 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 65 votes

Cutting bagels into linked halves

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=7545>

I recently came across this video: Mathematically correct breakfast, which shows how a bagel can be neatly sliced into two identical linked halves. I'd like to try this with Mathematica. Here's a ...

asked by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 62 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 76 votes

How to generate a random snowflake

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39361>

'Tis the season... And it's about time I posed my first question on Mathematica Stack Exchange. So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

asked by Peltio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6745> 140 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 181 votes

Finding unit tangent, normal, and binormal vectors for a given $r(t)$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18598>

For my Calc III class, I need to find $T(t), N(t)$, and $B(t)$ for $t = 1, 2$, and -1 , given $r(t) = \{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...

asked by a98 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5605> 30 votes

2.14.3 Can you answer these questions?

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force maximum simplification of radicals in a traditional way- How to do it?	216

Solving equations over unknown Domains

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229778>

I am trying to solve for what values of some variables make some expressions true; not exactly equations. For a toy example, I am trying to solve for all values of x that make $4x$ an Integer.

asked by Matthew Crawford <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=51196> 1 vote

Not able to globalize variables from a manipulate expression

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229534>

I am attempting to globalize the variables inside of a Manipulate expression for which my variables are also using interdependent controls. I have attempted to use

asked by Ryan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74490> 1 vote

force maximum simplification of radicals in a traditional way-How to do it?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229660>

this should be simple but I can't get mathematica to simplify a radical or a set of radicals and express them in the traditional way for example by simplifying this

asked by BeTDa <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72885> 2 votes

answered by Daniel Huber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46318> 0 votes

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2.15.1 Top new questions this week

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Is it possible to call back to Mathematica when using Python through ExternalEvaluate?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229164>

makes it possible to call Python code from Mathematica. The Wolfram Client for Python makes it possible to call Mathematica from Python. When using ...

asked by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 8 votes

answered by Riccardo Di Virgilio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=51868> 3 votes

Camera view along the trajectory

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229242>

I want to create an animation like this one: https://www.youtube.com/watch?v=rvzZmNW2_70 After googling I have found just below informations about this issue: <https://twitter.com/bencbartlett/status/...>

asked by Mustafa Kosem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74423> 7 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 6 votes

How to select 2 pairs of distinct twins form a list of 4-tuples?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229409>

Given a list of 4-tuples as follows. `data = Tuples[Range@6, 4]`; I want to select any 4-tuples with two pairs of different twins, for example, as follows:

asked by Wissen Macht Frei <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42141> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 3 votes

Combine two plots with reversed y-axis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229128>

I need to display two y-values for a list of points. I tried doing this:

asked by Rodrigo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=43431> 6 votes

answered by LouisB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22158> 4 votes

Can this probability function speed be improved?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229239>

I have a process that as part of it requires a certain probability query, specifically, given a multinomial distribution with f equiprobable categories and r trials, some specific category has a given ...

asked by ciao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11467> 5 votes

answered by JimB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19758> 4 votes

Embed a rose flower image in 3D space with axes labeled in UTF8

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229299>

I am trying to create an image in which a rose flower image in a 3D space with axes labeled in UTF8! Labels don't render correctly and not sure how to put the image at say the original of XYZ space.

asked by chikitin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74442> 4 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 4 votes

Simplify Nested Lists

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229427>

I have a problem with nested lists. For example, i have this list:

asked by aptmess <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58120> 4 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

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for W 220

Entering numbers in Scientific Notation? 221

Finding unit tangent, normal, and binormal vectors for a given
 $r(t)$ 221

How can I plot implicit equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34668>

If you enter the following into Wolfram | Alpha, you get nice graphs:

graph $4x^4 + y^2 = 2$ How do you do this in Mathematica? I realize that these are not ...

asked by Rollie <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10174> 36 votes

answered by Timothy Wofford <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9391> 38 votes

My Girlfriend is going to prison...Save her with Math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=135937>

Salacious title, but true story.

asked by Prisoners Dilema <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46025> 42 votes

answered by bobthechemist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7167> 23 votes

Image processing: Floor plan - detecting rooms' borders (area) and room names' texts

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19546>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The problem

asked by s.s.o <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=840> 64 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 59 votes

Crack CAPTCHA using deep learning

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=143691>

Deep convolutional neural networks are very good at computer vision related tasks. Optical Character Recognition (OCR) is one important branch of computer vision.

In fact, the convolution neural ...

asked by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 87 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 98 votes

Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=57763>

When I solve the aforementioned equation for W or A on Mathematica I get a long and ugly equation in return, namely one of the solutions for W is: (attempt to read at your own health)

asked by J.D'Almbert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19257> 8 votes

answered by Alexei Boulbitch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788> 15 votes

Entering numbers in Scientific Notation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=36792>

I need to play with a lot of powers such as 10^{-3} , $1E-3$ does not work for it. Is there any short form for it?

asked by hhh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2000> 59 votes

answered by Joe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44710> 1 vote

Finding unit tangent, normal, and binormal vectors for a given $r(t)$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18598>

For my Calc III class, I need to find $T(t)$, $N(t)$, and $B(t)$ for $t = 1, 2$, and -1 , given $r(t) = \{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...

asked by a98 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5605> 30 votes

2.15.3 Can you answer these questions?

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How to force FindClusters to return a specific number of clusters?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229313>

I am using FindClusters with the Method -> "KMedoids" option. I am specifying a desired number of clusters. It returns with many fewer than the desired number. Is there a way to force it ...

asked by abwatson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1709> 2 votes

Calculate a nested integral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229251>

I wish to plot the following probability on Mathematica:

$$\pi = n \cdot \int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty}$$

asked by Avocado <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68764> 1 vote

Differents Initial Conditions for NDSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=229185>

I would like to solve a system of differential equations and another euqtions conect to the system. For example:

asked by Slayz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74408> 1 vote

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2.16.1 Top new questions this week

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Parsing error [bug?] with systems of nonlinear PDEs, Mathematica 12.0.0	224
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Deleting duplicates after n-occurrences

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228775>

As a generalization of DeleteDuplicates, I want to delete duplicates from a list, but only after n number of duplicates. Say,

asked by azerbaijan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53172> 11 votes

answered by ciao <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11467> 16 votes

How can I enclose a closed curve with another identical slightly bigger closed curve?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228524>

I have a closed curve. I am trying to enclose this closed curve with another closed curve, which looks identical in the shape of the first closed curve, but slightly bigger. How to do this?

asked by acoustics <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53981> 10 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 17 votes

Glowing weighted graph (network): vertexes and edges

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228738>

I am trying to find a way (desirably simple and performance/speed optimized for larger graphs) to do the following :

Styling graph vertexes by glow-effect and its intensity depending on ...

asked by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 8 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 5 votes

Why does it take so long to Quit?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228484>

Running Quit is a core task repeated many times in any debugging/development cycle. Its efficiency is therefore important and yet in my set-up it is taking ...

asked by Ronald Monson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2249> 8 votes

answered by Ronald Monson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2249> 9 votes

How to use Flatten to a specific element of a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228579>

Let's say I have a list $\{\{1, 2, 3\}, \{4, 5\}, \dots\}$. I want to make the list look like $\{1, 2, 3, \{4, 5\}, \dots\}$. I am doing this way:

asked by Arghya Datta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=51545> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

Parsing error [bug?] with systems of nonlinear PDEs, Mathematica 12.0.0

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228692>

I find the following behavior using 12.0.0. (EDIT: I asked a friend to try it in 12.1.1 and he finds the same result.) Here is a system of coupled nonlinear PDEs that ...

asked by Will.Mo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49788> 6 votes

Collecting common powers of terms

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228768>

How to collect the common powers appearing in the following function using MATHEMATICA, such that if I input

$$(4 m^6)/((m - n)^2 (m + n)^4 (2m+n)^4)$$

then the ...

asked by Erosannin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73763> 6 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 3 votes

2.16.2 Greatest hits from previous weeks

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Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today’s news, scientists found a bright object on one of Curiosity’s photos (it’s near the bottom of the picture below). It’s a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 198 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 257 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using
`Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]`

but I'm getting ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 17 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 29 votes

How to make the digits of π go around in a spiral like this?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=109982>

Here is a start.

```
MapIndexed[Text[Reverse[First[RealDigits[Pi,10,252]]][[Tr@#2]],#]&,
  Table[{t Cos[t],t Sin[t]},{t,0,16Pi,0.2}]]//Graphics
```

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 56 votes

answered by Martin Ender <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2305> 71 votes

How to calculate contour integrals with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34073>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

asked by user64494 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7152> 40 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 63 votes

How to make a Spherical Cow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=125043>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

asked by Sumit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8070> 69 votes

answered by andre314 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5467> 76 votes

How to find integer solutions?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=42359>

Following is the equation: Need to solve for integer values of x, y when a, b lies between -1000 and 1000 . Problem is to find the number of integer values of pair (x, y) that satisfy it.

asked by Sahil Sareen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12396> 2 votes

answered by bill s <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1783> 4 votes

Plotting a Phase Portrait

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=14160>

I'm trying to plot a phase portrait for the differential equation

$$x'' - (1 - x^2)x' + x = 0.5 \cos(1.1t).$$

The primes are derivatives with respect to t . I've reduced this second order ODE to ...

asked by covertbob <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4528> 38 votes

answered by David Slater <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1746> 32 votes

2.16.3 Can you answer these questions?

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Custom arrowhead will not align properly	228
How to control a presenter notebook with a mobile device? . . .	228

Export function not working via JLink in Java8 compiled application

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228496>

I have documented the following issue with evaluating the Export function via J/Link:
[https://stackoverflow.com/questions/63390977/wolfram-mathematica-kerne-link-export-function-not-working-via-jlink- ...](https://stackoverflow.com/questions/63390977/wolfram-mathematica-kerne-link-export-function-not-working-via-jlink-...)

asked by Ceddaerrix <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74211> 1 vote

Custom arrowhead will not align properly

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228631>

I am trying to put a custom arrowhead on an arrow I am drawing in a plot. My problem is that the (thick) line of the arrow is showing behind the arrow tip. So it seems like the arrowhead is aligned ...

asked by Bjoj <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36437> 1 vote

How to control a presenter notebook with a mobile device?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228733>

In the video of the link below, at 1:40 is said that the presentation can be controlled by a mobile device, how can I do that?

https://www.youtube.com/watch?v=GMHM_iUL_sU

asked by Daniel Rocha da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74279> 1 vote

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2.17.1 Top new questions this week

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Which function names have been re-purposed in Mathematica after being deprecated?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228295>

I have just learned about the new function Splice from this answer. It turns out that this function used to have a completely different usage! (See below.) To me, this seems dangerous, to deprecate a ...

asked by march <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29734> 14 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 9 votes

StringJoin in Thread not working

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228320>

Here is what I have tried first.

```
Thread[f["x", {"1", "2"}]]
```

```
{f["x", "1"], f["x", "2"]}
```

But the weirdest thing happened when I ...

asked by kile <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=65814> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Using sequence to complete arguments to a function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228363>

I have a function of, say 4 arguments $f[a,b,\{c,e\},d]$ where some of the arguments are lists. Given a list of triplets that are possible last-three-arguments to f I'd like to paste them as arguments to ...

asked by ulvi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1714> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

How can I get the progressive application of list of rules?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228088>

I have a very long list of rules, and using this list of rules I want to see how some elements evolve as I successively apply the next rules on the previous rule.

Here is the simpler version of my ...

asked by Gummala Navneeth <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66938> 6 votes

answered by march <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29734> 9 votes

Finding the Period of a Limit Cycle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228319>

I'm interested in the periods of limit cycles of the Wilson-Cowan equations which have the form

$$\begin{aligned}x'(t) &= -x + S(ax(t) - by(t) + e) \\y'(t) &= -y + S(cx(t) - dy(t) + f)\end{aligned}$$

where

$$S(x) = 1 +$$

...

asked by Cheyne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74162> 5 votes

answered by Chris K <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6358> 6 votes

Assigning a Color to each Point on the Plane

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228423>

I have a dataset consisting of points on the plane and a corresponding color. These colors divide the plane into a few distinct regions. I would like to make a plot or diagram that nicely shows this ...

asked by Cheyne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74162> 5 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 4 votes

using regex to find a specific word

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228278>

I want to find the word "circle" and "circles" in the list.

```
list = {"circle" , "picircle" , "circles" }
```

The regex code I wrote which isn't working:

asked by Aryan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73776> 5 votes

answered by Natas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=67431> 7 votes

2.17.2 Greatest hits from previous weeks

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Can Mathematica do symbolic linear algebra?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3242>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, `Simplify[Transpose[Transpose[A].Transpose[B]]]` and Mathematica would simplify it to $B.A$? ...

asked by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 63 votes

answered by Chip Hurst <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4346> 6 votes

How to make the digits of π go around in a spiral like this?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=109982>

Here is a start.

```
MapIndexed[Text[Reverse[First[RealDigits[Pi, 10, 252]]][[Tr@#2]], #]&,
  Table[{t Cos[t], t Sin[t]}, {t, 0, 16Pi, 0.2}]]//Graphics
```

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 56 votes

answered by Martin Ender <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2305> 71 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using `Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]`

but I'm getting some errors. Is there something wrong ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 17 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 29 votes

Standard deck of 52 playing cards in curated data?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16108>

I am not sure how to find out what all is included as curated data. For example, are the individual images of each of the 52 cards in a standard deck of playing cards included?

If not, is there a way ...

asked by JohnD <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1629> 25 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 23 votes

Skip header lines on import

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=50718>

When importing a data file what are the comment symbols for Mathematica? That is, given a file like this

```
blabla  
bulbul
```

1 2 6 54 7 ...

..

what symbol do I have to put in front of header lines so ...

asked by MaxJ <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=14687> 20 votes

answered by george2079 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2079> 18 votes

How to graph a sphere with cartesian equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=24169>

I'm new to Mathematica and I need to ask how to graph a sphere, cylinder, etc.. using cartesian equations.

For example in sphere's case $x^2 + y^2 + z^2 = 1$

I tried to use Plot3D but it doesn't ...

asked by German <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7145> 7 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 13 votes

How to create a new "person curve"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=17704>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter `WolframAlpha["person curve"]` into a Mathematica notebook, or person curve into ...

asked by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 83 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 45 votes

2.17.3 Can you answer these questions?

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How to convince Mathematica that $(-1)^{2/3} = e^{2\pi i/3}$	235
How to monitor progress of multiple downloads with URLDownload? load?	235

Mathematica 12.0 and BibTeX reference problem (Windows 10)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228347>

I have problems getting the Citation Management in Mathematica 12.0 to work. It does not work with either EndNote or BibTeX. To do a minimal example, I have the following BibTeX file (libra.bib) ...

asked by jaclea <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7911> 1 vote

How to convince Mathematica that $(-1)^{2/3} = e^{2\pi i/3}$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228257>

I have a list T which contains $3 + 4E^{(2\pi i/3)}$. Yet `MemberQ[T, 3 + 4*(-1)^(2/3)]` returns false.

One can check for themselves with `MemberQ[{3 + 4E^(2*Pi*I/3)}, 3 + 4*(-1)^(2/3)]`. It will return ...

asked by Descartes Before the Horse <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69355> 2 votes

How to monitor progress of multiple downloads with URLDownload?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228403>

I have a few image urls that I want to download async, how can we monitor progress of URLDownload? Example:

```
Monitor[
  URLDownload[
    WebImageSearch["dog", ...
```

asked by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 1 vote

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2.18.1 Top new questions this week

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How to enter a nuclear reaction?	237
How to find a numerical antiderivative with NIntegrate methods?	237
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How can I find a functional square root in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227863>

A functional square root of a function g is another function f such that $g = f \circ f$. According to that article, there is a systematic approach to finding a functional square root that involves ...

asked by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 10 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 2 votes

The numerics of FresnelS[]

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227893>

Bug introduced in 12.1 or earlier and persisting through 12.1.1 or later [CASE:4615361]

Note: A worse problem existed in 12.0 for inputs greater than 8 and of precisions less than 43.66; 12.1 fixed ...

asked by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 9 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 6 votes

How to enter a nuclear reaction?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227846>

Sometimes the simplest things are the most difficult, I need to make a presentation, and I thought to do it in Mathematica, I wanted to do a demonstration too, well...this is the Rutherford's equation

asked by Chris Schwenke <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=65367> 9 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 14 votes

How to find a numerical antiderivative with NIntegrate methods?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227869>

@JimBelk asked in Interpolating an Antiderivative how to find a numerical antiderivative. I gave an answer that uses NDSolve with the default method for integrating $y' = f(x, y)$. However for ...

asked by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 8 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 9 votes

How to draw one-line Venn diagram?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227990>

This is the a list of set.

```
data = {{ "A" }, { "J" }, { "Q" }, { "G", "H" }, { "I", "O" },  
        { "B", "C", "E", ...
```

asked by partida <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=15961> 6 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

How to express permutation as the least number of exchanges

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227996>

If there are grammatical or terminological errors in the following description, please help correct:

In some problems, it is necessary to find out what minimum number of exchanges can change a list ...

asked by Ordinary users68 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 5 votes

answered by Hausdorff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73380> 5 votes

Remove mesh triangles in contour plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227837>

How do I get rid of the mesh in this contour plot?

```
ContourPlot[x^2 + y^2, {x, -10, 10}, {y, -10, 10},
  Contours -> {1.0, 4.0, 10.5}, ContourStyle -> None,
  ContourShading -> ...
```

asked by QuantumDot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2048> 5 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 6 votes

2.18.2 Greatest hits from previous weeks

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How to create animated snowfall?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16881>

Well, the title is self-explanatory. What sorts of snowfall can we generate using Mathematica? There are two options I suggest to consider:

1) Continuous GIF animations with smallest possible number ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 39 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 53 votes

What does # mean in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19035>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

$$x = \text{Root}[\#1^8 c^4 - 8 \#1^7 c^4 + 28 \#1^6 c^4 - 56 \#1^5 c^4 + 70 \#1^4 c^4 - 56 \#1^3 c^4 + 28 \#1^2 c^4 - 8 \#1 c^4 + c^4, \#1]$$

asked by rononymous <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5730> 37 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 63 votes

Elegant operations on matrix rows and columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3069>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 179 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 60 votes

Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 198 votes answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 257 votes

Plot, extract data to a file

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19859>

I need to save data that Mathematica uses inside the Plot command. The format that I would like to have is:

```
x1 y1  
x2 y2
```

i.e. basically, two columns, x and y (sorted, if possible) so that I ...

asked by molkee <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5097> 29 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 46 votes

Labeling individual curves in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4444>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

asked by Tianxiang Xiong <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1041> 62 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 46 votes

How to add a vertical line to a plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3561>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

`f[x_] := (x^2 z)/((x^2 - y^2)^2 + 4 q^2 x^2) /. {y -> /15, z -> 1, q -> ...`

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 56 votes

answered by Ajasja <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=745> 76 votes

2.18.3 Can you answer these questions?

Does MMA have a built-in function or a user-defined function to judge whether the two matrices are congruent . . .	241
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Does MMA have a built-in function or a user-defined function to judge whether the two matrices are congruent

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227756>

It can be seen from the following relationship that matrix A and matrix B must be congruent matrices with each other:

`A = {{1, 4, 4}, {5, 2, 2}, {3, 1, 3}};`
`B = EulerMatrix[{/4, 0, ...`

asked by Ordinary users68 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 3 votes

Symbolic solution to periodic boundary conditions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=228028>

Is it possible to get an analytical solution to the following problem? If so, how?

$$aw^{(1,0)}(x, t) + bw^{(0,1)}(x, t) = p(x) + gw(x, t)$$

asked by Scott G <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=74062> 1 vote

answered by Michael Seifert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27813> 0 votes

Collecting terms in NCAgebra

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=227812>

Let's say we have GP[v],GM[v]: two noncommutative objects depending on the commutative

```
<< NC';
<< NCAgebra';
SetCommutative[v];
SetNonCommutative[GP, GM]
NCCollect[
  GM[v] ** ...
```

asked by Kawette <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60529> 1 vote

2.19 Thursday, July 23, 2020

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2.19.1 Top new questions this week

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How to rewrite a tensor as a matrix

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226089> I put

`{TensorProduct[{1, 0}, {0, 1}, {0, 1}, {0, 1}, {0, 1}]/Sqrt[2]//MatrixForm`
and I got

\$\$

```
\left(
\begin{array}{cc}
\left(
\begin{array}{cc}
\left(
\begin{array}{cc}
0 & 0 \\
0 & 0
\end{array}
\end{array}
\end{array}
\end{array}
\right)
\end{array}
\right)
\end{array}
\right)
```

asked by Moeki <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73815> 12 votes

answered by Suba Thomas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5998> 9 votes

Breaking "Functional Loops" and Doing Lazy Evaluation In Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226334>

Alright, so this is a question about the functional way to break a for/while loop. Since we're on the Mathematica SE, I'm interested in the ways a Mathematica vet would handle this, however the ...

asked by dskeletov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34831> 8 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 6 votes

Hexadecimal bytes as variable converted to binary bits

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226171>

I am working with hexadecimal bytes but need to shift them into lists of binary bits for a few operations and then back again. For example, I would like C12B to turn into ...

asked by toothandsticks <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73837> 8 votes

answered by Hausdorff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73380> 9 votes

Kernel starts up very slowly on Linux

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226128>

V 12.1.1, starting a kernel, e.g. by entering wolframscript in the shell, takes an unexpectedly long time (~5 min, the time elapsed between pressing Enter and the showing-up of In[1] :=); but the ...

asked by <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12924> 8 votes

answered by Ordinary users68 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 5 votes

How to decompose a list of n-tuples into a union of Cartesian products

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226294>

I have a list with all elements at the same level

```
{
  {a, d}, {a, e}, {a, f},
  {b, d}, {b, e}, {b, f},
  {c, d}, {c, e}, {c, f},
  {x, t}, {x, q}
}
```

How can I transform this to a list of ...

asked by Martin Leung <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73880> 7 votes

answered by yarchik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9469> 4 votes

Mathematica emits a beep after any evaluation - how to remove it?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226316>

Without any obvious reason Mathematica started to emit a beep after each evaluation, even when it is error free. Why is that, and how can I turn it off? I tried restarting Mathematica to no avail, and ...

asked by Jxx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68480> 6 votes

answered by Ordinary users68 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 6 votes

Prony series with a large number of terms

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226327>

A Prony series is similar to a Fourier series but can have fewer terms. It takes the form $\sum_{i=1}^M A_i e^{\sigma_i t} \cos(\omega_i t + \phi_i)$ Note that unlike Fourier series ...

asked by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 6 votes

2.19.2 Greatest hits from previous weeks

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Is there an open source implementation of Mathematica-the-language?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4454>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

asked by sbloom <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=178> 121 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 83 votes

Image processing: Floor plan - detecting rooms' borders (area) and room names' texts

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19546>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

asked by s.s.o <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=840> 63 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 58 votes

How to make Jacobian automatically in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=5790>

If we have two vectors, a and b , how can I make Jacobian matrix automatically in Mathematica?

```


$$a = \left( \begin{array}{c} x_1^3 + 2x_2^2 \\ 3x_1^4 + 7x_2 \end{array} \right); b = \left( \right.$$

```

asked by George Mills <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1012> 38 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 50 votes

Skip header lines on import

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=50718>

When importing a data file what are the comment symbols for Mathematica? That is, given a file like this

```
blabla bulbul
```

```
1 2 6 54 7 ...
```

what symbol do I have to put in front of header lines so ...

asked by MaxJ <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=14687> 20 votes

answered by george2079 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2079> 18 votes

How to find the position of elements in a list satisfying criteria

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=180>

Say I have a list $x=2,4,6,8,10$ and I want to find out the positions of the elements that are greater than 7.

`Select[x, #>7&]` gives the elements themselves, and `Position[x,8]` gives the ...

asked by PeterR <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=140> 65 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 62 votes

How to make an inkblot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3345>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

`RandomBlot[num_, opts___] := ...`

asked by István Zachar <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=89> 86 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 51 votes

How to generate a random snowflake

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39361>

'Tis the season... And it's about time I posed my first question on Mathematica Stack Exchange. So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

asked by Peltio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6745> 140 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 181 votes

2.19.3 Can you answer these questions?

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How to write this piece of code without AppendTo

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226081>

I am trying to fill a vector starting from component 11 from another vector, I use this code:

```
Do[AppendTo[xp, x[[i + 10]]], {i, 1, 99982}]
```

How can I fill xp without using 'AppendTo'?

asked by mattiav27 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8822> 1 vote

Solving a cubic equation in mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226231>

I am trying to solve a cubic equation using Mathematica of a rather complicated expression say $f(r, \beta, \theta)$, and in terms of r the maximum degree term that appears is of degree 3 so I ...

asked by Wubba lubba dub dub <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70072> 1 vote

Using Select for lattice points

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=226130>

I know how to use Select to generate a list of numbers which satisfy a certain condition. However, I am not sure how to do this for points (specifically 2-tuples) rather than numbers. What I am trying ...

asked by Descartes Before the Horse <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69355> 1 vote

2.20 Thursday, July 16, 2020

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2.20.1 Top new questions this week

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Reveal the formal PDE of FiniteElement

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225711>

When FiniteElement method is used, the differential equations will first be transformed to certain standard form (named as formal PDE in recent FEM document), and it turns out to be critical to check ...

asked by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 11 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 8 votes

Drag and lift force acting on an airfoil

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225928>

To calculate force acting on an airfoil we can use FEM with version 12 and over. Here we show an example with NACA2415. First we calculate mesh and potential flow:

```
ClearAll[NACA2415];
NACA2415[{m_, ...
```

asked by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 9 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 6 votes

When is a symbol a Symbol? Is there an easy mathematica way to test if an object is a symbol sort of like a SymbolQ?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225811>

Yes I know there is no built in native function called SymbolQ (but JavaScript does). However could one be simulated to work for most cases? I often rely

on `objectName[symbol]` and `makeRuleRow[symbol]` ...

asked by Jules Manson <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=37721> 9 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 8 votes

Using Regular Expression

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225910>

`sample2 = "this is a test to find whether pi works for other words or not as well pi pi pi potatpi pineapple pi-neapple";`

so `sample2` is a string, and I want to search the word/substring ...

asked by Aryan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73776> 8 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 9 votes

Changing the color of the animate box

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225941>

Is there a way to change the coloring of the boxes that are generated by `Animate` or `Manipulate`? The color of what is gray by default.

`Animate[ArrayPlot[CellularAutomaton[n, {{1}, 0}, {40, All}]], {n, ...`

asked by thinkingdude <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73139> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Bad linear fit for simple data

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225985>

I have some data :

```
data={{1.01074, 0.964488}, {1.08552, 0.993067}, {1.07907,
  1.01836}, {1.0477, 1.03695}, {1.07717, 1.07973}, {1.10243,
  1.08195}, {1.12669, 1.09112}, {1.09405, 1.09319}, ...
```

asked by J.A <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58104> 7 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 12 votes

How to use each replacement only once in a list of replacements

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225929>

I have a list of replacements and some list they are acting on. However, some RHS of the replacements rules are identical (the LHS is not). I want to use those rules one after another (perhaps cycling ...

asked by Kvothe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45020> 7 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 5 votes

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Positioning axes labels

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=87388>

I need to change the position of my axes labels such that the y-axis label is in the middle and parallel to the y-axis. I'd also like the x-axis label to be in the middle of the x-axis rather than ...

asked by John_dydx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7849> 15 votes

answered by Virgil <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27697> 16 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Is there something like `DensityPlot3D` to visualize atomic orbitals?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32378>

I'm visualizing some hydrogen like atomic orbitals. For looking at plane slices of the probability density, the `DensityPlot` function works well, and with something like:

```
Manipulate[
  DensityPlot[ ...
```

asked by Peeter Joot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1045> 45 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 24 votes

Mathematica command that allows it to read my intentions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=194384>

In version 2.0 of Mathematica there was a command, `ReadProgrammerIntentions[]` which allowed it rapidly compose code that could solve problems simple to complex, based on my requirements. Understand ...

asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 52 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 38 votes

Does Mathematica 11 work with MacOS Catalina 10.15

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=207522>

I just upgraded my macbook to 10.15 and could not open Mathematica 11. I am wondering are there any workarounds to use Mathematica 11 without upgrading to 12? Thank you!

asked by Jiang Xiang <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16218> 27 votes

answered by Itai Seggev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4848> 18 votes

Finding Limits in several variables

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=21544>

Is there a way to find a limit of a multivariable function, like

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y)$$

with Mathematica?

When f is continuous, we can use

$$\lim_{(x,y) \rightarrow (0,0)}$$

...

asked by Dominic Michaelis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5899> 31 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 42 votes

Parallel and perpendicular symbol from Mathematica to L^AT_EX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to L^AT_EX:

```
\begin{bmatrix}
E_{\parallel} \ \ E_{\perp}
\end{bmatrix}
```

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 18 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 26 votes

2.20.3 Can you answer these questions?

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Finding the domain in which a function is analytic with no imaginary part

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225913>

I was wondering if it is easy to see if a given expression evaluates to a real number in a given domain? Let e.g. $f(x, y, z)$ be some function depending on three variables x, y, z . I would like to know if ...

asked by CAF <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=30885> 1 vote

Argmax - all maximizer positions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225980>

Generally the Argmax function returns one position, where a function is maximized. Is there a easy way to obtain a list of rules for all maximizer points?

asked by Daniel Rehsman <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73792> 1 vote

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 0 votes

AceFEM MacOS not responding

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225678>

I just upgraded to v7.114 of AceFEM running on MacOS 10.15.5 and Mathematica 12.0.0.0. I was running v7.101 without a problem. AceGEN seems to work but all AceFEM code starts but does nothing. The ...

asked by Andrew <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73727> 1 vote

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2.21.1 Top new questions this week

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How to solve the Monty Hall problem?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225238>

Problem For purely recreational purposes I would like to solve the Monty Hall problem with Mathematica using the function Probability (dedicated to the calculation of probabilities). About the Monty ...

asked by mlpo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11155> 12 votes

answered by Sjoerd Smit <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=43522> 16 votes

Change Opacity along a ListLinePlot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225337>

I'm trying to change the opacity of a line in a ListLinePlot for increasing x-value. E.g. the line should have opacity 1 at beginning and shade than down to opacity along the line. I want to take the ...

asked by piolio <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73660> 10 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 8 votes

Use Cases with empty cells in the list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225360>

I work with a complex dataset. The most simple form of this list looks like:

```
dat1 = {{a, b, c, {}}, {d, e, f, {1}}, {h, i, j, {2}}}
```

I want to select the nested {} part.

```
Cases[dat1, {___, {a_}} :> ...
```

asked by Michiel van Mens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9590> 9 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 9 votes

Writing compiled functions as fast as Python's Numba

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225277>

I want to write some code to simulate a damped oscillator that is just as fast as code written using Numba's @jit decorator. I've written the mathematica code and mine is 20-40x slower than the ...

asked by Diffycue <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46327> 9 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 16 votes

Why are more highly nested lists often not more memory and time-intensive?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225540>

I would expect more highly nested lists, being deeper and more complex than flatter lists, to take up more space (bytecount) and take more time and memory to operate on in general. Consider the ...

asked by Just Some Old Man <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12697> 7 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 10 votes

Correcting the Color Scale of a MatrixPlot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225186>

I did a MatrixPlot of a set of values that range between 0 and 1. I got the following first plot with no problems:

As we can see from the legend, the values range between 0 and 1. Now, I am doing ...

asked by Naps <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73570> 7 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 5 votes

Verify an inequality of many parameters

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225380>

I've got an inequality of 10 non-negative parameters (arising from a 5x5 matrix) and would like to verify whether it holds. I tried the following, which doesn't seem to work:

asked by Vicky <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73675> 6 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 4 votes

2.21.2 Greatest hits from previous weeks

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How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8895>

I am seeking a convenient and effective way to calculate such geometric quantities. I've used packages like TensoriaCalc, but they don't work at all time. Sometimes, I run into the following error:

asked by Zoe Rowa <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1713> 38 votes

answered by Yi-Zen Chu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4869> 18 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

xkcd-style Plots

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11350>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

asked by Amatya <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2039> 613 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 472 votes

Are you interested in purchasing David Wagner's "Power programming with Mathematica"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16485>

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

asked by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 158 votes

answered by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 233 votes

Parallel and perpendicular symbol from Mathematica to LaTeX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to LaTeX:

```
\begin{bmatrix}
E_{\parallel} \\ E_{\perp}
\end{bmatrix}
```

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 18 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 26 votes

Mathematica Minecraft

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19669>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 164 votes

answered by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 234 votes

Labeling individual curves in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=4444>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

asked by Tianxiang Xiong <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1041> 62 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 46 votes

2.21.3 Can you answer these questions?

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How to include a meter in Manipulate that shows a value calculated from the manipulate dynamic variable?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225465>

I'm trying to make a visualization of grid (representing magnetic states) and I want to include a meter that shows a variable calculated from the manipulate index

(of the form $J1/J2 = (\text{index}) * 0.1$) so . . .

asked by mike1994 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73104> 1 vote

Measuring the time remaining until completion for built in functions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225436>

All of the functions in How to create a progress bar?, the ProgressIndicator built-in and Monitoring lengthy computations estimate the completion time for implementation of operations that are ...

asked by thinkingdude <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73139> 1 vote

creating uppertriangularized matrix

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225231>

I am trying to create an uppertriangularized matrix of arbitrary size,max of the form $\{\{1,2,3,4,5\},\{0,1,2,3,4\},\{0,0,1,2,3\},\{0,0,0,1,2\},\{0,0,0,0,1\}\}$

using the code

`table = Table[mu^(j - 1) ...`

asked by Z Ming Ma <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70345> 1 vote

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2.22.1 Top new questions this week

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 Intersection of 3 circles in GeometricScene 266

How to make a structured mesh with a hole and extrude it

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224739>

I am trying to use the FEMAddOns package to make a structured mesh with a hole and then extrude it. As a warm up example this worked nicely.

```
Needs["FEMAddOns`"]
```

```
pts1 = Table[
```

```
  25. ( ...
```

asked by Hugh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12558> 14 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 13 votes

How to NOT a specific pattern?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225008>

been going around in circles on this:

```
{1/3, 1, 0.22, 3, "v", 4} /. _?NumericQ -> "999"
```

Now I'm trying to replace everything that is not a number; is there a way to do this?
...

asked by CuriousDudeFromEgypt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66462> 10 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 13 votes

Ordering Problem With VoronoiMesh

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224830>

Imagine I want to model 2D cells moving in a tissue. Consider, as an example, Lloyd's relaxation algorithm. Using VoronoiMesh I'm able to mimic some cell movement. Now, if I colour one of the cells in ...

asked by sam wolfe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=64001> 9 votes

answered by TumbiSapichu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53229> 2 votes

Peculiar behaviour in the implementation of "Filling"

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224907>

I was working with mathematica and I need to use "Filling", however I notice that it doesn't work when you have "small" numbers, for example if I make the following:

asked by Cruz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69573> 9 votes

`i_:0|1` varies in v12.1: incompatible change or bug?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224987>

Just check

```
i_: 0 | 1 // FullForm
```

In v12.0 or earlier the output is

```
Alternatives[Optional[Pattern[i, Blank[]], 0], 1]
```

But in v12.1 the output becomes

```
Optional[Pattern[i, Blank[]], Alternatives[0, ...
```

asked by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 9 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 9 votes

Inverse of StringReplace

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225071>

Suppose I have the following StringReplace rule

```
StringReplace[st, {"a" -> "0", "OverBar[a]" -> "1", "b" -> "1"},
```

asked by math <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72358> 8 votes

answered by Suba Thomas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5998> 8 votes

Intersection of 3 circles in GeometricScene

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224874>

I am trying to represent the image below in Mathematica and can't seem to make it work. There doesn't seem to be any constraint of type circle intersection in the documentation. I tried this:

asked by SorinS <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73427> 8 votes

answered by SneezeFor16Min <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69875> 11 votes

2.22.2 Greatest hits from previous weeks

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Why I get the "Set::write: "Tag Times in is Protected." error?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11868>

Why I get the error below with this code:

```
Needs["VectorAnalysis`"]
```

```
= 1000;
g = 9.80665;
= 0.001;
p[x_, y_, z_, t_] = {x^2, Sqrt[y], -z, t^3};
f[x_, y_, z_, t_] = {-x^2, Sqrt[y]/2, z, t^2};
```

...

asked by Aurelius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1669> 10 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 13 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 462 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 279 votes

Is it possible to export the equations from Mathematica to MATLAB?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=14035>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

asked by Seyhmus Güngören <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4256> 41 votes

answered by rm -rf <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 48 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

How to find the position of elements in a list satisfying criteria

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=180>

Say I have a list $x=2,4,6,8,10$ and I want to find out the positions of the elements that are greater than 7.

`Select[x, #>7&]` gives the elements themselves, and `Position[x,8]` gives the ...

asked by PeterR <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=140> 64 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 62 votes

Get a "step-by-step" evaluation in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=148>

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it? If so, how does one do it?

asked by Cydonia7 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44> 125 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 105 votes

Is there any algorithm that runs faster in Mathematica than in C or Fortran?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=208045>

I'm just curious. My friend just told me that Mathematica is mostly for symbolic calculation and not efficient for Numerical computations. He told me that's the reason most of the people don't use ...

asked by Gummala Navneeth <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66938> 44 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 73 votes

2.22.3 Can you answer these questions?

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When making a package, how can I make a function that is already used by system?	269
Simplifying expressions using elementary properties of integrals	270

An apparent bug in GeometryConvexHull2

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224966>

I was replacing some usages of GeometryConvexHull2 with ConvexHullMesh and found one of my tests failing. It turned out the test asserted an incorrect expected result that agrees with the result of ...

asked by Vladimir Reshetnikov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7288> 1 vote

When making a package, how can I make a function that is already used by system?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224730>

Obviously, Plus[a,b] is given by Mathematica but say I have a package and I want to name a function Plus[a,b]. How can I go about making a new function without overwriting the original function ...

asked by Brandon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73362> 2 votes

Simplifying expressions using elementary properties of integrals

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=225023>

I want to be able to use Simplify (or FullSimplify) to simplify expressions involving, for example, sums of integrals, for instance turning

$$\int_a^b f(x) dx + \int_b^c f(x) dx$$

into

$$\int_a^c$$

...

asked by Pillsy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=531> 2 votes

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2.23.1 Top new questions this week

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 a, 3, b, 5, c, 2? 271
 Selecting lists where all are prime 272
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 Calculate Radius of Curvature 272
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Version 12.1.1 unable to type ">"

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224461>

Bug introduced in 12.1.1

Since I upgraded to version 12.1.1 I am unable to use > (Shift+.). When I type Shift+. the cell that I am typing in converts to Python. What am I doing wrong?

Steps to ...

asked by wdacda <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27856> 15 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 10 votes

Is there any better way to create a, a, a, b, b, b, b, b, c, c from a, 3, b, 5, c, 2?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224581>

My attempt:

```
data = {a, 3}, {b, 5}, {c, 2};
```

```
output = Table#[[1]], #[[2]] & /@ data // Flatten
```

```
{a, a, a, b, b, b, b, b, c, c}
```

asked by Too Fat Man No Neck <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42141> 11 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 18 votes

Selecting lists where all are prime

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224500>

Given

$$t = \{\{7, 13, 19\}, \{13, 25, 37\}, \{19, 37, 55\}, \{25, 49, 73\}, \{31, 61, 91\}, \{37, 73, 101\}\}$$

I want to select those lists where all three numbers are primes, so I should get $\{\{7, 13, 19\}, \{37, \dots\}$

asked by user57467 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57467> 9 votes

answered by Pillsy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=531> 12 votes

Inverting replace direction

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224314>

I just have a simple problem. I have a list such that,

$$\text{rep} = \{ a1 \rightarrow b1, a2 \rightarrow b2, a3 \rightarrow b3 \};$$

I want to invert replace direction such that,
 $\{ b1 \rightarrow a1, b2 \rightarrow a2, b3 \rightarrow a3 \}$

asked by Saesun Kim <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=29998> 8 votes

answered by PaulCommentary <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=54458> 8 votes

Calculate Radius of Curvature

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224269>

I have a list of coordinates that make a near-parabolic graph, which I managed to fit and calculate the curvature. However, the curvature only outputs a equation. Is there any way to calculate the ...

asked by Char <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66040> 8 votes

answered by yarchik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9469> 11 votes

Legendre expansion of the Dirac delta function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224276>

There is a known expansion for the Dirac delta function in the interval $(-1, 1)$ in terms of the Legendre polynomials as

$$\delta(x) = \sum_{k=0}^{\infty} (-1)^k \frac{(4k+1)(2k)!}{2^{2k+1}}$$

asked by Novice <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72595> 7 votes

answered by yarchik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9469> 11 votes

Which methods are available for NDEigensystem?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224511>

I am trying to find out what methods/options are available for NDEigensystem and descriptions of their use. Perusing the help, online Q&As, Mathematica’s in-line autofill, etc., I’ve found a few, ...

asked by Eli Lansley <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9> 6 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 5 votes

2.23.2 Greatest hits from previous weeks

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Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W	275
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How can I save both the plot and the legend together?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=35653>

In this example, how can I put the legend inside the graph? Currently, when I save the graph, only the graph is saved, not the legend.

```
Expr1 = -2 p + 1
Expr2 = 2 p - 1
Expr3 = p - 1/2
Plot[{Expr1, ...
```

asked by Mika Ike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6543> 41 votes

answered by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 35 votes

Formatting legend text font

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3433>

I am using this code to plot a graph, and I am trying to make the font of the legend bigger.

```
<<PlotLegends'
ListLogLogPlot[{Sort[moby]}, PlotRange -> Full, Joined -> True,
```

asked by Julia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=525> 20 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 25 votes

QR Code in shopping cart handle

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26268>

This week, the market people from my work wanted to put QR codes in shopping cart handles, but when they tested it, the QR code did not work. I noted that the cylindrical curvature (even small) ...

asked by Murta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2266> 194 votes

answered by halirutan <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=187> 190 votes

Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=57763>

When I solve the aforementioned equation for W or A on Mathematica I get a long and ugly equation in return, namely one of the solutions for W is: (attempt to read at your own health)

asked by J.D'Almbert <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19257> 8 votes

answered by Alexei Boulbitch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788> 14 votes

1 Plot, 2 Scale/Axis

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=627>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 145 votes

answered by ArgentoSapiens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=92> 149 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 462 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 279 votes

How to express trigonometric equation in terms of of given trigonometric function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=434>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$$\text{Sin}[x]^2 + \text{Cos}[x]^2 == 1$$

$$\text{Sin}[x] / \text{Cos}[x] == \text{Tan}[x]$$

asked by Prashant Bhate <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9930> 30 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3437> 37 votes

2.23.3 Can you answer these questions?

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Acquiring images from Zwo ASI camera in Mathematica Home Edition v 11.2.0.0	277

Using RegionPlot with NDSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224477>

So I have a DE which has no analytical solution and thus solved using NDSolve, involving some parameters like this:

```
solution=NDSolve[{b/z[t]^4+a z'[t]+z''[t]==0,z[0]==3,z'[0]==3},z,{t,0,5}]
```

I was ...

asked by t-smart <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53560> 1 vote

Implementing binomial expansion of (non-commuting) matrices in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224402>

Given two matrices A and B , their Binomial expansion is, in general, given by (see this page) $(A + B)^n = \sum_{k=0, k=n[2]}^n \left(\sum_{r=0}^k \binom{k}{r} A^r B^{k-r} \right) \dots$

asked by Rob <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66809> 1 vote

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 0 votes

Acquiring images from Zwo ASI camera in Mathematica Home Edition v 11.2.0.0

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224258>

I plan to use a ZWO ASI planetary camera (USB connection) for astronomical photography and would like to control the image acquisition using Mathematica. The issue is that although I have installed ...

asked by Dave Baker <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73406> 1 vote

2.24 Thursday, June 18, 2020

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2.24.1 Top new questions this week

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Find second largest elements in list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223907>

Given a list:

```
lis = {37.21, 37.21, 37.2, 44, 44, 44, 101, 101}
```

What is a simple way to extract the second largest elements?

```
In[] := someFunction[lis]
```

```
Out[] = {44, 44, 44}
```

asked by Conor Cosnett <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36681> 14 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 16 votes

The performance of AceFEM in Intel Processor VS. AMD Processor

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224062>

I am going to buy a new powerful desktop that I will use to run finite element simulations using AceFEM. I found out that the new AMD Ryzen 9 3950X obtained more points in the CPU Passmark benchmark ...

asked by KratosMath <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53039> 8 votes

answered by marko <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=48938> 8 votes

Rendering PNG images to spline curves

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223978>

I found something interesting on this page (Generic contour smoothing with shading) that could help me improve my images. Unfortunately, they can only be used with graphics generated by the software ...

asked by LCarvalho <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=37895> 8 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 9 votes

Parallel computing: cores vs threads

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223899>

I'm running Mathematica on a machine with 48 cores and 96 threads. I want to limit the number of threads the computation can have access to. If I give `LaunchKernels[1]` it correctly launches a single ...

asked by Paolo Pani <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73287> 8 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 9 votes

Convert ConvexHull to Inequality

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223943>

I have the following convex hull.

`P0={0,0,0};`

`P1={1,0,0};`

`P2={0,1,0};`

`P3={0,0,1};`

`ConvexHullMesh[{P0,P1,P2,P3}]`

Now I want the region algebraically as equality of the convex hull generated, in ...

asked by Sumit Banik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71940> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Multi-variable Fixed Point Iteration Command?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223817>

We want to find the zeros of a multi-dimensional function

$$f[x_, y_] = \{x + 1/4 (-\text{Cos}[x] + \text{Sin}[y]), x - y - \text{Sin}[y]/4\}$$

To find the zeros, we can initialize and show the iterates using FindRoot

asked by Moo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36141> 7 votes

answered by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 7 votes

Unimport wolfram language package

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224140>

In Wolfram Language, Import["file.wl"] can import external wolfram package, Is it reversible? Can I unimport some packages? In other means Unset all the Function, Variable which is Set when ...

asked by Audra Jacot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=67051> 6 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 7 votes

2.24.2 Greatest hits from previous weeks

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Positioning axes labels

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=87388>

I need to change the position of my axes labels such that the y-axis label is in the middle and parallel to the y-axis. I'd also like the x-axis label to be in the middle of the x-axis rather than ...

asked by John_dydx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7849> 15 votes

answered by Virgil <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27697> 16 votes

Using `Export[]` sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the `Export` command to convert a list of plots into a *.gif file, and the command runs and executes well, but I can't find the file! Where is it supposed to go? Did it even work?

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 51 votes

How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66273>

I'm trying to expedite some quantum mechanical calculations (expectation values etc.) by running them through Mathematica. When I say, for example,

```
u[x_] := Sqrt[2/L] * Sin[Pi * n * x / L]
```

and then ...

asked by Matthew Brunetti <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22304> 36 votes

answered by SquareOne <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19960> 22 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

How to add a vertical line to a plot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3561>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

```
f[x_] := (x^2 z)/((x^2 - y^2)^2 + 4 q^2 x^2) /. {y -> /15, z -> 1, q -> ...}
```

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 54 votes

answered by Ajasja <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=745> 75 votes

Selecting every n-th element from a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=64003>

I have a list:

```
data = {4, 5, 7, 8, 9, 5, 3, 2, 1, 2, 13, 12};
```

I want to take those elements in the list which are located at equal distances, say, every third element, getting the list {7, 5, 1, ...

asked by Suro <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=20003> 34 votes

How to plot an ellipse?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=20100>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using

```
Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]
```

but I'm getting some errors. Is there something wrong ...

asked by Sriram <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6075> 17 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 29 votes

2.24.3 Can you answer these questions?

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Why doesn't Mathematica provide an answer while Wolfram Alpha does, concerning a series convergence?	284

Export Large Sparse Matrix As .mtx File

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223991>

I'm trying to export a large sparse matrix of dimension 1164960 by 1164960 with 17815680 elements as an .mtx file so I can import it into Python. I first the run the following code successfully.

asked by Daniel Berkowitz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27536> 1 vote

What are "VariableReplacementDump" and "TranscendentalDump"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223879>

I have run into a Mathematica object I've never seen before and Googling those reveals nothing. I'm talking about VariableReplacementDump and TranscendentalDump. Here's how I got these:

asked by Lokdal <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=23117> 1 vote

Why doesn't Mathematica provide an answer while Wolfram|Alpha does, concerning a series convergence?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=224072>

Among other series I've been working on, I was asked to find whether

$$\sum_n 1 - \cos\left(\frac{\pi}{n}\right)$$

converged, and Mathematica's output to

`SumConvergence[1 - Cos[Pi/n], n]` simply was repeating the ...

asked by Hal <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73083> 1 vote

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2.25.1 Top new questions this week

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Find if there are consecutive 1s in a binary representation of a number

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223087>

Given a list of numbers in decimal form, what is the most efficient way to determine if there are any consecutive 1s in the binary forms of those numbers? My solution so far:

```
dim = 3;
declist = ...
```

asked by KHAAAAAAAAAN <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=65587> 10 votes

answered by MassDefect <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42264> 10 votes

Why do some PlotThemes not work with Mesh as expected? What can be done about it?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223159>

While updating my answer for (189038) I noted that some PlotThemes do not work with Mesh in a meaningful way:

```
SeedRandom["08.01.2019"];
$plotThemes = Map[ToString] @ { Web, Monochrome, Detailed, ...
```

asked by gwr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=764> 9 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

How can I replace a set of Nested For Loops with a Functional Code Alternative?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223023>

Despite having looked over various posts concerning optimizing nested For loop expressions into a functional programming equivalent I still can not figure out how to actually do this. Such ...

asked by Stuart Poss <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35282> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

How to construct this matrix in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222895>

I create a symbolic matrix using the following:

```
mat = ToExpression[Table[StringJoin[{"s", ToString[i], ToString[j]}], {i, 1, d}, {j, 1, d}]]
```

for arbitrary d . Notice that for $d = 2$, this gives

asked by Sid <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26461> 8 votes

answered by Edmund <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19542> 6 votes

Rewriting partitions using exponents

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222950>

I'm looking for a way to re-express a partition given in full form, like $\{2, 2, 1, 1\}$, into the shortened form $\{2^2, 1^2\}$, i.e. given a partition with repeated entries, count the number of ...

asked by ZeroTheHero <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=52937> 7 votes

answered by kirma <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3056> 7 votes

What is the difference between a variable and a "slot variable"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222964>

Investigating `Function[]`, I found:

What is the difference between using a variable (in the case, u) and a "slot variable"? It seems anything can be done with both. Is there something that ...

asked by Billy Rubina <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=603> 7 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 9 votes

Efficiently populate sparse matrix with band structure

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222924>

I'm trying to efficiently populate elements of a very large ($2^{20} \times 2^{20}$) symmetric matrix with 1s - luckily the matrix is very sparse, < 0.1 the matrix has a very well defined ...

asked by KHAAAAAAAAAN <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=65587> 7 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 8 votes

2.25.2 Greatest hits from previous weeks

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Is there something like DensityPlot3D to visualize atomic orbitals?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=32378>

I'm visualizing some hydrogen like atomic orbitals. For looking at plane slices of the probability density, the DensityPlot function works well, and with something like:

```
Manipulate[
  DensityPlot[ ...
```

asked by Peeter Joot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10> 44 votes

answered by xslittlegrass <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1364> 24 votes

How to find integer solutions?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=42359>

Following is the equation:

Need to solve for integer values of x,y when a,b lies between -1000 and 1000 . Problem is to find the number of integer values of pair (x,y) that satisfy it.

asked by Sahil Sareen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12396> 2 votes

answered by bill s <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1783> 4 votes

How can I plot the direction field for a differential equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8841>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

asked by Matt Groff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1735> 29 votes

answered by Peter Breitfeld <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=307> 24 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 14 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 32 votes

How do I draw a pair of buttocks?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66538>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

asked by Simpleton Jack <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22399> 287 votes

answered by mikuszefski <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7608> 440 votes

Elegant operations on matrix rows and columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3069>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 177 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 60 votes

Finding Limits in several variables

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=21544>

Is there a way to find a limit of a multivariable function, like

$$\lim_{(x,y) \rightarrow (0,0)} f(x, y)$$

with Mathematica?

When f is continuous, we can use

$$\lim_{(x,y) \rightarrow (0,0)}$$

...

asked by Dominic Michaelis <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5899> 30 votes

answered by whuber <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=91> 41 votes

2.25.3 Can you answer these questions?

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How to plot a characteristic curve for silicon diode

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223212>

There is a figure given that shows the relation between Forward current(y axis) and forward Voltage (x axis) for a forward biased diode, with the given formula

asked by Haneen Hussam <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=73068> 1 vote

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 0 votes

GetProcessMemoryInfo

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223025>

The GetProcessMemoryInfo from psapi.dll is a helpful function that can be used to monitor the memory wolframkernel.exe used, where how much memory can be used and is actually used by wolframkernel is ...

asked by Frank <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8207> 1 vote

answered by Frank <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8207> 0 votes

Solving PDE IVP with inequalities in domains

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=223155>

I want to solve the following problem in Mathematica:

I used the following Mathematica code. I am unsure whether this is the correct way of entering the assumptions for the initial and boundary ...

asked by Leponzo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=60411> 1 vote

2.26 Thursday, May 28, 2020

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2.26.1 Top new questions this week

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PlusMinus definition unexpectedly affects plotting

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222380>

In version 10.1 I found a strange Plot behavior I did not anticipate. It seems that various heads including PlusMinus are treated as wrappers and stripped by Plot in a way that is not safe. This ...

asked by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 12 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 12 votes

Can someone boost even more my code?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222464>

UPDATE

As suggested by Roman, I've included here all my code.

I'm using just built-in function and compile to boost my code, but I think that it can be better. My code looks like

```
nof = 30;
...
```

asked by Magela <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68365> 11 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 19 votes

Why does NMaximize miss this global maximum?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222716>

I am having trouble maximizing a function which appears as a curvature of a planar curve.

$\{t_{\min}, t_{\max}\} = \{0, 2 \text{ Pi}\}$

$f = -((6-3 \text{ Cos}[t] - \text{Cos}[3 t])/((-11+6 \text{ Cos}[t] + 8 \text{ Cos}[2 t] - 6 \text{ Cos}[3 t] + \text{Cos}[4 t])$
...

asked by A. Kato <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=62063> 8 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 12 votes

How to break the x axis of a plot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222517>

I have the following data from which I get an interpolation:

$\text{SPE} = \text{Interpolation}[\{\{0, 4.08\}, \{0.5, 9\}, \{1.5, 12\}, \{5, 0.158\}, \{10, 0.158\}, \{15, 0.415\}, \{20, 0.802\}, \{30, 2.64\}, \{40, 4.99\}, \{60, \dots\}$

asked by mattiav27 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8822> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

How to pick consecutive numbers from list?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222407>

Question is very simple. If we have

```
tst = {2,3,4,6,7,9,11}
```

result must be

```
{{2,3,4}, {6,7}, {9}, {11}}
```

There are similar questions, but not exact.

My best solution is:

```
myFun[arr_] := ...
```

asked by lesobrod <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5950> 8 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 14 votes

Multiply each element of second position of two list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222548>

If I have two list such as:

```
list1 = {{40., 7.50551*10^-10}, {40.,7.50557*10^-10}, {40.,7.50566*10^-10},
         {40.0001, 7.50578*10^-10}, {40.0001, 7.50591*10^-10},{40.0001, 7.50607*10^-10},
         ...
```

asked by John <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72900> 7 votes

answered by David Keith <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=44700> 7 votes

Area/Volume of a 2D/3D object as it is filled up with water

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222837>

How could I get the volume of water on a region as it is filled up with water from below? Assume gravity points in some appropriate downward axis like y (or z in 3D) so the water fills upward from ...

asked by flinty <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72682> 6 votes

2.26.2 Greatest hits from previous weeks

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Plotting the frequency spectrum of a data series using Fourier

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18082>

```
testData = Table[N@Sin[500 x], {x, 0, 100}];
ListLinePlot[Abs[Fourier[testData]], PlotRange -> Full]
```

Gives me

Which I do not expect because the Fourier Transform is `FourierTransform[Sin[500 ...`

asked by C. E. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=731> 14 votes

answered by KennyColnago <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3246> 16 votes

Generate a Unit Circle Trigonometry

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2456>

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

asked by 500 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=172> 18 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36> 32 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

Formatting legend text font

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3433>

I am using this code to plot a graph, and I am trying to make the font of the legend bigger.

```
<<PlotLegends'
ListLogLogPlot[{Sort[moby]}, PlotRange -> Full, Joined -> True,
  ...
```

asked by Julia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=525> 20 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 25 votes

How do I clear all user defined symbols?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=850>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

asked by niklasfi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=82> 95 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 92 votes

How to calculate contour integrals with Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=34073>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

asked by user64494 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7152> 40 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 63 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta

function. When using this inside of a function or just the function ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

2.26.3 Can you answer these questions?

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Natural deduction with FindEquationalProof

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222577>

Out of curiosity, I'm trying to implement a natural deduction prover in Mathematica using FindEquationalProof. So far, I've implemented a few of the easier rules:

```
axioms = {
  ForAll[{A, B}, ...
```

asked by imas145 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61387> 1 vote

NDSolve very slow

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222571>

I am trying to run this code to get the output from NDSolve for 4 dynamical equations. However, I have two issues:

(1) It is taking a very long time (can reach several hours for a given instance) ...

asked by user135626 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19550> 2 votes

Change Font and Size of Print[] output

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222504>

I managed to create a definition for the "Print" style, following the instructions here. However, the result does not work in my v.12.1. On the plus side, a "Print" entry exists at the bottom of the ...

asked by Nicholas G <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=43662> 1 vote

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2.27.1 Top new questions this week

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How to add 'border' to Voronoi diagram	300
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How to extract all possible sub-products which match specific pattern?	301
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How to clear all definitions matching $f[1, \dots]$ but not $f[2, \dots]$?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222002>

I would like to clear all definitions of the form $f[1, \dots]$ in such a way that $f[2, \dots]$ remain unaffected.

The two methods I know to clear variables don't seem to apply to this situation:

Pattern

asked by WillG <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59634> 10 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 15 votes

Rescaling data to make a "continuous" function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222252>

I have acquired many sets of data, which all represent a single function, but which are randomly rescaled by a constant (due to the measurement specifics). I'm looking to effectively stitch them ...

asked by ChaSta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=48457> 9 votes

answered by aooiiii <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68990> 7 votes

Why does Mathematica ignore 1 as an exponent? Or as a coefficient?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221934>

Two different examples of same problem:

```
In: Cases[{f^2, g^3, k^p, h}, x_^n_ -> n]
```

```
Out: {2,3,p} # The result misses the exponen of h, '1'
```

The same problem in a different context:

asked by MaxB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66077> 8 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 11 votes

How to add 'border' to Voronoi diagram

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221984>

Suppose I have a set of points pts, from which I generate a Voronoi diagram VD:

```
pts = RandomReal[{-1, 1}, {100, 2}];
VD = Show[VoronoiMesh[pts], Graphics[{Red, Point[pts]}]]
```

Now, as per the ...

asked by TumbiSapichu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=53229> 7 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

Contracting indices in lists

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222037>

Using an answer to this question (Working with Dirac Gamma Matrices using FeynCalc - A simple problem), I defined

```
Clear[]
SetAttributes[, Listable]
[_] := If[ == 0, KroneckerProduct @@ ...
```

asked by FB20 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72314> 6 votes

answered by Chanto <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35091> 4 votes

How to extract all possible sub-products which match specific pattern?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222285>

I have an expression of the form

$$\text{expr} = 3*(a.b)*(c.d)*f[x] + 5*(m.n)*(p.q)*(r.s)*f[y]$$

and want to extract all possible subexpressions matching the pattern $((_).(_))*f[_]$.
Expected result (in ...

asked by Shadowray <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47416> 6 votes

answered by Marius Ladegård Meyer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22099> 7 votes

Raytracing using Regions & NSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222105>

I want to use geometric shapes in Mathematica to build complex shapes and use my raytracing algorithm on it. I have a working example where we can get the intersections from a combination of a Cone[] ...

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 6 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 5 votes

2.27.2 Greatest hits from previous weeks

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Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 197 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 255 votes

Figuring when the minute and hour hand coincide on a clock

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=573>

I would like to list all possible times in a 12-hour period, where the hour hand overlaps the minute hand completely. This is really a question about three distinct things - to be done in Mathematica ...

asked by Steve D <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=191> 15 votes

answered by Verbeia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8> 21 votes

How to perform a multi-peak fitting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26336>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3).

asked by Everett You <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1389> 54 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 54 votes

Using `Export[]` sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the `Export` command to convert a list of plots into a `*.gif` file, and the command runs and executes well, but I can't find the file! Where is it supposed to go? Did it even work?

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 49 votes

Can Mathematica do symbolic linear algebra?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3242>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, `Simplify[Transpose[Transpose[A].Transpose[B]]]`" and Mathematica would simplify it to $B.A$?

asked by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 61 votes

Assign the results from a Solve to variable(s)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=6669>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

asked by stevenvh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1450> 52 votes

answered by Artes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=184> 33 votes

Creating a table/Matrix during a For loop

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=2930>

I have a For loop (with i as a counter), which calculates different values (y_1, y_2, y_3, \dots) as a function of the variable x . How can I create a table/matrix which contains i lines, each line ...

asked by Solarboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=727> 10 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 14 votes

2.27.3 Can you answer these questions?

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Computations with `OptimizedExpressions` without completely expanding them

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221938>

I have to manipulate huge expressions that are rational functions of many (30) variables with integer coefficients. Storing them just as a ratio of two polynomials would be impractical. But they can ...

asked by Vladimir Reshetnikov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7288> 2 votes

`LeviCivitaTensor` contraction indices

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=222179>

apparently my computer has problems when I try to perform a calculation with `TensorContract`.

In particular, with the second answer to my previous question `Contracting` indices in lists, I want to ...

asked by FB20 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72314> 1 vote

Using `Fold[` or `Map[` Better?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221941>

I'm working through `MMA Cookbook` by Mangano, page 54. He shows `Map` is a compact form of `Fold` function. Is using `Fold` function important?

```
myMap3[f_, l_] := Fold[Prepend[#1, f[#2]]&, {}, l]
```

asked by code9910743 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=59860> 2 votes

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2.28.1 Top new questions this week

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What causes Module variables to leak?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221436>

Sometimes, after writing code like

```
f[] := Module[{a}, ...]
```

and running f[] multiple times, there will be many Temporary symbols of the form a\$123 in the Global namespace. Sometimes this happens ...

asked by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 25 votes

answered by Leonid Shifrin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=81> 22 votes

Looping through all functions defined in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221555>

Is there a way to loop through all the Functions (Elementary and Special functions) that exist in Mathematica?

I want to construct a table of some identities and maybe I can discover something ...

asked by Micha Kuczynski <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72609> 12 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 13 votes

Solver for COVID-19 epidemic model with the Caputo fractional derivatives

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221609>

As it is known in biological system with memory it would be suitable to use fractional derivatives to describe evolution of the system. In a current version of Mathematica 12.1 there is no special ...

asked by Alex Trounev <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58388> 10 votes

Possible bug in finite sum over inverse squares $\sum_{i=1}^n \frac{1}{(x(n-i)+i)^2}$

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221373>

Revisiting the problem Limit of partial sums involving inverse squares I found another difficulty with `Sum[]`

Consider this sum

```
s[x_, n_] := Sum[ 1/(i + (n - i) x)^2, {i, 1, n}]
```

Here we assume `x` ...

asked by Dr. Wolfgang Hintze <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16361> 10 votes

answered by Soner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49198> 13 votes

Removing banal words from a list

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221540>

NB: I am aware of the DeleteStopwords symbol.

I want to remove from a list of words the ones that are likely to be more banal. So for instance if we have

```
{"exegesis", "mystification", "bread", ...
```

asked by Diffycue <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46327> 9 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13> 10 votes

How to reproduce Wolfram Language's base64 encoded string with command-line tool?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221381>

With Wolfram Language:

```
In[7]:= ExportString["foobar", "Base64"]
```

```
Out[7]= "Zm9vYmFyXDo0ZTJkXDo2NTg3"
```

With the closest command-line software I could think of

```
echo -n 'foobar' | openssl base64 ...
```

asked by qazwsx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=357> 9 votes

answered by Jason B. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9490> 17 votes

Does the following change to MKL environment variable boost Mathematica speed on AMD CPUs

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221767>

I personally do not have an AMD CPU but since they are literally becoming quite hot these days, I thought whether the following fix (as proposed here: ...

asked by Ali Hashmi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27331> 7 votes

answered by ilian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=145> 9 votes

2.28.2 Greatest hits from previous weeks

- Multivariable Taylor expansion does not work as expected . . . 309
- How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica? 310
- How to create effect like Van Gogh’s stroke brush? 310
- How to perform a multi-peak fitting? 310
- What are the most common pitfalls awaiting new users? 311
- How to find integer solutions? 311
- LaTeX and Mathematica 311

Multivariable Taylor expansion does not work as expected

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=15023>

The basic multivariable Taylor expansion formula around a point is as follows:

\$\$

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla) f(\mathbf{r}) + \frac{1}{2} (\mathbf{a} \cdot \nabla)^2 f(\mathbf{r}) + \dots$$

asked by matheorem <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4742> 55 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 61 votes

How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8895>

I am seeking a convenient and effective way to calculate such geometric quantities. I've used packages like TensoriaCalc, but they don't work at all time. Sometimes, I run into the following error:

asked by Zoe Rowa <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1713> 36 votes

answered by Yi-Zen Chu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4869> 17 votes

How to create effect like Van Gogh's stroke brush?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39003>

I need to apply Van Gogh's stroke brush effect to a random image

Take the following image as an example:

Thank you so much if you could help!

asked by user10495 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10495> 33 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 51 votes

How to perform a multi-peak fitting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=26336>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3).

The ...

asked by Everett You <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1389> 54 votes

answered by Silvia <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=17> 54 votes

What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 460 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 277 votes

How to find integer solutions?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=42359>

Following is the equation:

Need to solve for integer values of x,y when a,b lies between -1000 and 1000 . Problem is to find the number of integer values of pair (x,y) that satisfy it.

asked by Sahil Sareen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12396> 2 votes

answered by bill s <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1783> 4 votes

L^AT_EX and Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=736>

I quite often would like to draw graphics in my L^AT_EX documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

asked by Thomas Rot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=227> 124 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 45 votes

2.28.3 Can you answer these questions?

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Construct a binary tree where nodes are labeled according to given rule

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221405>

I want to plot a binary tree in Mathematica where the nodes are labeled according to a given rule. In fact, whether a node has a left child or a right child or both, will be determined by a rule. And ...

asked by Mwen Rele <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72568> 1 vote

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=120> 0 votes

How to get proper TeX output from splicing the following file?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221414>

In order to let other users with Mathematica 12.x test this problem for me, I now use FileTemplate instead of Splice.

I want to splice (with FileTemplate) the following file that has been simplified ...

asked by Money Oriented Programmer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42141> 1 vote

Application of spatially varying boundary conditions and source term in AceFEM

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221489>

I am trying to model a simple 2D steady state heat conduction problem using automatically generated Q2 elements.

The problem consists of a square domain with prescribed temperatures along the bottom ...

asked by DvanHuyssteen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69831> 1 vote

2.29 Thursday, May 7, 2020

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2.29.1 Top new questions this week

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‘Count‘ for ‘SparseArray‘

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221160>

Why does Count not work with SparseArrays, and is there any function I can use to replace it?

What would be an efficient workaround?

Example:

```
a=ConstantArray[0,{10},SparseArray];
Count[a,0] (* ...
```

asked by Daniel <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19534> 9 votes

answered by thorimur <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=63584> 8 votes

What is the best and most efficient way to curry?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=220972>

Suppose I have a function with a signature like `g[expr, _(f), {1}, Heads -> False]` and I want to access it as an operator by giving the first argument last. I see there are various ways of doing ...

asked by user13892 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13892> 9 votes

Mathematica and Excel

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221155>

I have a number of large data sets in Excel and .dat from OMEdit Modelica that then need to import some or all of it to Mathematica for manipulation and plotting. Importing the data is easy enough ...

asked by Chris B <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=58764> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 10 votes

Local variables in sums and tables - best practices?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221079>

Stumbled on Local variables when defining function in Mathematica in math.SE and decided to ask it here. Apologies if it is a duplicate - the only really relevant question with a detailed answer I ...

asked by <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=35000> 8 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 5 votes

How can I make Mathematica solve this set of four equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221082>

I use Mathematica version 12.1 on Windows 10.

I have four equations in four unknowns.

Is there a trick to make Mathematica solve these?

I tried Solve and NSolve and it is not able to do it. ...

asked by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 8 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5> 7 votes

obtain properly formatted code from autogenerated package

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=220842>

Overview: I have written a few mathematica packages, always using the method of writing my code in a mathematica notebook and letting mathematica autogenerate the .m package file. Currently I do not ...

asked by Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5033> 8 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 6 votes

Why is StreamPlot plotting direction like this?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221255>

I am doing a StreamPlot and something seems wrong with the output.

```
StreamPlot[{0, -(y - x)^3}, {x, -3, 3}, {y, -3, 3}]
```

The plot is attached and I highlighted the issue in red

Shouldn't the ...

asked by Moo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36141> 7 votes

answered by user2432923 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61643> 5 votes

2.29.2 Greatest hits from previous weeks

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My Girlfriend is going to prison...Save her with Math

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=135937>

Salacious title, but true story.

```
dmethyl1 = {
  {0, 0},
  {.25, 1},
  {.5, 7},
  {1, 26},
  {1.5, 40},
  {2, 45},
  {2.5, 45},
  {3, 44},
  {3.5, 44},
  {4, ...
```

asked by Prisoners Dilema <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46025> 42 votes

answered by bobthechemist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7167> 23 votes

Calculate the 2D Fourier transform of an Image

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=29203>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

asked by user8727 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8727> 14 votes

answered by Nasser <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70> 32 votes

Help find a bright object on Mars!

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=11819>

In today's news, scientists found a bright object on one of Curiosity's photos (it's near the bottom of the picture below). It's a bit tricky to find - I actually spent quite some time staring at the ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 197 votes

answered by Niki Estner <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=242> 255 votes

Are you interested in purchasing David Wagner's "Power programming with Mathematica"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16485>

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

asked by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 158 votes

answered by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 232 votes

Even Fibonacci numbers

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=37266>

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

asked by xyz <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9627> 34 votes

answered by rcollyer <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=52> 46 votes

What does # mean in Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19035>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

$$x = \text{Root}[\#1^8 c^4 - 8 \#1^7 c^4 + 28 \#1^6 c^4 - 56 \#1^5 c^4 + 70 \#1^4 c^4 - 56 \#1^3 c^4 + 28 \#1^2 c^4 - 8 \#1 c^4 + c^4, \#1]$$

asked by rononymous <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5730> 37 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 63 votes

How to ask Mathematica to imitate Andy Warhol's pop-art painting?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=59132>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

asked by Putterboy <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=16069> 50 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 65 votes

2.29.3 Can you answer these questions?

How to specify AxesOrigin for DateListPlot?	319
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How to specify AxesOrigin for DateListPlot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221222>

I would like to generate a plot with the y axis on the graph. In a "normal" numeric plot I do this using the AxesOrigin option. How to I specify the crossing point in a DateListPlot?

Here's the MWE ...

asked by jmm <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57731> 1 vote

How to create a seek bar with Slider

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=221284>

I am trying to create a simple audio player but I am stuck at designing the seek bar. I am using the AudioStream framework.

After loading music in a variable stream, I can access its position using ...

asked by Sâu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=67944> 1 vote

How can I get a plot of "surface area coverage" of a parametric plot?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=220846>

I have a parametric function defined by the x and y functions:

$$x = r*\text{Cos}[w_0*t - w_L*t] + z*\text{Cos}[w_P*t - w_L*t]$$

$$y = r*\text{Sin}[w_0*t - w_L*t] + z*\text{Sin}[w_P*t - w_L*t]$$

I can change the variables ...

asked by Cameron_3298 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72418> 1 vote

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 0 votes

2.30 Thursday, April 23, 2020**2.30.1 Top new questions this week**

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Implicit Riccati Equation Solver (to find the anti-stabilizing solution	323
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Wrong function of NotebookDirectory[] in the 12.1 version

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219700>

Bug introduced in 12.1.0

Could anybody help?

NotebookDirectory[] function began working wrong in 12.1 (the bug was not present in 12.0 and earlier versions).

When folder name includes Russian ...

asked by Alexander <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72011> 13 votes

answered by ilian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=145> 10 votes

How complete is the WL's string language?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=220003>

Consider the following example:

Suppose I am interested in words that contain all the letter of the list characters={"e","t","l","a","b"} at least once. An example would be the word "abilities" or a ...

asked by user13892 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13892> 12 votes

answered by Jason B. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9490> 11 votes

Reusing PARDISO symbolic factorization

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219687>

Is there a way to do this natively in Mathematica? I read in several places that this is possible with LibraryLink, but I don't have a lot of experience with C and so I'm having trouble implementing ...

asked by beets <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=72007> 8 votes

answered by Henrik Schumacher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38178> 13 votes

How to Improve FEM Solution with NDSolve?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219990>

First some comments. This same calculation works beautifully in 2D with essentially the same code. I have copied it largely unaltered into 3D as part of a migration to 3D so that I can do more complex ...

asked by Paul Harrison <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=69377> 7 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 8 votes

What is the difference between Wolfram Script and Wolfram Engine?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219963>

I don't understand the difference between these products:

Wolfram Script

Wolfram Engine

Would someone help me understand what these are? And how it differs from just using Mathematica in the ...

asked by QuantumDot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2048> 6 votes

answered by morbo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=48686> 0 votes

Implicit Riccati Equation Solver (to find the anti-stabilizing solution)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219758>

I've found that the latest MATLAB `icare()` solver includes the possibility to find also the anti-stabilizing solution of the Riccati equation. I haven't found a similar option on Mathematica. Is there ...

asked by Mirko Aveta <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36621> 6 votes

answered by Suba Thomas <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5998> 5 votes

Dates not printed in DateListPlot

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=220154>

A simple example

```
Clear["Global`*"];
```

```
data = TimeSeries[{1, 2, 1, 3, 0, 0, 0, 2, 21, 15, 21, 7, 11, 5, 10,
  18, 73, 38, 103, 21, 35, 31, 46, 31, 35, 94, 71, 48, 78, 71, 74,
  95, 95, 56, ...
```

asked by Vaggelis_Z <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5052> 5 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 1 vote

2.30.2 Greatest hits from previous weeks

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Mathematica code for Bifurcation Diagram

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=13277>

At the moment I am trying to construct a bifurcation diagram of the iterative function $f(x) = ax - 1.1975x^3$. I've scoured the internet for pre-made bifurcation diagrams and found many (mostly of the ...

asked by Mel <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3249> 26 votes

answered by Mark McClure <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=3645> 45 votes

Drawing a square root spiral

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66969>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[1], Sin[1]} & [Pi - (ArcCot[1])]},
  Polygon @ {{0, ...
```

asked by matrix89 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=5379> 24 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 21 votes

How do I draw a pair of buttocks?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66538>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

asked by Simpleton Jack <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22399> 287 votes

answered by mikuszefski <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7608> 440 votes

How can I improve Mathematica's resolution on a macbook retina display?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18419>

Mathematica 9.0 looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

asked by Tom Wellington <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2437> 43 votes

answered by canadian_historian <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1920> 20 votes

Using Export[] sends the file where?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8586>

I am trying to use the Export command to convert a list of plots into a *.gif file, and the command runs and executes well, but I can't find the file! Where is it supposed to go? Did it even work?

asked by Patrick Da Silva <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1785> 37 votes

answered by Vitaliy Kaurov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1349> 49 votes

How to create effect like Van Gogh's stroke brush?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=39003>

I need to apply Van Gogh's stroke brush effect to a random image

Take the following image as an example:

Thank you so much if you could help!

asked by user10495 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=10495> 33 votes

answered by Simon Woods <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=862> 51 votes

Elegant operations on matrix rows and columns

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3069> Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

asked by sjdh <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=515> 177 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 60 votes

2.30.3 Can you answer these questions?

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Can one use .wls (script) files in a simple way, like Matlab scripts?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219919>

I have been fighting unsuccessfully with the intricacies of creating Mathematica packages (Private, scopes , context) for a long time. I just need a simple version of Matlab scripts, to be able to ...

asked by florin <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=54979> 1 vote

Introduction to Probability

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219883>

Is there any newer book or online resource that would be good introductory text to probability with Mathematica? I have Introduction to Probability with Mathematica by Hastings but it is over 10 years ...

asked by grga <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70392> 1 vote

Do palettes limit the execution time of a user-defined function?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219973>

I have defined a function `ConvertToMarkdown` that does some long processing of a notebook: converts it to markdown, save inputs/outputs as images, generates a word cloud etc., that can take multiple ...

asked by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 1 vote

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2.31.1 Top new questions this week

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Raytracing; why so slow?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219629>

I'm trying to get some rays to bounce in a circle. But I want to be able to control the reflections, i.e. the direction the rays bounce in the circle. I have a MWE below, and it is severely limited by ...

asked by Tomi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=36939> 10 votes

answered by MassDefect <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42264> 18 votes

How use the black mode permanently

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219317>

Now I can use this function `ResourceFunction["DarkMode"][]` to use the dark mode, but when I turn on Mathematica again, the black mode will not work. How can I set to use the black mode permanently.

asked by <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71882> 9 votes

answered by M.R. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=403> 5 votes

DeleteCases depending on all elements

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219412>

I have a listed of Tupels

```
list = {{10, 5}, {20, 4}, {20, 3}, {10, 6}};
```

If there are two elements a and b for which

```
a[[1]] <= b[[1]] && a[[2]] <= b[[2]]
```

then I would like to delete ...

asked by fravity <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22275> 8 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 7 votes

subsubsection Mathematica is unable to compute the derivative of the function $\frac{\sin^2(x)}{x}$
<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219273>

Consider the function

$$f : \mathbb{R} \rightarrow \mathbb{R}, x \mapsto \begin{cases} \frac{\sin^2(x)}{x}, & x \neq 0, \\ 0, & x = 0. \end{cases}$$

It is clear that $f \in \mathcal{C}^1(\mathbb{R})$ and that

asked by Maximilian Janisch <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=68670> 8 votes

answered by Bob Hanlon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=9362> 12 votes

How to download "Epidemic Data for Novel Coronavirus COVID-19"

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219282>

I am using Mathematica and I would like to download the dataset "Epidemic Data for Novel Coronavirus COVID-19" for basic investigation from Wolfram homepage. Can anyone give me some instructions or ...

asked by Johann Riedler <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71867> 7 votes

answered by morbo <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=48686> 6 votes

NIntegrate vs quadGK in Julia

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219198>

I am trying to understand the numerical integration routine by using as a benchmark the function

```
f[x_] := -x^2 + x^4
```

used to define the following function

```
g[z_] := NIntegrate[1/Sqrt[-f[x]], {x, z, ...
```

asked by Smerdjakov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=55615> 7 votes

answered by MassDefect <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42264> 7 votes

Overflow with NDSolve

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219593>

Backslide introduced in 10.0, persisting through 12.1.

I am trying to solve the following differential equation and plot the result:

```
ClearAll["Global`*"]
rin = 10^-30;
sol = NDSolve[{Sqrt[x] ...
```

asked by mattiav27 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=8822> 6 votes

answered by xzczd <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1871> 2 votes

2.31.2 Greatest hits from previous weeks

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What are the most common pitfalls awaiting new users?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18393>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

asked by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 459 votes

answered by Michael E2 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=4999> 277 votes

How to find the position of elements in a list satisfying criteria

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=180>

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements that are greater than 7.

`Select[x, #>7&]` gives the elements themselves, and `Position[x,8]` gives the ...

asked by PeterR <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=140> 62 votes

answered by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 60 votes

How do I draw a pair of buttocks?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=66538>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

asked by Simpleton Jack <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22399> 287 votes

answered by mikuszefski <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7608> 440 votes

How can I plot a graph of an integral?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=78451>

I want to plot the following function:

$$\int \left(\frac{\Gamma(x+1)}{2} - \frac{\Gamma(x-1)}{2} \right) dx$$

asked by Anixx <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=651> 3 votes

answered by k_v <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=24727> 8 votes

Make a scatter plot from two lists

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=21884>

I have two lists of values

```
xx = {0.1, 0.3, 0.35, 0.57, 0.88, 1.0}
yy = {1.2, 3.5, 4.5, 7.8, 9.0, 12.2}
```

I want to make a scatter plot (list plot) with xx as x axis and yy as y axis. The help ...
asked by Patrick Li <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2403> 27 votes

answered by Eric Thewalt <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6313> 38 votes

Are you interested in purchasing David Wagner's "Power programming with Mathematica"?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=16485>

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

asked by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 158 votes

answered by Todd Allen <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=249> 232 votes

Extract real part of a complex expression better than Re does

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3306>

I have a complex expression with real positive variables only.

Mathematica Input Style:

```
PP = -(( ( Cosh[y1 ] + Sinh[y1 ] )(- Cosh[(-L + y2) ] + Sinh[(-L + y2) ]))
  / (s (2 Cosh[L] ...
```

asked by max <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=796> 31 votes

answered by nixeagle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=814> 50 votes

2.31.3 Can you answer these questions?

With a Large output, clicking Show all or Show more freezes

Mathematica	333
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Best parameter for smoothing splines	333

With a Large output, clicking Show all or Show more freezes Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219430>

Running the following code takes about 30 min on my laptop (everything before the Reduce is instant) and produces a Large output that Mathematica does not display, only shows buttons Show more, Show ...

asked by Sander Heinsalu <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=6211> 1 vote

MathMF Error, Can't Import Video

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219195>

I am getting this error HELP...

asked by Ajit Yadav <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71840> 1 vote

Best parameter for smoothing splines

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219616>

I am trying to implement a module to determine the best value for the smoothing parameter of a smoothing spline interpolation of a given dataset. To calculate the cross-validation score of a given ...

asked by Daniele Binosi <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=25023> 1 vote

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2.32.1 Top new questions this week

Adding Regularisation to Built-in Interpolation function 334
 How to model diffusion through a membrane? 334
 How to draw a "proper" tree diagram 335
 How can I list all tech note pages? 335
 Generating long binary lists fast? 336
 Control grain size of stipple shading 336
 Extracting COVID AdministrativeDivision data from Wolfram
 Resource 336

Adding Regularisation to Built-in Interpolation function

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218764>

tl;tr; How to improve performance of regularised Interpolation?

Context

Since Version 12, Mathematica now incorporates a range of (underrated IMHO) regularisation methods to Fit and FindFit.

asked by chris <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1089> 17 votes

answered by chris <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1089> 7 votes

How to model diffusion through a membrane?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218983>

This is a follow-up on How to handle discontinuity in diffusion coefficient?

Consider diffusion of $u(t, x)$ on the domain $x \in [0, 2]$ with some simple boundary conditions such as $u(0) = 2, u(2) =$

asked by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 13 votes

answered by Tim Laska <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=61809> 7 votes

How to draw a "proper" tree diagram

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218859>

```
TreePlot[{
  {0 -> "Mr 1", 1/10},
  {0 -> "Mr 2", 2/10},
  {0 -> "Mr 3", 3/10},
  {0 -> "Mr 4", 4/10},
  {"Mr 1" -> "A1", 2/10 },
  {"Mr 1" -> "B1", 1/10 },
  {"Mr 1" ...
```

asked by CasperYC <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=62701> 13 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 18 votes

How can I list all tech note pages?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219033>

It seems since v12.1 a new doc type, tech note, is included in the documentation.

However, I cannot find an index page for the tech notes. So how can I list all such tech note pages?

asked by sunt05 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=260> 10 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 11 votes

Generating long binary lists fast?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219115>

Given list L consisting only of 0's and 1's, we read L backwards and construct a new list O such that: (we start with $O = \{1\}$ and then apply the two rules:)

if we encounter n ...

asked by Vepir <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=49840> 9 votes

answered by Victor K. <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1351> 5 votes

Control grain size of stipple shading

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219020>

Mathematica 12.1 introduced a number of amazing shaders such as `StippleShading`.

Is there a way to control the grain size of `StippleShading`?

On a standard resolution screen it looks like this:

asked by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 9 votes

Extracting COVID AdministrativeDivision data from Wolfram Resource

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218833>

Wolfram makes the COVID-19 case data available in a form that is conveniently formatted for processing in Mathematica.

It can be accessed using:

```
data2 = ResourceData[ResourceUpdate["Epidemic Data ...
```

asked by theorist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=45215> 9 votes

answered by LouisB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=22158> 7 votes

2.32.2 Greatest hits from previous weeks

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How can I plot the direction field for a differential equation? . .	338
Mathematica command that allows it to read my intentions . .	338
Parallel and perpendicular symbol from Mathematica to LaTeX	339
Is there any algorithm that runs faster in Mathematica than in C or Fortran?	339

How to make Jacobian automatically in Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=5790>

If we have two vectors, a and b , how can I make Jacobian matrix automatically in Mathematica?

```


$$a = \left( \begin{array}{c} x_1^3 + 2x_2^2 \\ 3x_1^4 + 7x_2 \end{array} \right); b = \left( \right)$$


```

asked by George Mills <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1012> 37 votes

answered by Jens <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=245> 49 votes

\LaTeX and Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=736>

I quite often would like to draw graphics in my \LaTeX documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

asked by Thomas Rot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=227> 124 votes answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 45 votes

Where can I find examples of good Mathematica programming practice?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=18>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

asked by J. M.'s technical difficulties <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=50> 536 votes

answered by faysou <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66> 473 votes

How can I plot the direction field for a differential equation?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=8841>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

asked by Matt Groff <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=1735> 29 votes

answered by Peter Breitfeld <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=307> 24 votes

Mathematica command that allows it to read my intentions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=194384>

In version 2.0 of Mathematica there was a command, `ReadProgrammerIntentions[]` which allowed it rapidly compose code that could solve problems simple to complex, based on my requirements. Understand ...

asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 52 votes

answered by MarcoB <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=27951> 38 votes

Parallel and perpendicular symbol from Mathematica to LaTeX

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=46538>

I want to get the following expression from Mathematica to LaTeX:

$$\begin{bmatrix} E_{\parallel} \\ E_{\perp} \end{bmatrix}$$

I have tried to use inbuilt 'symbol' character from the special ...

asked by Steve Hatcher <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=13314> 18 votes

answered by Sjoerd C. de Vries <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=57> 25 votes

Is there any algorithm that runs faster in Mathematica than in C or Fortran?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=208045>

I'm just curious. My friend just told me that Mathematica is mostly for symbolic calculation and not efficient for Numerical computations. He told me that's the reason most of the people don't use ...

asked by Gummala Navneeth <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=66938> 44 votes

answered by Szabolcs <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12> 73 votes

2.32.3 Can you answer these questions?

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How can i use Butterworth filter written in matlab to Mathematica	341

How can I modify the code to speed up the 'Do'?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219057>

I need to use the following code to do some calculations. But the running speed of this code is too slow. How can I modify this code to improve the running speed?

```

Cb = 0.5;
Ch = 5./7;
= ...

```

asked by Please Correct GrammarMistakes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 1 vote

Need help with Limit (DirectedInfinity)

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=219035>

I tried to compute the following limit:

```

Limit[Series[
  1/(1/x^2) (Sin[y x]/(x^4))^2 - Sin[y x]/y(x^3) + 1/x^2, {x, 0, 5}],
x -> 0, Assumptions -> {y > 0}]

```

the output :

asked by Johe <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71663> 1 vote

How can i use Butterworth filter written in matlab to Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218701>

i need help to convert this code written in matlab about Butterworth filter:

```
%remove high-frequency components by 0.5-h butterworth filter;
n =2;
Wn =[1/30/0.5]; %30-min low-pass filter (LPF)%
```

asked by Iman Khaki <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71671> 1 vote

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2.33.1 Top new questions this week

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 Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W 346

How to determine if two mutable data structures are the same?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218535>

How can I determine if two mutable data structures (DataStructure) are truly the same? I do not mean checking if they have the same value. I mean checking if they are the same data structure, i.e. ...

asked by Szabolcs (<https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=12>) 15 votes

answered by ilian (<https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=145>) 14 votes

Is there official documentation for official documentation and getting help system of Mathematica?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217230>

Mathematica has very high quality and extensive documentation and good getting help system (? Solve as an example; there maybe are more too). Is there all including official documentation about ...

asked by vasil111 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=11639> 14 votes

answered by WReach <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=142> 11 votes

Mottled appearance of ContourPlot3D with transparency

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217226>

I'm trying to make a ContourPlot3D that needs to be transparent. With transparency, however, something odd happens.

With PerformanceGoal->"Speed", the colors look fine.

With ...

asked by Peter Todd Williams <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70508> 11 votes

answered by kglr <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=125> 9 votes

Dividing by Zero - Unexpected Result

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218539>

When I divide this number by zero I get this for an answer.

```
ans = 2345900/0
```

What is surprising is that in taking the square root, Mathematica seems to map the entire question asked by MikeY <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=47314> 9 votes

How can I plot a parametric equation with \acute{s} ?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217227>

I want to draw a parametric equation with \acute{s} like the figure below:

But I don't get the result I want when I run the following code. What can I do to get

```
ParametricPlot[{x,  $\acute{s}x^2$ }, {x, 0, 1},
  ...
```

asked by Please Correct GrammarMistakes <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=42417> 9 votes

answered by Mr.Wizard <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=121> 16 votes

Mathematica numerical "error" for simple multiplication?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217205>

```
In[71]:= 0.6*0.8048780487804877'
```

```
Out[71]= 0.482927
```

```
In[72]:= 0.3*0.8414634146341463'
```

```
Out[72]= 0.252439
```

```
In[74] := (0.6*0.8048780487804877') + 0.3*0.8414634146341463'
```

```
Out[74]= 0.735366
```

asked by htam_ujn <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=70502> 9 votes

answered by m0nhawk <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2342> 8 votes

Why can't I use `Inactive[D]` in `NDSolve`?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217169>

I have a 2D rectangular domain with $-L/2 < x < L/2$ and $0 < y < D0$, which is divided in two with a sinusoidal curve $y == 1 + \text{Cos}[2 \text{ Pi } x/L]$ separating the two.

I want to solve ...

asked by Physicist <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=41581> 8 votes

answered by user21 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=18437> 8 votes

LaTeX and Mathematica

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=736>

I quite often would like to draw graphics in my $\text{L}^{\text{T}}\text{E}^{\text{X}}$ documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

asked by Thomas Rot <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=227> 124 votes

answered by Simon <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34> 45 votes

How to make a spiroglyphic?]

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=188139>

Some (older) members of this group might remember playing vinyl LP records. Recently, at the Abbey Road studio there was a spiroglyphics coloring book for sale. It looks like a nice programming ...

asked by TheDoctor <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=2263> 13 votes

answered by b3m2a1 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=38205> 18 votes

How to graph a sphere with cartesian equations?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=24169>

I'm new to Mathematica and I need to ask how to graph a sphere, cylinder, etc.. using cartesian equations.

For example in sphere's case $x^2 + y^2 + z^2 = 1$

I tried to use Plot3D but it doesn't ...

asked by German <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=7145> 7 votes

answered by Dr. belisarius <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=193> 13 votes

Mathematica Minecraft

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=19669>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

asked by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 163 votes

answered by faleichik <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=219> 232 votes

Code that generates a mandala

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=136974>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

asked by zeros <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=26849> 69 votes

answered by Anton Antonov <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34008> 93 votes

Calling Correct Function for Plotting DiracDelta

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=3506>

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta[] function. When using this inside of a function or just the function ...

asked by night owl <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=116> 17 votes

answered by Heike <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=46> 19 votes

Solving $L = \frac{3}{2}\sqrt{4\pi^2 A^2 + W^2} - \frac{\sqrt{5W\sqrt{4\pi^2 A^2 + W^2} + 6\pi^2 A^2 + 3W^2}}{\sqrt{2}} + \frac{3W}{2}$ for W

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=57763>

When I solve the aforementioned equation for W or A on Mathematica I get a long and ugly equation in return, namely one of the solutions for W is: (attempt to read at your own health)

asked by J.D'Almbert (<https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19257>) 8 votes

answered by Alexei Boulbitch (<https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=788>) 13 votes

2.33.2 Can you answer these questions?

UnitSimplify rules?	347
How to delete random elements with RandomChoice?	347
settings elements of matrix of functions	347

UnitSimplify rules?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=217164>

Code as following:

```
In[1]:= constants = Quantity /@ {"PlanckConstant", "BoltzmannConstant", "MolarGasConstant"}
Print[UnitSimplify[
  UnitConvert[Quantity["AvogadroNumber"]*constants[[2]]] // N];
```

asked by (<https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=19360>) 1 vote

How to delete random elements with RandomChoice?

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218431>

I have a list of prices and a list of dates, but I have 154 more prices than dates. So I want to delete random prices to match both lists, however, every time I run the block of code I get a different ...

asked by trashparticle <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=71573> 1 vote

settings elements of matrix of functions

<https://mathematica.stackexchange.com/landing/r/digest?cta=question&id=218297>

I have a work flow that involves initially specifying a matrix function (or a matrix of functions), e.g.

```
f[x_] := {{Exp[x], Sin[x]}, {Cos[x], Log[x]}}
```

This works well for what I am using it for. I can ...

asked by user3353819 <https://mathematica.stackexchange.com/landing/r/digest?cta=user&id=34650> 1 vote

CHAPTER 3

YEAR 2018

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3.1 Tuesday, January 16, 2018

3.1.1	Top new questions this week	349
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3.1.1 Top new questions this week

How can I access NASA images and APIs?	350
Access last variable in a pure function?	350
Ordered RandomSample	350
Possible bug in Refresh[x, None] on the very first x = val	351
How to launch a separate Java VM on each sub-Kernel?	351
Three differential equations	351
How can I create an enumeration variable by groups?	352

How can I access NASA images and APIs?

<https://mathematica.stackexchange.com/questions/163638/how-can-i-access-nasa-images-and-apis>

I ♥ NASA. You ♥ NASA. We all ♥ NASA.

So how can I use the images and things they expose in their APIs in Mathematica?

- asked by b3m2a1 (23 votes), answered by b3m2a1 (29 votes)

Access last variable in a pure function?

<https://mathematica.stackexchange.com/questions/163469/access-last-variable-in-a-pure-function>

is the first argument of a pure function, #n the nth, ## are all variables and ##n all beginning with the nth variable.

Now, I would like to access the last argument. In a list, this would be ...

- asked by riddleculous (13 votes), answered by Henrik Schumacher (14 votes)

Ordered RandomSample

<https://mathematica.stackexchange.com/questions/163498/ordered-randomsample>

This feels like a basic question yet I failed to find an answer.

```
(*arbitrary list of unique elements, does not need to be sorted*)  
list = CharacterRange["a", "h"];  
n = 5;
```

```
RandomSample[ list, n]
```

asked by Kuba (11 votes), answered by Coolwater (13 votes)

Possible bug in Refresh[x, None] on the very first x = val

<https://mathematica.stackexchange.com/questions/163559/possible-bug-in-refreshx-none-on-the-very-first-x-val>

Bug introduced in 8 or earlier and persisting through 11.2.0

>From Refresh docs:

Refresh[expr,None] specifies that the value of expr should never automatically be refreshed.

ClearAll[z]

...

asked by Kuba (8 votes)

How to launch a separate Java VM on each sub-Kernel?

<https://mathematica.stackexchange.com/questions/163387/how-to-launch-a-separate-java-vm-on-each-sub-kernel>

I have some code that process very large flat files in to separate HSQL(Standalone) databases using ParallelSubmit and JDBC for each file using the strategy in this post (19542). Lately I keep ...

asked by Edmund (8 votes), answered by Edmund (5 votes)

Three differential equations

<https://mathematica.stackexchange.com/questions/163566/three-differential-equations>

I have the next figure with inflow and outflow rates:

And I need to calculate the time for which the pollution will be 50% from the initial value. Assuming that all lakes have the same pollution ...

asked by Darius Ionut (8 votes), answered by Henrik Schumacher (8 votes)

How can I create an enumeration variable by groups?

<https://mathematica.stackexchange.com/questions/163764/how-can-i-create-an-enumeration-variable-by-groups>

I copied the title and concept for this question from here. I have

```
data = {"ID", "Value"}, {1, 48}, {1, 45}, {1, 52}, {1, 43}, {1,
      41}, {2, 50}, {2, 42}, {2, 51}, {2, 52}, {bb, 52}, {bb, 54}, ...
```

asked by ramesh (7 votes), answered by kglr (8 votes)

3.1.2 Greatest hits from previous weeks

Labeling individual curves in Mathematica 352

Where can I find examples of good Mathematica programming
practice? 352

Labeling individual curves in Mathematica

<https://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

asked by Tianxiang Xiong (53 votes), answered by Artes (41 votes)

Where can I find examples of good Mathematica programming practice?

<https://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

asked by J. M. (483 votes), answered by faysou (430 votes)

3.1.3 Can you answer these?

Why BoundingRegion does not work well?	353
Are integrals with coalescing saddles available in the core Mathematica or in standard packages?	353
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Why BoundingRegion does not work well?

<https://mathematica.stackexchange.com/questions/163756/why-boundingregion-does-not-work-well>

Bug introduced in 10.0 and persisting through 11.2.0

I have a set of data points describing an ellipse in the plane. I want to obtain the best ellipse that fits them.

As a first attempt, I use ...

asked by José Antonio Díaz Navas (5 votes)

Are integrals with coalescing saddles available in the core Mathematica or in standard packages?

<https://mathematica.stackexchange.com/questions/163581/are-integrals-with-coalescing-saddles-available-in-the-core-mathematica-or-in-standard-packages>

I was having a look at the DLMF chapter on integrals with coalescing saddles, and there are a few things that I'd like to try out with the functions it describes, including e.g. the Pearcey integral,

asked by Emilio Pisanty (2 votes)

Can FindFit be used with units?

<https://mathematica.stackexchange.com/questions/163391/can-findfit-be-used-with-units>

I am trying to use the units capabilities of Mathematica throughout a course that I am teaching, but am finding that it isn't uniformly implemented across many functions. In particular, I would love ...

asked by Kevin Ausman (1 vote)

3.2 Tuesday, January 9, 2018

=====

Top new questions this week:

=====

[Why is Unevaluated[#]& different from Unevaluated?] <https://mathematica.stackexchange.com/questions/163291/why-is-unevaluated-different-from-unevaluated>

```
{a, b, c} = {1, 2, 3};
Unevaluated /@ Unevaluated@{a, b, c}
(* {Unevaluated[a], Unevaluated[b], Unevaluated[c]} *)
Unevaluated[#]& /@ Unevaluated@{a, b, c}
(* {Unevaluated[1], Unevaluated[2], ...
```

- asked by Roman (18 votes), answered by Szabolcs (19 votes)

[Building a GitBook with Mathematica] <https://mathematica.stackexchange.com/questions/163193/building-a-gitbook-with-mathematica>

GitBook is a fun little website that will take Markdown source material and build a little book out of it.

How can I use Mathematica to build a GitBook with a minimum of effort?

- asked by b3m2a1 (14 votes), answered by b3m2a1 (18 votes)

[How to create a vertical bullet gauge?] <https://mathematica.stackexchange.com/questions/163201/how-to-create-a-vertical-bullet-gauge>

Originally posted in MathematicaMeta SE, titled "I can't understand why Mathematica has an excellent (perhaps the best!) BulletGauge command (with multiple options)", as a reflexion about the ...

- asked by Mika Ike (10 votes), answered by kglr (14 votes)

[Specialized form of Outer[f, list, list] for symmetric f] <https://mathematica.stackexchange.com/questions/163240/specialized-form-of-outerf-list-list-for-symmetric-f>

Consider a function f that is symmetric with regard to its two arguments i.e. $f[x,y] == f[y,x]$. Using `Outer` one can for instance build a correspondence matrix that computes some distance measure f ...

- asked by Sascha (9 votes), answered by Henrik Schumacher (5 votes)

[How to convert a string having nested parentheses into an expression?] <https://mathematica.stackexchange.com/questions/163184/how-to-convert-a-string-having-nested-parentheses-into-an-expression>

I am a Wolfram Language/Mathematica beginner and trying to convert STEP ISO10303 commands into geometrical regions. A simple command looks like

```
(vector(a, (b, c)), line(d, (e, f)))
```

I tried with String ...

- asked by Markus Sonderegger (9 votes), answered by John Doty (9 votes)

[Is there any way to speed up this code that's Maximizing a function got from numerical integration?] <https://mathematica.stackexchange.com/questions/163204/is-there-any-way-to-speed-up-this-code-thats-maximizing-a-function-got-from-num>

I have this code below, which is calculating the Binding energy of an electron in a Quantum Well Wire with a hydrogenic impurity in it. Well you don't have to care much about what kind of calculation ...

- asked by tyler_house (7 votes), answered by Michael E2 (7 votes)

[Joining all the keys of a list of rules that point to matching values] <https://mathematica.stackexchange.com/questions/163068/joining-all-the-keys-of-a-list-of-rules-that-point-to-matching-values>

Suppose I have a list of rules whose keys are not of identical structure (in my case, the keys are either lists of at least one symbol or symbols alone):

```
rules = {{a} -> 1, {b, c} -> 1, d -> ...
```

- asked by user170231 (7 votes), answered by Kuba (10 votes)

==== Greatest hits from previous weeks: =====

[How to calculate scalar curvature Ricci tensor and Christoffel symbols in Mathematica?] <https://mathematica.stackexchange.com/questions/8895/how-to-calculate-scalar-curvature-ricci-tensor-and-christoffel-symbols-in-mathem>

I am seeking a convenient and effective way to calculate such geometric quantities. I've used packages like TensoriaCalc, but they don't work at all time. Sometimes, I run into the following error: ...

- asked by Zoe Rowa (29 votes), answered by Yi-Zen Chu (12 votes)

[xkcd-style Plots] <https://mathematica.stackexchange.com/questions/11350/xkcd-style-plots>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amatya (554 votes), answered by Simon Woods (409 votes)

==== Can you answer these?
====

[Is ClearAttributes built-in functon work in current cell only?] <https://mathematica.stackexchange.com/questions/163223/is-clearattributes-built-in-functon-work-in-current-cell-only>

I have a question. Is ClearAttributes the built-in functon work in current cell only? This is my code:

In first cell:

```
Set[a, 6]
```

In second cell:

```
ClearAttributes[Set, HoldFirst]
Attributes[Set]
...
```

- asked by SIJA (1 vote)

[How to convert Piecewise into KroneckerDelta form by FullSimplify?] <https://mathematica.stackexchange.com/questions/163274/how-to-convert-piecewise-into-kroneckerdelta-form-by-fullsimplify>

The question comes from the last example of this topic in the Wolfram documentation.

SeriesCoefficient[E^x^2, {x, 0, n}]

However, my (v11.1) output is

```


$$\frac{1}{\sqrt{2\pi n}}$$


```

- asked by ooo (1 vote)

[Code behind these Video Playback demos?] <https://mathematica.stackexchange.com/questions/163008/code-behind-these-video-playback-demos>

There are only two known examples of video playback (from a file) within a (non-cloud) notebook:

Visualizations in Graph Theory with the Wolfram Language (at time 3:32) Mathematica and CUDA, ...

- asked by user5601 (3 votes)

3.3 Tuesday, January 2, 2018

=====

Top new questions this week:

=====

[What's the default colormap (or color scheme) used in mathematica?] <https://mathematica.stackexchange.com/questions/162883/whats-the-default-colormap-or-color-scheme-used-in-mathematica>

For example, the colors used on this page: <http://reference.wolfram.com/language/ref/ContourStyle.html>

or here: <https://www.wolfram.com/mathematica/new-in-10/plot-themes/default.html>

or here: ...

- asked by Alex (8 votes), answered by kglr (7 votes)

$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ with one boundary at infinity] <https://mathematica.stackexchange.com/questions/162691/frac-partial2-u-partial-x2-frac-partial-2-u-partial>

Is there a trick to make Mathematica solve

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$$

with one boundary condition at ∞ ?

Boundary ...

- asked by Nasser (8 votes), answered by ZufolgeWeierstrass (13 votes)

[How to make simple closed curve that can be smoothly morphed using locators] <https://mathematica.stackexchange.com/questions/162711/how-to-make-simple-closed-curve-that-can-be-smoothly-morphed-using-locators>

Given a simple closed curve in 2D with some locators on it, I would like to have be able to stretch and squish parts of the curve by moving the locators to morph the curve into another simple closed ...

- asked by Michael McCain (8 votes), answered by halirutan (12 votes)

[Approximation with radial basis functions] <https://mathematica.stackexchange.com/questions/162768/approximation-with-radial-basis-functions>

I want to approximate some functions with basisfunctions, which can be easy Fourier-transformed. So I got the idea to approximate my function with Gaussian normal-distribution curves. This led me to ...

- asked by pcalc (7 votes), answered by Anton Antonov (7 votes)

[How to Discretize the Following Region Using Reasonable Bounds?] <https://mathematica.stackexchange.com/questions/162674/how-to-discretize-the-following-region-using-reasonable-bounds>

I want to accurately discretize the implicit equation $x^2 + x + y^2 + \sin(4xy) + \sin(3xy) = 3.9$.

To get the whole discretized shape, I'm forced to use oversized bounds x,-70,80 and y,-70,80

curve = ...

- asked by Arbuja (7 votes), answered by Carl Woll (5 votes)

[Replacement for GraphJoin] <https://mathematica.stackexchange.com/questions/162900/replacement-for-graphjoin>

According to MathWorld » GraphJoin, Mathematica could compute the join of two graphs with the GraphJoin command, part of Combinatorica. This command no longer works as of v10, and I cannot find a ...

- asked by Bryan Clair (5 votes), answered by kglr (6 votes)

[How can I make a DensityPlot3D over a triangle?] <https://mathematica.stackexchange.com/questions/162852/how-can-i-make-a-densityplot3d-over-a-triangle>

I know that I can plot over 3D-regions like balls via

```
DensityPlot3D[(x^2 + y^2 + z^2)^2, {x, y, z} Ball[{0, 0, 0}, 1]]
```

But, not surprisingly, this breaks down for 2D-regions like triangles.

How ...

- asked by java4ever (5 votes), answered by rcollyer (7 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How do I clear all user defined symbols?] <https://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

- asked by niklasfi (66 votes), answered by Artes (63 votes)

[How to calculate contour integrals with Mathematica?] <https://mathematica.stackexchange.com/questions/34073/how-to-calculate-contour-integrals-with-mathematica>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

- asked by user64494 (31 votes), answered by Artes (54 votes)

=====
 ===== Can you answer these? =====

[Apply a classifier to a column in excel and export side by side result?] <https://mathematica.stackexchange.com/questions/162901/apply-a-classifier-to-a-column-in-excel-and-export-side-by-side-result>

I'm relatively new to using Mathematica, and I was able to create a Classifier from a training set of about 3,000 pairs of non-numerical text strings.

I have my test set of about 20,000 records in an ...

- asked by MORPHORX (2 votes)

[Solving a cumulative distribution from a first order condition] <https://mathematica.stackexchange.com/questions/162825/solving-a-cumulative-distribution-from-a-first-order-condition>

I could use some guidance in using Mathematica's NDSolve. I'm attempting to numerically uncover a cumulative distribution function (CDF), $F(p)$, with density $f(p)$ from a first order condition, ...

- asked by J.R. (1 vote)

[Fourier | Examples | Applications | Frequency Identification: high resolution: what trick is this?] <https://mathematica.stackexchange.com/questions/162661/fourier-examples-applications-frequency-identification-high-resolution-w>

My question is regarding one of the examples in the Documentation Center for the built-in symbol Fourier:

Fourier | Examples | Applications | Frequency Identification

Fourier is used to find the ...

- asked by Jack (1 vote)

CHAPTER 4

YEAR 2017

4.1 Tuesday, December 26, 2017

=====
Top new questions this week:
=====

[How fast is my fidget spinner spinning? A sound experiment!] <https://mathematica.stackexchange.com/questions/162303/how-fast-is-my-fidget-spinner-spinning-a-sound-experiment>

I would like to measure how fast my 6-bladed fidget spinner spins. To do so, after giving it a hard spin, I gently touch the spinner with a wooden stirring stick to create a buzzing sound which ...

- asked by Miladiouss (17 votes), answered by Miladiouss (10 votes)

[Sub-packages and auto-completion] <https://mathematica.stackexchange.com/questions/162386/sub-packages-and-auto-completion>

Cross-posted on Wolfram Community

I have a Mathematica application that consists of two sub-packages, corresponding to the contexts foo' (foo.m) and foo'b' (b.m). Some of the definitions in foo.m ...

- asked by Szabolcs (11 votes), answered by b3m2a1 (2 votes)

[Why does Cases not find a match to the pattern using \hat{n} _. when n is a number other than 1?] <https://mathematica.stackexchange.com/questions/162559/why-does-s-cases-not-find-a-match-to-the-pattern-using-n-when-n-is-a-number-oth>

I am not good in patterns in Mathematica, and so can't figure what I am doing wrong. This example works, when the exponent is 1

```
ClearAll[y,x,n]
Cases[{{( y[x]/x)^1}, (y[x]/x )^(n_.) :&gt; n]
```

But ...

- asked by Nasser (10 votes), answered by m_goldberg (9 votes)

[How to make an Epilog moveable with drag and drop] <https://mathematica.stackexchange.com/questions/162572/how-to-make-an-epilog-moveable-with-drag-and-drop>

I would like to make an Epilog moveable. For example, the following code generates a Manipulate with a framed pane containing some notes. I would like the user to be able to move those notes anywhere ...

- asked by Michael McCain (8 votes), answered by Mike Honeychurch (9 votes)

[Map every second element of a list] <https://mathematica.stackexchange.com/questions/162334/map-every-second-element-of-a-list>

I've loaded a CSV:

```
Colors = Import[
  "d:\\bitbucket\\diversity\\data\\nlcd\\nlcd-colors.csv", "CSV"]
{{0., " 0.00000000000 0.00000000000 0.00000000000"}, {11.,
  " 0.27843137255 0.41960784314 ...
```

- asked by pnz (8 votes), answered by Kuba (13 votes)

[Table of precedence values for all System' symbols] <https://mathematica.stackexchange.com/questions/162474/table-of-precedence-values-for-all-system-symbols>

Has anyone created a table listing the precedences for all symbols? Also, it would be nice if there were a function that for a given precedence value or interval, returned all the symbols with that ...

- asked by Carl Woll (7 votes), answered by Carl Woll (8 votes)

[How to make a custom DynamicImage which support mouse wheel and show pixel value?] <https://mathematica.stackexchange.com/questions/162311/how-to-make-a-custom-dynamicimage-which-support-mouse-wheel-and-show-pixel-value>

The built-in DynamicImage just click the plus sign or minus sign to rescale the image. I have to say click is a not very good operation. Could we make the custom DynamicImage which support the mouse ...

- asked by yode (7 votes), answered by M.R. (3 votes)

=====
Greatest hits from previous weeks: =====

[xkcd-style Plots] <https://mathematica.stackexchange.com/questions/11350/xkcd-style-plots>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amatya (553 votes), answered by Simon Woods (409 votes)

[Why round to even integers?] <https://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers>

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

```
Round[{0.5, 1.5, 2.5, 3.5, 4.5}]
```

gives

```
{0, 2, 2, 4, 4}
```

What's the ...

- asked by wxffles (69 votes), answered by Per Alexandersson (43 votes)

=====
Can you answer these? =====

[How can I check that a graph is edge weighted, fast?] <https://mathematica.stackexchange.com/questions/162391/how-can-i-check-that-a-graph-is-edge-weighted-fast>

I need to check if a graph is edge-weighted while maintaining good performance.

This should be an easy task, but it is not. It is a good example of why it is so terribly frustrating to work with ...

- asked by Szabolcs (5 votes)

[contour of inside of a volume] <https://mathematica.stackexchange.com/questions/162306/contour-of-inside-of-a-volume>

I have the following volume:

```
RegionPlot3D[-j^2*y^2 + j*1 &lt; 11, {1, 0, 10}, {j, 0, 10}, {y, 0, 1}]
```

However, I am not able to obtain a 2D graph from it (contour), which shows the region inside the ...

- asked by Darrin Cope (1 vote)

[Finsler or Lagrange geometry package?] <https://mathematica.stackexchange.com/questions/162489/finsler-or-lagrange-geometry-package>

I was wondering if there exist any packages or examples of work on Finsler-Lagrange geometry. I need it to do symbolic calculations, as for example calculations of non-linear connection coefficients, ...

- asked by Athis Startis (1 vote)

4.2 Tuesday, December 12, 2017

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Top new questions this week:

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[Why does Mathematica results differ from C++ results within machine precision?] <https://mathematica.stackexchange.com/questions/161716/why-does-mathematica-results-differ-from-c-results-within-machine-precision>

I am trying to wrap my head around floating-point precision. Performing the following numeric operation:

```
275./6.*1.03692775514337
```

in Mathematica and C++ and taking the difference of the two results ...

- asked by Knowledge (22 votes), answered by ilian (44 votes)

[Bug with Block & Lookup: Scope Variable Leak] <https://mathematica.stackexchange.com/questions/161616/bug-with-block-lookup-scope-variable-leak>

After debugging a large chunk of code, I could identify this MWE.

```
ClearAll@test
test[var_String] := Block[{association},
  association = <|"x"-> <|"key01"-> "ok"|>|>; [var];
  ...
```

- asked by Murta (22 votes), answered by Albert Retey (15 votes)

[Why is "k" in the output of Sum[Log[k]/k^k, {k,1,Infinity}]?] <https://mathematica.stackexchange.com/questions/161704/why-is-k-in-the-output-of-sum-logk-kk-k-1-infinity>

```
NSum[Log[k]/k^k, {k,1,Infinity}, WorkingPrecision->50]
(* 0.219947267975228664843531307905860703797097130 *)
```

But

```
Sum[Log[k]/k^k, {k,1,Infinity}]
(* -(PolyLog^(1,0))[0,1/k] *)
```

What does "k" in ...

- asked by Vaclav Kotesovec (13 votes)

[Simulating molecular dynamics efficiently] <https://mathematica.stackexchange.com/questions/161471/simulating-molecular-dynamics-efficiently>

The following website offers a very nice molecular dynamics simulation: <http://physics.weber.edu/schroeder/md/>. It is pretty neat and quite a few physical phenomena can be described from that small ...

- asked by anderstood (13 votes), answered by Henrik Schumacher (16 votes)

[Why is listable not an attribute of the Set function?] <https://mathematica.stackexchange.com/questions/161428/why-is-listable-not-an-attribute-of-the-set-function>

The following is a list of attributes for the Set function:

Attributes[Set]

HoldFirst, Protected, SequenceHold

Why is Listable not included?

- asked by S.V (13 votes), answered by Kuba (16 votes)

[How to improve quality of this Plot3D] <https://mathematica.stackexchange.com/questions/161771/how-to-improve-quality-of-this-plot3d>

I tried driving up PlotPoints and MaxRecursion but the intersections look weird, is there some other trick I can do?

```
plot = Plot3D @@ {Abs[Sqrt[x] + Sqrt[y]] /. {x -> Sin[2 x],
      y -> Cos[2 ...
```

- asked by Yaroslav Bulatov (10 votes), answered by Nasser (11 votes)

[How can I tell Mathematica to interpret 0xffff as a hexadecimal number?] <https://mathematica.stackexchange.com/questions/161646/how-can-i-tell-mathematica-to-interpret-0xffff-as-a-hexadecimal-number>

I am stuck. I would like Mathematica simply accept 0x as a prefix Operator for Hexadecimal Numbers. I know that 0x is interpreted as 0*x, so maybe this is just not possible. I am a programmer and am ...

- asked by Mark (9 votes), answered by Carl Woll (16 votes)

==== Greatest hits from previous weeks: =====

[Image processing: Floor plan - detecting rooms' borders (area) and room names' texts] <https://mathematica.stackexchange.com/questions/19546/image-processing-floor-plan-detecting-rooms-borders-area-and-room-names-t>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

- asked by s.s.o (52 votes), answered by niki (52 votes)

[How to create effect like Van Gogh's stroke brush?] <https://mathematica.stackexchange.com/questions/39003/how-to-create-effect-like-van-goghs-stroke-brush>

I need to apply Van Gogh's stroke brush effect to a random image

Take the following image as an example:

Thank you so much if you could help!

- asked by user10495 (30 votes), answered by Simon Woods (42 votes)

=====
 ===== Can you answer these?
 =====

[How to export graphics to SVG in script executed through cron?] <https://mathematica.stackexchange.com/questions/161756/how-to-export-graphics-to-svg-in-script-executed-through-cron>

I have a Wolfram script that generates plots, and exports them by evaluating expressions of the form

```
Export["/path/to/some.svg", myPlot];
```

The script works as intended when I run it from the [Unix] ...

- asked by kjo (3 votes)

[Is it possible to prevent LUdecompositon from pivoting?] <https://mathematica.stackexchange.com/questions/161552/is-it-possible-to-prevent-ludecompositon-from-pivoting>

By construction LUdecomposition performs LU-decomposition with pivoting, i.e. with row permutations (otherwise the decomposition may not exist). Is it possible to tell Mathematica not to use pivoting ...

- asked by faleichik (1 vote)

[How Many of R's Functionalities Are Available From Inside Mathematica?] <https://mathematica.stackexchange.com/questions/161664/how-many-of-rs-functionalities-are-available-from-inside-mathematica>

When R is linked to Mathematica, how many of its functionalities are available from inside of Mathematica?

- asked by Glenford Mc Ewen (2 votes)

4.3 Tuesday, December 5, 2017

=====

Top new questions this week:

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[Sharing small code snippets] <https://mathematica.stackexchange.com/questions/161269/sharing-small-code-snippets>

As part of my never-ending goal of getting Mathematica code to be as easily shared as python packages I was recently thinking about how to make code easy to share.

So what's are some good ways to ...

- asked by b3m2a1 (19 votes), answered by b3m2a1 (13 votes)

[InverseTotient[]?] <https://mathematica.stackexchange.com/questions/160949/inversetotient>

Maple has a function `InverseTotient(c)`, which returns all those natural numbers n whose Euler totient function $\phi(n) = c$. Is there an equivalent inverse of `EulerPhi[]` in Mathematica? If ...

- asked by Joseph O'Rourke (11 votes), answered by Michael E2 (18 votes)

[What are the counterparts in Wolfram to left and right division of a matrix in other programming language, e.g. Julia and MATLAB?] <https://mathematica.stackexchange.com/questions/161301/what-are-the-counterparts-in-wolfram-to-left-and-right-division-of-a-matrix-in-o>

Sometimes, to find the inverse of a matrix is a labor-consuming task or even "disgusting", especially when the matrix is "ill". It is said, e.g. in Julia, that the left/right division operation is ...

- asked by Alexander Zeng (10 votes), answered by C. E. (12 votes)

[How to perform Loop subdivision on a triangle mesh with Mathematica?] <https://mathematica.stackexchange.com/questions/161331/how-to-perform-loop-subdivision-on-a-triangle-mesh-with-mathematica>

Every now and then, the question pops up how a given geometric mesh (e.g. a MeshRegion) can be refined to produce a i.) finer and ii.) smoother mesh. For example, the following triangle mesh from the ...

- asked by Henrik Schumacher (9 votes), answered by Henrik Schumacher (11 votes)

[How to speed up 'RotationMatrix'?] <https://mathematica.stackexchange.com/questions/161230/how-to-speed-up-rotationmatrix>

I frequently run into the situation that I have to apply RotationMatrix to a huge bunch of 3D vectors and angles for numerical computations. On the one hand, the syntax of RotationMatrix forces me to ...

- asked by Henrik Schumacher (9 votes), answered by Henrik Schumacher (15 votes)

[How to create (Header + Main area + Settings pane) notebook layout] <https://mathematica.stackexchange.com/questions/161203/how-to-create-header-main-area-settings-pane-notebook-layout>

cross-posted in community.wolfram.com

The goal is something like in the picture below.

Basic? I dare you to try to implement it in a manageable, scalable and flexible way.

Requirements:

The ...

- asked by Kuba (7 votes), answered by Mike Honeychurch (1 vote)

[MaTeX and <https://mathematica.stackexchange.com/questions/161219/matex-and-phantom>

My understanding of the directive is that it should preserve the sizes of all elements in the expression. But when I try this:

```
m1 = Inset[MaTeX["\\sqrt{\\phantom{a^2}b}"], Magnification -&gt; ...
```

- asked by Wynne (7 votes), answered by Nasser (12 votes)

=====
 ===== Greatest hits from previ-
 ous weeks: =====

[Elegant operations on matrix rows and columns] <https://mathematica.stackexchange.com/questions/3069/elegant-operations-on-matrix-rows-and-columns>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

- asked by sjdh (148 votes), answered by Mr.Wizard (50 votes)

[How to create effect like Van Gogh's stroke brush?] <https://mathematica.stackexchange.com/questions/39003/how-to-create-effect-like-van-goghs-stroke-brush>

I need to apply Van Gogh's stroke brush effect to a random image

Take the following image as an example:

Thank you so much if you could help!

- asked by user10495 (30 votes), answered by Simon Woods (42 votes)

=====
 ===== Can you answer these?
 =====

[Is there any code formatting style reference?] <https://mathematica.stackexchange.com/questions/161344/is-there-any-code-formatting-style-reference>

Is there any code formatting style reference for Wolfram Language similar to <https://www.python.org/dev/peps/pep-0008/> and <https://google.github.io/styleguide/javaguide.html>? I'm teaching some people ...

- asked by qazwsx (4 votes)

[Plot spectrum Fourier Transform] <https://mathematica.stackexchange.com/questions/161381/plot-spectrum-fourier-transform>

i want to plot the spectrum of the following function. I hope that anybody is able to help me. I don't know how to plot the dirac delta function. I tried it this way but it didntt work so far. Thanks! ...

- asked by Luke (1 vote)

[Wrapper for mathematica code with GUI] <https://mathematica.stackexchange.com/questions/160966/wrapper-for-mathematica-code-with-gui>

I have a code written in Mathematica. What I am trying to do is to write a wrapper (say using Python) that will take user input for the Mathematica code, run the code, and create output.

I do not ...

- asked by CuriousCoder (2 votes)

4.4 Tuesday, November 28, 2017

=====

Top new questions this week:

=====

[The fastest thing since sliced cubes?] <https://mathematica.stackexchange.com/questions/160527/the-fastest-thing-since-sliced-cubes>

I've fallen down a rabbit hole recently, and need a reality check.

Suppose you have an arbitrary unit vector, $u \in \mathbf{R}^3$, and you cut up the unit cube into slices orthogonal to u with ...

- asked by aardvark2012 (18 votes), answered by ybeltukov (7 votes)

[Mathematica does not respect linearity of integral] <https://mathematica.stackexchange.com/questions/160655/mathematica-does-not-respect-linearity-of-integral>

I have the following issue, trying to evaluate an integral. Mathematica tells me

`Integrate[x^2 (1 + x^2)^(1/2) + y + z, {x, y, z} Sphere[{0, 0, 0}, 1]]`

`(* 1/2 (3 Sqrt[2] - Log[2 (2 + Sqrt[2])]) ...`

- asked by Simone Melchiorre Chiarello (14 votes), answered by Itai Seggev (8 votes)

[How to obtain the cell-adjacency graph of a mesh?] <https://mathematica.stackexchange.com/questions/160443/how-to-obtain-the-cell-adjacency-graph-of-a-mesh>

Given an arbitrary mesh region, how can I efficiently obtain the graph describing the adjacency structure of mesh cells?

For example, given the following mesh,

```
SeedRandom[123]
pts = RandomReal[1, ...
```

- asked by Szabolcs (10 votes), answered by Henrik Schumacher (11 votes)

[Can a symbol have both OwnValues and DownValues?] <https://mathematica.stackexchange.com/questions/160740/can-a-symbol-have-both-ownvalues-and-downvalues>

Mathematica Version 11.2 desktop / Windows 10 Pro 64-bit

I am trying to understand if a symbol can have both OwnValues and DownValues.

Is this acceptable or not acceptable?

As an experiment, I ...

- asked by John (10 votes), answered by m_goldberg (11 votes)

[Differences between DSolve and NDSolve] <https://mathematica.stackexchange.com/questions/160560/differences-between-dsolve-and-ndsolve>

I have a question about the difference in the solution between DSolve and NDSolve.

I want to solve the Friedmann equation of

$$3\left(\frac{\dot{a}^2}{a^2} + \frac{k}{a^2}\right) = 8\pi \quad (4.1)$$

- asked by user85503 (10 votes), answered by Michael E2 (10 votes)

[How to check if a vector is an eigenvector of a matrix using mathematica?] <https://mathematica.stackexchange.com/questions/160801/how-to-check-if-a-vector-is-an-eigenvector-of-a-matrix-using-mathematica>

Here is a vector

$$\begin{pmatrix} i \\ 7i \\ -2 \end{pmatrix}$$

Here is a matrix

```
$$\begin{pmatrix}2& i& 0 \\ -i& 1& 1 \\ 0 & 1& 0\end{pmatrix}$$
```

Is there a simple way to determine ...

- asked by Conor Cosnett (8 votes), answered by Michael E2 (5 votes)

[How do I read values from photocells connected to analog pins of Arduino Uno?]

```
https://mathematica.stackexchange.com/questions/160761/how-do-i-read-values-from-photocells-connected-to-analog-pins-of-arduino-uno
```

Generally, I need to connect my Arduino Uno to Mathematica and read 3 analog values from A0, A1, A2 in real-time.

As I understand, I have 2 ways of connecting Arduino to Mathematica:

First: I have a ...

- asked by Aleksandr Berezutskii (8 votes), answered by Suba Thomas (2 votes)

=====
 ===== Greatest hits from previous weeks: =====
 =====

```
[How to manipulate 2D plots?] https://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots
```

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by István Zachar (124 votes), answered by István Zachar (142 votes)

```
[How to find the position of elements in a list satisfying criteria] https://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria
```

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements that are greater than 7.

Select[x, #>7&] gives the elements themselves, and Position[x,8] gives the ...

- asked by PeterR (47 votes), answered by J. M. (46 votes)

=====
 ===== Can you answer these? =====
 =====

[Default options of LinearSolve] <https://mathematica.stackexchange.com/questions/160693/default-options-of-linearsolve>

I would like to know what is the default options of LinearSolve when using LinearSolve[A,b], where A is a sparse matrix. There are several methods available such as Cholesky and Krysol etc., see here. ...

- asked by Wilhelm (1 vote)

[Prevent Semi-Transparent Pixels in Export] <https://mathematica.stackexchange.com/questions/160578/prevent-semi-transparent-pixels-in-export>

I've noticed that when I export plots in Mathematica without a background, a lot of the text ends being made of semi-transparent pixels. For example:

```
myplot = ContourPlot[Cos[x] + Cos[y], x, 0, 4 ...
```

- asked by ereHsaWyhsipS (1 vote)

[Identifying the range of the voice] <https://mathematica.stackexchange.com/questions/160731/identifying-the-range-of-the-voice>

I'm trying to do an equalization in an audio program called Audition.

To have a good voice equalization, I need to have a frequency range of my voice.

A minimum value and a maximum frequency value.

...

- asked by LCarvalho (2 votes)

4.5 Tuesday, November 21, 2017

=====

Top new questions this week:

=====

[Is it possible to construct a fullform trace function] <https://mathematica.stackexchange.com/questions/160184/is-it-possible-to-construct-a-fullform-trace-function>

Is it possible to construct a FullFormTrace function that takes an arbitrary expression and prints a sequence (or returns a list) of the evaluation steps in full form. For instance

...

- asked by Bob Ueland (13 votes), answered by Edmund (15 votes)

[Integrate gives wrong result for simple function] <https://mathematica.stackexchange.com/questions/160278/integrate-gives-wrong-result-for-simple-function>

(probably) Bug introduced in 9.0 or earlier and persisting through 11.2

It looks like this.

```
NIntegrate[1/(2 + Sin[x + y]), {x, 0, 2 Pi}, {y, 0, 2 Pi}]
22.7929
Integrate[1/(2 + Sin[x + y]), {x, 0, ...
```

- asked by huotuichang (10 votes), answered by Nasser (8 votes)

[Select the same elements from lists] <https://mathematica.stackexchange.com/questions/160222/select-the-same-elements-from-lists>

I need a special intersectant operation for List other than Set.

There maybe some duplicate elements, also need to count instead of merging as Intersection.

For example:

...

- asked by GalAster (10 votes), answered by jjc385 (11 votes)

[Building a convenient package distribution system] <https://mathematica.stackexchange.com/questions/160330/building-a-convenient-package-distribution-system>

The PacletManager is nice, but it's not really a low-effort system to work with.

Installing a package can be made pretty easy, but only if the location from which it is to be installed makes it so.

...

- asked by b3m2a1 (8 votes)

[How to merge two lists with different dimensions] <https://mathematica.stackexchange.com/questions/160159/how-to-merge-two-lists-with-different-dimensions>

I have two list, just like

```
a={a1,a2,a3,a4};
b={b1,b2,b3,b4,b5};
```

I want merge them and save to excel, as they have different dimention, so I want it have the following format.

...

- asked by zongxian (7 votes), answered by Carl Woll (12 votes)

[What is the elegant way of applying function to two lists?] <https://mathematica.stackexchange.com/questions/160028/what-is-the-elegant-way-of-applying-function-to-two-lists>

I am interested in finding the most concise elegant way of doing the following: We have a function `fun[x1,x2]` and two lists:

```
ls1={a1,a2,a3,a4,.....}
```

and

```
ls2={b1,b2,b3,b4,.....}
```

I ...

- asked by qahtah (7 votes), answered by halirutan (11 votes)

[Legend displaying the expected number of points per unit area next to density plot] <https://mathematica.stackexchange.com/questions/160193/legend-displaying-the-expected-number-of-points-per-unit-area-next-to-density-plot>

I have 2d points and want to show a colored density plot of them. I also want to display a legend showing which point density (number of points per unit area) the colors in the plot represent.

Let's ...

- asked by mrz (6 votes), answered by C. E. (7 votes)

=====
 Greatest hits from previous weeks: =====

[Creating legends for plots with multiple lines?] <https://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.


```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . . }
```

If I then do `ListLinePlot[Table[{#1,Log[b,#2]}&@@@data, {b,1,10,2}]]`
I have no way to generate a legend ...

- asked by Eiyriou von Kauyf (63 votes), answered by Jens (92 votes)

[What does # mean in Mathematica?] <https://mathematica.stackexchange.com/questions/19035/what-does-mean-in-mathematica>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

```
x = Root[#1^8 c^4 - 8 #1^7 c^4 + 28 #1^6 c^4 - 56 #1^5 c^4 + 70 #1^4 c^4 - 56 #1^3 c^4 + 28 #1^2 c^4 - 8 #1 c^4 + c^4, 1]
```

- asked by rononymous (21 votes), answered by Dr. belisarius (46 votes)

=====
=====
Can you answer these?
=====
=====

[Convergent infinite sum fails to converge in Sum[...]] <https://mathematica.stackexchange.com/questions/160280/convergent-infinite-sum-fails-to-converge-in-sum>

It looks like this.

```
Limit[Sum[1/((2 n + 1) Pi I - x), {n, -m, m}], m -> ]  
= -(1/2) Tanh[x/2]
```

```
Sum[1/((2 n + 1) Pi I - x), {n, -, }]
```

```
Sum::div: Sum does not converge.
```

Turning on Regularization ...

- asked by huotuichang (1 vote)

[Stacked BarChart with Callout] <https://mathematica.stackexchange.com/questions/159945/stacked-barchart-with-callout>

BarChart examples include this code :

```
BarChart[Table[Callout[RandomReal[{0, 1}], Unique["text"]], 2, 8],  
  BarSpacing -> 2, ChartLayout -> "Stacked"]
```

Its result should be :

But I can't ...

- asked by qwerty (2 votes)

[Possible to add a Heading for the columns in HDF5 format?] <https://mathematica.stackexchange.com/questions/159978/possible-to-add-a-heading-for-the-columns-in-hdf5-format>

A similar post was found here, but it's not using MMA.

A small test to export HDF5 file,

```
Export["test.h5", { "summary_Shoe" -&gt; anssummary, "summary_Tie" -&gt; anssummaryTie
```

Woks fine.

But ...

- asked by Chen Stats Yu (3 votes)

4.6 Tuesday, November 14, 2017

=====

Top new questions this week:

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[Drawing Clifford Attractors in Mathematica] <https://mathematica.stackexchange.com/questions/159668/drawing-clifford-attractors-in-mathematica>

I came upon the "Clifford Attractor" today, which are equations of the form:

$$x_{n+1} = \sin(a y_n) + c \cos(x_n)$$

$$y_{n+1} = \sin(b x_n) + d \cos(y_n)$$

They create some incredible images by ...

- asked by TreFox (24 votes), answered by Szabolcs (32 votes)

[Mismatch between Mathematica and COMSOL in 3D FEM problem] <https://mathematica.stackexchange.com/questions/159506/mismatch-between-mathematica-and-comsol-in-3d-fem-problem>

I would like to solve an advection-diffusion problem on a torus domain. There are three Dirichlet conditions: One at the inlet (concentration $c = 0$), one at the outlet ($c = 0.5$) and one at the wall ...

- asked by Alexander Erlich (16 votes)

[Unexpected behaviors in built-in functions] <https://mathematica.stackexchange.com/questions/159895/unexpected-behaviors-in-built-in-functions>

Existence of this topic is discussed in this [mathematica.meta](#) post.

I'm sure I am not the only non-beginner in WL who from time to time finds themselves not being able to predict an outcome of a ...

- asked by Kuba (14 votes), answered by Kuba (6 votes)

[How to create a faded image using an existing image file] <https://mathematica.stackexchange.com/questions/159662/how-to-create-a-faded-image-using-an-existing-image-file>

The question is simple:

How can I take an image of a perfect stamp (load an image file) such as
and make it look old, worn, and faded, with missing arbitrary small bits, like the following stamp

...

- asked by Vaggelis_Z (12 votes), answered by niki (27 votes)

[Building a Noisy Function] <https://mathematica.stackexchange.com/questions/159614/building-a-noisy-function>

Here's a nice function with a nice plot:

```
f[t_] := Exp[-Abs[t]] Sin[t];
Plot[f[t], {t, -10, 10}, PlotRange -> All]
```

What I would like to do is to make it noisy... to add something to $f[t]$ so ...

- asked by bill s (10 votes), answered by David G. Stork (9 votes)

[Inaccurate (non-smooth) boundary of the mesh generated by ToElementMesh] <https://mathematica.stackexchange.com/questions/159775/inaccurate-non-smooth-boundary-of-the-mesh-generated-by-toelementmesh>

I try to generate a mesh over a region, which has a wavy boundary at its bottom and needs very fine mesh around the bottom.

However, the generated mesh boundary is not as smooth as the specified one. ...

- asked by Wilhelm (8 votes), answered by user21 (4 votes)

[remove transparency of background Image] <https://mathematica.stackexchange.com/questions/159837/remove-transparency-of-background-image>

I have the following image:

As you can see the background is kind of white-ish. Now my question is: How can I remove this transparency of the background image ?

- asked by totyped (8 votes), answered by Coolwater (10 votes)

=====
Greatest hits from previous weeks: =====

[Creating Mathematica packages] <https://mathematica.stackexchange.com/questions/29324/creating-mathematica-packages>

I'm building a package to help me write packages and their documentation. In this post I explained how to make a package and its documentation. In the answer I provided I describe how to build a very ...

- asked by jmlopez (91 votes), answered by Leonid Shifrin (122 votes)

[Difference between != and !=] <https://mathematica.stackexchange.com/questions/153694/difference-between-and>

I (think I) understand the difference between == (semantic) and === (syntactic). So when comparing != and != I was expecting a similar difference. So can anyone explain why the third line in this ...

- asked by GambitSquared (6 votes), answered by John Joseph M. Carrasco (12 votes)

=====
Can you answer these?
=====

[On comparable hardware, is Mathematica known to perform better in one operating system over the others?] <https://mathematica.stackexchange.com/questions/159699/on-comparable-hardware-is-mathematica-known-to-perform-better-in-one-operating>

Have any benchmarks been published by Wolfram Research to compare the performance of Mathematica in the major operating systems (Windows 10, Linux, MacOS)? If not, has anyone here performed such ...

- asked by Shredderroy (7 votes)

[Adjusting opacity in map overlays] <https://mathematica.stackexchange.com/questions/159843/adjusting-opacity-in-map-overlays>

I am currently working with rainfall data from hurricane Harvey in order to better understand how to allocate resources in the event of another disaster. I want to accomplish a few things given this ...

- asked by Harrison Whorf (3 votes)

[how to count or extract Cases out of list of association that matches pattern] <https://mathematica.stackexchange.com/questions/159783/how-to-count-or-extract-cases-out-of-list-of-association-that-matches-pattern>

I have list of associations

```
lr1 = {&lt;|a -&gt; {0,0}, b -&gt; "TRUE"|&gt;, &lt;|b -&gt; "FALSE", a -&gt; {0,1}|&gt;
```

- asked by Dragutin (4 votes)

4.7 Tuesday, November 7, 2017

=====

Top new questions this week:

=====

[Automatic edX Pdf Handout creator] <https://mathematica.stackexchange.com/questions/159065/automatic-edx-pdf-handout-creator>

I am trying to make an automatic handout creator for my courses on edX. It took me a long time to do it...

(If you don't know edX: <https://www.edx.org/>)

I wrote a program that adds to each slide ...

- asked by totyped (14 votes), answered by M. Stern (4 votes)

[The area of a unit disk is 2π ? (NIntegrate over a numerical region)] <https://mathematica.stackexchange.com/questions/159194/the-area-of-a-unit-disk-is-2-pi-nintegrate-over-a-numerical-region>

EDIT: The example below concerns the construction of a numerical region from a general boolean-valued function. The question of how to properly construct such a region has been answered below (by M. ...

- asked by Will.Mo (13 votes), answered by m_goldberg (12 votes)

[How many Capitals are closer to me than my own?] <https://mathematica.stackexchange.com/questions/159041/how-many-capitals-are-closer-to-me-than-my-own>

A recent question in chat about "When you are in Aachen, Germany, five other countries capitals are closer than Berlin." triggered me to try to write something to find the cities automatically for ...

- asked by pH13 - Yet another Philipp (9 votes), answered by J. M. (4 votes)

[How to SortBy Last and in Reverse order?] <https://mathematica.stackexchange.com/questions/159295/how-to-sortby-last-and-in-reverse-order>

I am looking at the two functions SortBy and ReverseSort.

```
SortBy[{{1, 2, 3}, {2, 3, 1}, {3, 1, 2}, {2, 2}}, Last]
```

```
    {{2, 3, 1}, {2, 2}, {3, 1, 2}, {1, 2, 3}}
```

How do I sort this by the ...

- asked by Chen Stats Yu (7 votes), answered by J. M. (7 votes)

[CatalanNumber[-1] formula on functions.wolfram.com unequals result from Mathematica] <https://mathematica.stackexchange.com/questions/159143/catalannumber-1-formula-on-functions-wolfram-com-unequals-result-from-mathemat>

The formula for CatalanNumber[-1] on this functions.wolfram.com page gives:

```
-(1/2)
```

whereas CatalanNumber[-1] directly evaluated gives?

-1

- asked by axelclk (7 votes), answered by J. M. (8 votes)

[DiscretizeGraphics issues with transformations] <https://mathematica.stackexchange.com/questions/159035/discretizegraphics-issues-with-transformations>

I noticed DiscretizeGraphics does not work correctly with transformed Graphics such as

```
Graphics[Rotate[Rectangle[], 30]]
```

Both using Rotate and GeometricTransformation together with ...

- asked by Sascha (7 votes), answered by aardvark2012 (5 votes)

[How to locate a stream line starting from a saddle point?] <https://mathematica.stackexchange.com/questions/159093/how-to-locate-a-stream-line-starting-from-a-saddle-point>

I read in a table of gradient vectors and plot using the ListStreamPlot. I want to locate and color the line that represents the "boundary" of the flux. A flux line that 1) starts from a saddle point ...

- asked by Jun Liu (6 votes)

==== Greatest hits from previous weeks: =====

[What are the most common pitfalls awaiting new users?] <https://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by Dr. belisarius (407 votes), answered by Michael E2 (238 votes)

[Image processing: Floor plan - detecting rooms' borders (area) and room names' texts] <https://mathematica.stackexchange.com/questions/19546/image-processing-floor-plan-detecting-rooms-borders-area-and-room-names-t>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

- asked by s.s.o (52 votes), answered by niki (52 votes)

=====
 ===== Can you answer these?
 =====

[Editing pdf files with Mathematica] <https://mathematica.stackexchange.com/questions/159074/editing-pdf-files-with-mathematica>

As an example, consider this pdf file.

Would it be possible to edit the pdf, such as removing a logo, the page numbering and even frames, and save the result as a pdf? I would like to keep the pdf ...

- asked by anderstood (4 votes)

[A question concerning a generalization of HypergeometricPFQ] <https://mathematica.stackexchange.com/questions/159242/a-question-concerning-a-generalization-of-hypergeometricpfq>

I have been trying to find explicit formulas for the real and imaginary parts of the Wolfram function `EllipticK`. An interesting formula for the real part of `EllipticK` evaluated at a complex number is ...

- asked by John M. Campbell (1 vote)

[Export cdf does not work in MathKernel command line] <https://mathematica.stackexchange.com/questions/159210/export-cdf-does-not-work-in-mathkernel-command-line>

I am using Mathematica through command line MathKernel. I am not trying to draw any graphics in the console. But I should be able to export things a CDF. Why can't I export a CDF through command line ...

- asked by Neel Basu (2 votes)

4.8 Tuesday, October 31, 2017

=====

Top new questions this week:

=====

[Implementing a planetary terrain generation algorithm] <https://mathematica.stackexchange.com/questions/158843/implementing-a-planetary-terrain-generation-algorithm>

From this (now deleted) question I found this site where the author discusses a simple technique for random terrain generation on a sphere.

The method discussed is as follows:

start with a ...

- asked by b3m2a1 (18 votes), answered by b3m2a1 (19 votes)

[Performance of Select] <https://mathematica.stackexchange.com/questions/158583/performance-of-select>

I have a data set of about $4 \cdot 10^6$ 3d-coordinates.

From this volume I am sequentially selecting coordinates along one axis and manipulating this subset.

My question: can the Select function be ...

- asked by mrz (15 votes), answered by kglr (23 votes)

[Create a simple split tree] <https://mathematica.stackexchange.com/questions/158858/create-a-simple-split-tree>

I am trying to create a simple split tree.

The growth should be only upwards, the vertical element length constant (1), the size of the horizontal bars should be halved in each iteration and the ...

- asked by Niki (12 votes), answered by m_goldberg (10 votes)

[Easy printing of executable code] <https://mathematica.stackexchange.com/questions/158901/easy-printing-of-executable-code>

I'm working on a package that has functions that call other existing and packaged functions. I'd like a way to output what some of those key calls are, so users can see what's happening under the ...

- asked by Chris K (9 votes), answered by Szabolcs (10 votes)

[Two bouncing balls in 1 dimension, issues with two different methods?] <https://mathematica.stackexchange.com/questions/158857/two-bouncing-balls-in-1-dimension-issues-with-two-different-methods>

I'm trying to simulate 2 balls with the same mass and diameter bouncing one on top of another under gravity, see the illustration below (not ideal, but this is the best result I've got so far, the ...

- asked by Yuriy S (8 votes), answered by b3m2a1 (7 votes)

[Receive macOS notification when evaluation finishes] <https://mathematica.stackexchange.com/questions/158898/receive-macos-notification-when-evaluation-finishes>

Is Mathematica able to communicate with macOS's native Notification Center in order to notify me if an evaluation finishes in any of my open notebooks?

I'm looking for a solution similar to this one ...

- asked by Casimir (8 votes), answered by Szabolcs (12 votes)

[Why does repeated export of JPG-Images consume all memory?] <https://mathematica.stackexchange.com/questions/158690/why-does-repeated-export-of-jpg-images-consume-all-memory>

I was looking in the history of asked questions for similar questions, but none of the alike questions answered my problem sufficiently. So I ask nevertheless.

My system memory is leaked by simple ...

- asked by sacratus (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Is it possible to draw this figure using Mathematica?] <https://mathematica.stackexchange.com/questions/110848/is-it-possible-to-draw-this-figure-using-mathematica>

The figure is

See the how-to video or a speeded-up GIF.

I believe it should be possible to draw this figure programmatically using some Random function, but I'm rather new to Mathematica, so I ...

- asked by AccidentalFourierTransform (62 votes), answered by M.R. (87 votes)

[Elegant operations on matrix rows and columns] <https://mathematica.stackexchange.com/questions/3069/elegant-operations-on-matrix-rows-and-columns>

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

- asked by sjdh (147 votes), answered by Mr.Wizard (50 votes)

==== Can you answer these?
====

[Number Formatting Functions Do Not Evaluate with ExportString] <https://mathematica.stackexchange.com/questions/158694/number-formatting-functions-do-not-evaluate-with-exportstring>

I need to export in a particular text file format and tried NumberForm, PaddedForm, AccountingForm, and DecimalForm to see which would work best. To my surprise only NumberForm evaluates when ...

- asked by Edmund (3 votes)

[DSolve Throw::nocatch: Uncaught Throw[\$Failed,balancefail] returned to top level. error in 11.2] <https://mathematica.stackexchange.com/questions/158817/dsolve-thrownocatch-uncaught-throwfailed-balancefail-returned-to-top-level>

Reported also to WRI. [CASE:3965533]

I am in the process of updating Kamke differential equations tests for 11.2 when encountered a new error I have not seen before on one of the Kamke ODE's ...

- asked by Nasser (3 votes)

[Solve for several constants using a set of initial conditions] <https://mathematica.stackexchange.com/questions/158783/solve-for-several-constants-using-a-set-of-initial-conditions>

I have a set of differential equations that I am trying to solve for chemical reaction rate constants. So far I can get DSolve to solve the ODEs with initial conditions which provides the chemical ...

- asked by razzle_dazzle_84 (1 vote)

4.9 Tuesday, October 24, 2017

=====

Top new questions this week:

=====

[Strange behavior of Table] <https://mathematica.stackexchange.com/questions/158186/strange-behavior-of-table>

Whenever I run the code

```
a = 0;
code := (a++);
Table[code; a, {1000}]
```

I get a list of 1000 zeros. However, if I replace 1000 with 100, then I get a list equal to Range[100]. Is this a bug or am I ...

- asked by Antonio De Juárez (12 votes), answered by Szabolcs (21 votes)

[Large increase in integrate result leaf size after version 9. Looking for common cause] <https://mathematica.stackexchange.com/questions/158059/large-increase-in-integrate-result-leaf-size-after-version-9-looking-for-common>

reported to WRI. [CASE:3960295]

I run the CAS integration tests which contains 15000 integrals over number of Mathematica versions.

I found that the average leaf size of the anti-derivatives ...

- asked by Nasser (12 votes), answered by Itai Seggev (8 votes)

[Convert Real packed array of pairs to Complex packed array] <https://mathematica.stackexchange.com/questions/158082/convert-real-packed-array-of-pairs-to-complex-packed-array>

I have a Real packed array `arr`. It may have arbitrary depth but `Last@Dimensions[arr] == 2`. For example,

```
arr = N@Partition[Partition[Range[24], {2}], 3]
```

I want to convert it to a Complex packed ...

- asked by Szabolcs (12 votes), answered by Carl Woll (9 votes)

[Conversion of Matrix of Characters to a Matrix of Zeros and Ones based on Column Frequency] <https://mathematica.stackexchange.com/questions/158465/conversion-of-matrix-of-characters-to-a-matrix-of-zeros-and-ones-based-on-column>

I have a matrix of characters that I wish to convert to a matrix of 0's and 1's. Although the matrix is large[17, 4301], I subsample this for purposes of my question. The matrix is:

```
m = {"T", ...
```

- asked by Stuart Poss (11 votes), answered by Nasser (4 votes)

[What's the fastest way to take Mean of a Tensor in given slot?] <https://mathematica.stackexchange.com/questions/158345/whats-the-fastest-way-to-take-mean-of-a-tensor-in-given-slot>

One should expect that the implementation of the built-in function `Mean` was quick. However, as I recently observed, this is not true at all, in particular for matrices. Just compare `Mean` to the ...

- asked by Henrik Schumacher (9 votes), answered by Carl Woll (6 votes)

[Animating a Potential Function (eigenfunctions of Laplace's equation)] <https://mathematica.stackexchange.com/questions/158412/animating-a-potential-function-eigenfunctions-of-laplaces-equation>

I have written the following `DynamicModule`. The idea is that you can change the boundary, calculate the eigenfunctions and then animate them. Here is the code:

```
DynamicModule[{pts, bdr = {{0, 0}, {1, ...
```

- asked by Hugh (9 votes), answered by Kuba (8 votes)

[How to implement a free version of WebImageSearch?] <https://mathematica.stackexchange.com/questions/158134/how-to-implement-a-free-version-of-web-imagesearch>

I really don't like functions that I have to pay for, if they can be implemented for free. Is there a way to get around this pay-wall for WebImageSearch? Perhaps using some other free api or service? ...

- asked by M.R. (9 votes), answered by b3m2a1 (11 votes)

=====
Greatest hits from previous weeks: =====

[How to express trigonometric equation in terms of of given trigonometric function?] <https://mathematica.stackexchange.com/questions/434/how-to-express-trigonometric-equation-in-terms-of-of-given-trigonometric-functio>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$$\text{Sin}[x]^2 + \text{Cos}[x]^2 == 1$$

$$\text{Sin}[x] / \text{Cos}[x] == \text{Tan}[x]$$

...

- asked by Prashant Bhate (27 votes), answered by Simon (34 votes)

[Learn Mathematica (Wolfram) Language in one day] <https://mathematica.stackexchange.com/questions/138366/learn-mathematica-wolfram-language-in-one-day>

Currently I am trying to learn Python. Searching for relevant material I came across X in Y minutes

and books with titles such as Learn Python in one day, in 24 hours, etc.

Similar material exists ...

- asked by dimitris (26 votes), answered by masterxilo (11 votes)

=====
Can you answer these? =====

[How to draw a generic 3D closed shape to be analyzed in AceFEM?] <https://mathematica.stackexchange.com/questions/158446/how-to-draw-a-generic-3d-closed-shape-to-be-analyzed-in-acefem>

I would like to draw a 3D shape to test my AceGen procedure. I will insert the AceFEM part of my code. In this example, I have performed the analysis on a hexahedron element.

- asked by M.Rock (2 votes)

[Kernel crash with KeySelect and repeated keys on list of rules] <https://mathematica.stackexchange.com/questions/158421/kernel-crash-with-keyselect-and-repeated-keys-on-list-of-rules>

After running

```
KeySelect[{"a" -&gt; 0, "a" -&gt; 1}, True &amp;];
```

my kernel either hangs forever (possibly with the eventual warning that "the kernel is not responding to a Dynamic evaluation") or ...

- asked by masterxilo (2 votes)

[How to remove circled noise from image] <https://mathematica.stackexchange.com/questions/158123/how-to-remove-circled-noise-from-image>

Consider a simplified example:

noise

```
noise = Table[
  RandomVariate[
    NormalDistribution[1, 0.2]] Sin[Sqrt[x^2 + y^2]]^8, {x, -16,
    16 - 16/512, 32/512}, {y, -16, 16 - 16/512, 32/512}];
```

...

- asked by xslittlegrass (3 votes)

4.10 Tuesday, October 17, 2017

=====

Top new questions this week:

=====

[Is building an event-based parser possible/reasonable in Mathematica (WL)?] <https://mathematica.stackexchange.com/questions/157834/is-building-an-event-based-parser-possible-reasonable-in-mathematica-wl>

Too long? Go to Problems section

Background

I like to learn by doing small, sometimes artificial, projects. Among other things I had 'parsers', and 'stream methods / streams in MMA' on my to learn ...

- asked by Kuba (11 votes)

[Test if a list is a constant integer multiple of another list] <https://mathematica.stackexchange.com/questions/157783/test-if-a-list-is-a-constant-integer-multiple-of-another-list>

I have a list of lists, and I want to eliminate all the lists that are constant integer multiples of another list. My initial approach was to divide the lists using nested tables.

```
ex1 = {{1, 1, 1}, ...
```

- asked by Lokdal (10 votes), answered by Mr.Wizard (9 votes)

[Cannot Reproduce Answer to 99576] <https://mathematica.stackexchange.com/questions/157889/cannot-reproduce-answer-to-99576>

Bug introduced between versions 10.1 and 10.4, and persisting through 11.2. Reported to Wolfram, Inc as CASE:3958778.

Using either 11.2 or 10.4 on Windows 10 (64 bit), I am unable to reproduce the ...

- asked by bbgodfrey (9 votes)

[Does 'SeedRandom' give the same set of random numbers across operating systems?] <https://mathematica.stackexchange.com/questions/157621/does-seedrandom-give-the-same-set-of-random-numbers-across-operating-systems>

If I use

```
SeedRandom[12345]
RandomReal[{0,1},100]
```

I get the same random numbers on two versions of Mathematica: 10.4.1.0 on Windows 10 and 11.1.1.0 on Windows 7.

But does the same seed get the ...

- asked by JimB (9 votes), answered by halirutan (8 votes)

[Fill the data of an Association based on a list] <https://mathematica.stackexchange.com/questions/157852/fill-the-data-of-an-association-based-on-a-list>

Consider the following the list and association.

```
list1 = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};
asc = &lt;|1 -&gt; a, 4 -&gt; b, 7 -&gt; c, 10 -&gt; d|&gt;;
```

I would like to create an association which ...

- asked by Anjan Kumar (7 votes), answered by Kuba (5 votes)

[How to extract data points from two graphics and find the intersections between them?] <https://mathematica.stackexchange.com/questions/157787/how-to-extract-data-points-from-two-graphics-and-find-the-intersections-between>

I am working on a mathematical problem called "Buffon's Needle". Here is the setup I made:

```
point[v_, u_] := Normalize[v - u] + u
```

```
experiment50 = Show[
  Graphics[
    Table[{
      RGBColor[0, 0, 0],
      ...
    }
  ]
]
```

- asked by Anna Morales Melgares (7 votes), answered by kglr (7 votes)

[How to thread over ragged list while skipping empty sub-lists?] <https://mathematica.stackexchange.com/questions/157635/how-to-thread-over-ragged-list-while-skipping-empty-sub-lists>

I have a very large ragged list result that is a list of list of pairs where sometimes the sub-list contains the empty list.

```
res = {{{20, 1}, {200, 2}}, {}, {{175, 1}}};
```

In the above minimal ...

- asked by Edmund (7 votes), answered by kglr (9 votes)

=====
 Greatest hits from previous weeks: =====

[L^AT_EX and Mathematica] <https://mathematica.stackexchange.com/questions/736/latex-and-mathematica>

I quite often would like to draw graphics in my \LaTeX documents using Mathematica. I have encountered three problems. I would like to know if there are any workarounds to these problems

I would ...

- asked by Thomas Rot (108 votes), answered by Simon (40 votes)

[Code that generates a mandala] <https://mathematica.stackexchange.com/questions/136974/code-that-generates-a-mandala>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

examples

- asked by zeros (48 votes), answered by Anton Antonov (71 votes)

=====
 ===== Can you answer these?
 =====

[Export BatchNormalizationLayer as MXNet] <https://mathematica.stackexchange.com/questions/157856/export-batchnormalizationlayer-as-mxnet>

I just tried to import a net from mathematica into pythons using MXNet. It works fine with the following manual.

However, as soon as I try to add a BatchNormalizationLayer to my net MXNets bind()
 ...

- asked by MaxJ (3 votes)

[ListPlot point colors by list of colorfunctions] <https://mathematica.stackexchange.com/questions/157963/listplot-point-colors-by-list-of-colorfunctions>

I would like to display the positions of a collection of particles as a function of time (animated) and color code them based on their velocities. For example, consider 10 particles moving in a 2D ...

- asked by SeanM (1 vote)

[Why are Label Pixelated?] <https://mathematica.stackexchange.com/questions/157693/why-are-label-pixelated>

It seems that Mathematica implements the processing of labels quite different for different plot-functions.

The good ->

Plot[]:

```
l1 = GraphPlot[Table[i -&gt; 1, {i, 0, 1}]]
TPlot = Plot[{Cos[x], ...
```

- asked by Freeman (2 votes)

4.11 Tuesday, October 10, 2017

=====

Top new questions this week:

=====

[How can I determine the type of a packed array?] <https://mathematica.stackexchange.com/questions/157484/how-can-i-determine-the-type-of-a-packed-array>

Packed arrays can be of type Integer, Real or Complex. Knowing that an array arr is packed, how can I efficiently determine its type?

- asked by Szabolcs (15 votes), answered by Szabolcs (17 votes)

[Deleting sublists from lists] <https://mathematica.stackexchange.com/questions/157267/deleting-sublists-from-lists>

I have a list consisting of symbols and integers. I would like to delete the integers from the list only if a symbol precedes and follows each integer:

```
testList={a,b,3,c,4,5,d,e,f,1,g,4}
```

becomes:

...

- asked by Suite401 (12 votes), answered by jjc385 (13 votes)

[Summation bug in 11.2] <https://mathematica.stackexchange.com/questions/157290/summation-bug-in-11-2>

If I sum all the positive-numbered Fourier coefficients of $\cos(x)$, I get the correct answer. If I sum the negative-numbered ones, I get a wrong answer. Splitting the sum into two parts somehow ...

- asked by level1807 (10 votes), answered by Michael E2 (14 votes)

[Calculating the size of objects in the picture] <https://mathematica.stackexchange.com/questions/157374/calculating-the-size-of-objects-in-the-picture>

I'm new to Wolfram Mathematica. I have an initial image:

My goal is to find a radius of the water drop, like so:

With that in mind, I've changed the initial photo:

```
resultImage = ...
```

- asked by Elias (9 votes), answered by b3m2a1 (7 votes)

[Overlapping graphic primitives] <https://mathematica.stackexchange.com/questions/157489/overlapping-graphic-primitives>

I am trying to make a figure in Mathematica using some graphic primitives:

```
rod[l_, r_] := GraphicsGroup[{Opacity[.1], {Disk[{-1/2 + r, 0},
  r, {\[Pi]/2, 3 \[Pi]/2}], {Disk[{1/2 - r, 0},
  r, ...
```

- asked by Ruud3.1415 (7 votes), answered by kglr (3 votes)

[How can I implement my own documentation search function?] <https://mathematica.stackexchange.com/questions/157303/how-can-i-implement-my-own-documentation-search-function>

The current documentation search doesn't allow for very sophisticate searching, can I write my own function to search through the docs?

- asked by b3m2a1 (7 votes), answered by b3m2a1 (8 votes)

[Can I implement something like the old documentation help browser?] <https://mathematica.stackexchange.com/questions/157317/can-i-implement-something-like-the-old-documentation-help-browser>

Old versions of Mathematica had a help browser that was more click through and structured. How can I reimplement something like that for the new (since v6) docs?

- asked by b3m2a1 (6 votes), answered by b3m2a1 (10 votes)

=====
 Greatest hits from previous weeks: =====

[What are the most common pitfalls awaiting new users?] <https://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by Dr. belisarius (405 votes), answered by Michael E2 (235 votes)

[How do I clear all user defined symbols?] <https://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation > Quit kernel and firing a new one up?

- asked by niklasfi (58 votes), answered by Artes (56 votes)

=====
 Can you answer these? =====

[Memoization of built in function] <https://mathematica.stackexchange.com/questions/157429/memoization-of-built-in-function>

What is the best way to let mathematica memoize built-in function like e.g.

`SphericalHarmonicY[l,m,th,ph]`

One possibility would be for sure:

```
sphericalHarmonicY[l_,m_,th_,ph_]:= ...
```

- asked by Mr Puh (3 votes)

[Can't import Gluon into mma] <https://mathematica.stackexchange.com/questions/157466/cant-import-gluon-into-mma>

This is a simple DNN from Fast, portable neural networks with Gluon HybridBlocks:

This is json file and params file of Gluon(MXNet)

```
import mxnet as mx from mxnet.gluon import nn print("mxnet ...
```

- asked by partida (4 votes)

[NIntegrate and definite Integrate give different results] <https://mathematica.stackexchange.com/questions/157300/nintegrate-and-definite-integrate-give-different-results>

Suppose the function

$$f[x_, q_] = (15876 \text{Exp}[-0.527076 q^2] (x^2 - 2 x + 2) \text{SphericalBesselJ}[1, 5 q])^2 (q^2 - 8100 x^2)$$

I need to perform the integration over q in the domain ...

- asked by John Taylor (1 vote)

4.12 Tuesday, October 3, 2017

=====
 Top new questions this week:
 =====

[Frown for a sex change, or, how do I unwork the "FacialGender" classifier in 11.2?] <https://mathematica.stackexchange.com/questions/156847/frown-for-a-sex-change-or-how-do-i-unwork-the-facialgender-classifier-in-11>

The limits of machine learning. I thought the new "FacialGender" option for Classifier would be an amusing thing to explore.

So far, so good. But that's me with bed-head. So let's try a picture ...

- asked by Verbeia (17 votes), answered by Searke (2 votes)

[Improve the mesh smoothing procedure] <https://mathematica.stackexchange.com/questions/156611/improve-the-mesh-smoothing-procedure>

My question is inspired by this answer about meshing with quadrilateral elements.

The following functions are my (naive) try of implementing the Laplacian smoothing. I find interior nodes in the mesh ...

- asked by Pinti (11 votes), answered by user21 (10 votes)

[Possible bug in RegionUnion or related functions?] <https://mathematica.stackexchange.com/questions/157031/possible-bug-in-regionunion-or-related-functions>

Functions for derived geometric regions (`RegionUnion` and related) have been significantly updated in MMA 11.2 and now this simple example doesn't work any more as expected. Could this be a bug or I am ...

- asked by Pinti (8 votes), answered by Szabolcs (5 votes)

[Dataset - append row with a value which depends on two other rows] <https://mathematica.stackexchange.com/questions/156980/dataset-append-row-with-a-value-which-depends-on-two-other-rows>

I have go through the forum but did not see this question. Hope I don't miss it.

I want to add a new colum "C" to a dataset with existing columns named "A" and "B". The value of "C" shall be the ...

- asked by Porty (7 votes), answered by WReach (6 votes)

[How to tell Mathematica to do this with decimal part of real number?] <https://mathematica.stackexchange.com/questions/156823/how-to-tell-mathematica-to-do-this-with-decimal-part-of-real-number>

My apologies if this was asked here before.

My friend and I want to do this:

Suppose that we have some real number $a.a_1a_2...a_n...$ where a_i are digits in the set $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 0\}$...

- asked by Antoine de Paladin (7 votes), answered by Edmund (6 votes)

[FullForm of b/c and c/b with different order] <https://mathematica.stackexchange.com/questions/156757/fullform-of-b-c-and-c-b-with-different-order>

I am studying Mathematica myself and doing some exercises for improvement.

Question: Try to guess the internal forms of b/c and c/b. Verify your answer using FullForm.

Here is what I got by ...

- asked by anhnha (7 votes), answered by Mr.Wizard (6 votes)

[Generate random walk on a graph] <https://mathematica.stackexchange.com/questions/156626/generate-random-walk-on-a-graph>

I have a graph with 100 nodes and 200 edges. How can I generate a random walk in it and animate it?

- asked by nasha amalina (7 votes), answered by rhermans (13 votes)

=====
Greatest hits from previous weeks: =====

[How to find the position of elements in a list satisfying criteria] <https://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria>

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements that are greater than 7.

Select[x, #>7&] gives the elements themselves, and Position[x,8] gives the ...

- asked by PeterR (47 votes), answered by J. M. (45 votes)

[How to calculate contour integrals with Mathematica?] <https://mathematica.stackexchange.com/questions/34073/how-to-calculate-contour-integrals-with-mathematica>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

- asked by user64494 (30 votes), answered by Artes (53 votes)

=====
Can you answer these? =====

[How to decode Ascii85 format (AKA base85)?] <https://mathematica.stackexchange.com/questions/156667/how-to-decode-ascii85-format-aka-base85>

The ASCII85 encoding is a binary string encoding where every four bytes are encoded with five ASCII letters, using 85 different types of characters.

Unfortunately, it's not in \$CharacterEncodings:

...

- asked by M.R. (2 votes)

[FIR filter and the relation between Sample rate and cut-off frequency] <https://mathematica.stackexchange.com/questions/156685/fir-filter-and-the-relation-between-sample-rate-and-cut-off-frequency>

I have problem to understand the logic of the cut-off frequency of the FIR filter. Suppose my sample rate is 2MHz and I want to design a lowpass filter with a cut-off frequency 100Hz. What will be ...

- asked by shabir barzanjeh (2 votes)

[FindCluster only finds cluster "with a little help"] <https://mathematica.stackexchange.com/questions/156984/findcluster-only-finds-cluster-with-a-little-help>

Currently I made some slides to illustrate clustering. As an example I made a point set of two clusters:

```
{clusters, graph} = Block[{c1, c2, cluster1, cluster2},
  c1 = {1, 2};
  cluster1 = (# + ...
```

- asked by mgamer (4 votes)

4.13 Tuesday, September 26, 2017

=====
 Top new questions this week:
 =====

[Finite element mesh not resolving features] <https://mathematica.stackexchange.com/questions/156174/finite-element-mesh-not-resolving-features>

I am trying to make a finite element mesh in 2D. The features are not found by ToElementMesh. This is a shelf bracket with nails. I build the region using RegionDifference and RegionUnion and the ...

- asked by Hugh (11 votes), answered by Young (9 votes)

[Are the mail settings as given in preferences still programmatically accessible in V 11.2] <https://mathematica.stackexchange.com/questions/156183/are-the-mail-settings-as-given-in-preferences-still-programmatically-accessible>

In versions before 11.2 (and after 9) one could get the current settings as defined in the preferences (Internet & Email -> Mail Settings) with Options[SendMail]. As the options for SendMail have ...

- asked by Albert Retey (11 votes), answered by rhermans (9 votes)

[Implement fractional Laplacian] <https://mathematica.stackexchange.com/questions/156420/implement-fractional-laplacian>

What is a way to implement the Fractional Laplacian with Mathematica?

How can we apply such implementation to numerically solve the problem

$$\begin{aligned} & \Delta^s u = 1 \quad \text{in } B_1(0), \\ & u = 0 \quad \text{in } \dots \end{aligned}$$

- asked by Jay (9 votes), answered by Henrik Schumacher (14 votes)

[Blur, GaussianFilter and ImageConvolve doesn't work on some images] <https://mathematica.stackexchange.com/questions/156210/blur-gaussianfilter-and-imageconvolve-doesnt-work-on-some-images>

In versions 8.0.4 and 9.0.1 applying Blur to an image gives expected result:

```
img = Import["http://i.stack.imgur.com/UsJTa.png"]
```

```
blurred = Blur[img, 5]
```

```
ColorSeparate[blurred]
```

But ...

- asked by Alexey Popkov (9 votes), answered by Alexey Popkov (11 votes)

[Error and uncertainty propagation: Is using Precision/Accuracy a sound strategy?] <https://mathematica.stackexchange.com/questions/156481/error-and-uncertainty-propagation-is-using-precision-accuracy-a-sound-strategy>

Questions

What are the available resources to deal with experimental error and uncertainty propagation in Mathematica? Given that Mathematica already uses linearized model of error propagation on ...

- asked by rhermans (8 votes)

[Unexpected behavior using 'ReplaceAll[]' for nested lists] <https://mathematica.stackexchange.com/questions/156538/unexpected-behavior-using-replaceall-for-nested-lists>

ReplaceAll[] might lead to unexpected behavior (at least it surprised me). I use ReplaceAll[] to convert a list (basically data cleanup).

For the command:

```
{{1, "2"}, {2, "3"}} /. {x_, _ } :&gt; {x, ...
```

- asked by Dennis (7 votes), answered by Szabolcs (9 votes)

[What are the possible Method option values for plotting functions?] <https://mathematica.stackexchange.com/questions/156475/what-are-the-possible-method-option-values-for-plotting-functions>

Many plotting functions have a Method options with descriptions like this:

Plot: "the method to use for refining curves" RegionPlot: "the method to use for refining regions" ContourPlot: "the method ...

- asked by Szabolcs (7 votes)

==== Greatest hits from previous weeks: =====

[How to perform a multi-peak fitting?] <https://mathematica.stackexchange.com/questions/26336/how-to-perform-a-multi-peak-fitting>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data \sim peak1 + peak2 + peak3).

The ...

- asked by Everett You (46 votes), answered by Silvia (47 votes)

[How do I clear all user defined symbols?] <https://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

- asked by niklasfi (55 votes), answered by Artes (54 votes)

==== Can you answer these? =====

[Possible Symbolic Integration Bug] <https://mathematica.stackexchange.com/questions/156215/possible-symbolic-integration-bug>

Bug introduced between 5 and 8 and persisting through 11.2

I think I may have found a bug, and want to verify is this reproducible in other versions and platforms and not a mistake of mine.

I ...

- asked by yyli (5 votes)

[Finding the slowest decay to a value for a 2D function] <https://mathematica.stackexchange.com/questions/156338/finding-the-slowest-decay-to-a-value-for-a-2d-function>

I have a function `acf2[x,y]` that describes the auto-correlation function of a simulated real surface, with a peak at the origin (`acf2[0,0] = 1`), and need to find the maximum distance from the origin ...

- asked by L.Todhunter (1 vote)

[Can Mathematica run javascript on a website?] <https://mathematica.stackexchange.com/questions/156377/can-mathematica-run-javascript-on-a-website>

One way of running Javascript on a website is to use for instance Greasemonkey. By any chance, would it be possible to execute Javascript commands from Mathematica?

- asked by anderstood (1 vote)

4.14 Tuesday, September 19, 2017

=====

Top new questions this week:

=====

[Pop-up appeared and then disappeared during first documentation search in 11.2] <https://mathematica.stackexchange.com/questions/155717/pop-up-appeared-and-then-disappeared-during-first-documentation-search-in-11-2>

After installing Mathematica 11.2, the first time I searched for something in the help center a pop-up appeared and then disappeared. It didn't appear on a subsequent search, even if I restarted ...

- asked by Itai Seggev (23 votes), answered by Itai Seggev (26 votes)

[ExternalEvaluate for Python fails with Import::nopythonevals] <https://mathematica.stackexchange.com/questions/155821/externalevaluate-for-python-fails-with-importnopythonevals>

I tried using ExternalEvaluate on OS X with Anaconda Python, and every ExternalEvaluate call failed with the Import::nopythonevals message. This happened even though an external evaluator was ...

- asked by Szabolcs (15 votes), answered by Szabolcs (12 votes)

[Visualizing a holomorphic bijection between the unit disc and a domain] <https://mathematica.stackexchange.com/questions/155954/visualizing-a-holomorphic-bijection-between-the-unit-disc-and-a-domain>

One can construct a holomorphic bijection between the (open) unit disc $D = \{z \in \mathbf{C} : |z| < 1\}$, and a domain $D \setminus \overline{B_{1/2}(-1/2)}$ where $B_r(z_0)$ denotes the ball of radius r ...

- asked by Jack (12 votes), answered by Michael E2 (13 votes)

[How to create search indices for custom documentation pages?] <https://mathematica.stackexchange.com/questions/155932/how-to-create-search-indices-for-custom-documentation-pages>

I have a package that uses custom documentation pages that are not generated with Wolfram Workbench.

How can I create search indices for these pages?

Requirements:

Searching should work in ...

- asked by Szabolcs (10 votes), answered by Szabolcs (1 vote)

[Compile M11.1-compatible LibraryLink libraries using M11.2] <https://mathematica.stackexchange.com/questions/155940/compile-m11-1-compatible-librarylink-libraries-using-m11-2>

WolframLibraryVersion, defined in WolframLibrary.h, was bumped from 3 to 4 in Mathematica 11.2. This causes libraries compiled with M11.2 to fail to load in earlier versions.

Is it possible to ...

- asked by Szabolcs (9 votes)

[How to insert dimensions in graphics?] <https://mathematica.stackexchange.com/questions/155677/how-to-insert-dimensions-in-graphics>

I'm creating figures (a T beam section) using the Graphics function. Like this:

```
a = Graphics[Polygon[{{0, 80}, {0, 85}, {100, 85}, {100, 80}}]];
b = Graphics[Polygon[{{47.5, 80}, {52.5, 80}, {52.5, ...
```

- asked by Diogo (9 votes), answered by wxffles (10 votes)

[Mathematica 11.2 Import Statement Produces Errors & Truncates CSV Data Created in 11.1] <https://mathematica.stackexchange.com/questions/155908/mathematica-11-2-import-statement-produces-errors-truncates-csv-data-created-i>

Bug introduced in 11.2.0

TL;DR

Issue 1 (bug): Import of CSV files with column specification fails when "HeaderLines" or "SkipLines" option is used:

```
Import["ExampleData/financialtimeseries.csv", ...
```

- asked by Joseph Karpinski (8 votes), answered by Itai Seggev (8 votes)

==== Greatest hits from previous weeks: =====

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc] <https://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations (expectation values etc.) by running them through Mathematica. When I say, for example,

```
u[x_] := Sqrt[2/L] * Sin[Pi * n * x / L]
```

and then ...

- asked by Matthew Brunetti (17 votes), answered by SquareOne (11 votes)

[How do I clear all user defined symbols?] <https://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation > Quit kernel and firing a new one up?

- asked by niklasfi (55 votes), answered by Artes (54 votes)

=====
 ===== Can you answer these?
 =====

[Covariant derivative given Christoffel symbols] <https://mathematica.stackexchange.com/questions/155871/covariant-derivative-given-christoffel-symbols>

I've been trying to take covariant derivative of various quantities along various surfaces in Mathematica, but I keep running into issues, frequently I get a tensor with the wrong dimension. Using the ...

- asked by Noahb32 (1 vote)

[How to pass in-memory images through ExternalEvaluate?] <https://mathematica.stackexchange.com/questions/156051/how-to-pass-in-memory-images-through-externalevaluate>

Version 11.2 has a new import/export format PythonExpression.

Unfortunately, it doesn't work out-of-the-box with images:

And using the ImageData directly is too slow:

Anyhow, I have some image ...

- asked by M.R. (4 votes)

[GeneralizedLinearModelFit IRwLS] <https://mathematica.stackexchange.com/questions/155692/generalizedlinearmodelfit-irwls>

I'm interested in Mathematica's capabilities with regard to robust fitting vs. outliers. In the Statistical Model Analysis Tutorial under the Generalized Linear Models section heading, there is this ...

- asked by Chris Chiasson (1 vote)

4.15 Tuesday, September 12, 2017

=====

Top new questions this week:

=====

[Framework behind Graph plots. DynamicNamespace and friends] <https://mathematica.stackexchange.com/questions/155237/framework-behind-graph-plots-dynamicnamespace-and-friends>

As shown in DynamicLocation usage, we can use it to quickly create very nice functionality, that it to refer to graphics' primitives relative coordinates without calculations of boundary etc.

As ...

- asked by Kuba (15 votes), answered by Kuba (12 votes)

[DynamicLocation usage] <https://mathematica.stackexchange.com/questions/155157/dynamiclocation-usage>

Background

DynamicLocation can be very useful:

```
LocatorPane[Dynamic@x,
  Graphics[
    { EdgeForm @ Thick, FaceForm @ None, Rectangle[BoxID -&gt; "box"]
    , Arrow[{Dynamic[x], ...
```

- asked by Kuba (14 votes), answered by b3m2a1 (9 votes)

[How can I use GitHub as a paclet server?] <https://mathematica.stackexchange.com/questions/155123/how-can-i-use-github-as-a-paclet-server>

I want to use GitHub as a paclet server, but this fails:

```
PacletInstall[
  "ServiceConnection_StackExchange",
  "Site" -&gt; "https://github.com/b3m2a1/PacletServer"
]
```

PacletSiteUpdate::err: An error ...

- asked by b3m2a1 (13 votes), answered by b3m2a1 (16 votes)

[Permanently extending the behaviour of functions (like decorators)] <https://mathematica.stackexchange.com/questions/155567/permanently-extending-the-behaviour-of-functions-like-decorators>

Suppose I have a function, e.g.

```
f[x_] := x^2
```

It works like this:

```
f[5]
(* 25 *)
```

I would like to permanently modify it so that calling `f[5]` will perform some action before and after the evaluation ...

- asked by Szabolcs (11 votes), answered by Leonid Shifrin (9 votes)

[Is Tooltip broken in MMA 11.1.1?] <https://mathematica.stackexchange.com/questions/155434/is-tooltip-broken-in-mma-11-1-1>

Bug introduced in 11.1.0 and persisting through 11.1.1

I have just discovered that Tooltip works differently from as described in the documentation, at least in my version of MMA (11.1.1.0, Windows ...

- asked by Oleg Soloviev (9 votes)

[Install paclets into \$BaseDirectory on multi-user system] <https://mathematica.stackexchange.com/questions/155122/install-paclets-into-basedirectory-on-multi-user-system>

PacletInstall will install paclets into the \$UserBaseDirectory by default. How can we install them in \$BaseDirectory so that all users on the system will have access? Is this currently possible?

...

- asked by Szabolcs (9 votes), answered by halirutan (5 votes)

[How can I reproduce the result of PrincipalComponents] <https://mathematica.stackexchange.com/questions/155467/how-can-i-reproduce-the-result-of-principalcomponents>

```
matrix = N[{{1, 2}, {2, 3}, {4, 10}}]
        {{1., 2.}, {2., 3.}, {4., 10.}}
```

```
res1 = PrincipalComponents[matrix, Method -> "Correlation"]
      {{1.10388, 0.130549}, {0.478746, -0.170139}, {-1.58262, ...
```

- asked by HyperGroups (8 votes), answered by J. M. (13 votes)

=====
Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <https://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (52 votes), answered by Artes (40 votes)

[What does # mean in Mathematica?] <https://mathematica.stackexchange.com/questions/19035/what-does-mean-in-mathematica>

I asked Mathematica to compute the following

```
Solve[c (1-x)^2-x^(1/4) == 0, x]
```

and it returned this:

```
x = Root[#1^8 c^4 - 8 #1^7 c^4 + 28 #1^6 c^4 - 56 #1^5 c^4 + 70 #1^4 c^4 - 56 #1^3 c^4 - 8 #1^2 c^4 + 8 #1 c^4 - c^4, #1]
```

- asked by rononymous (20 votes), answered by Dr. belisarius (43 votes)

=====
Can you answer these? =====

[Question about RandomSeed option in AdaptiveMonteCarlo NIntegrate method] <https://mathematica.stackexchange.com/questions/155249/question-about-randomseed-option-in-adaptivemontecarlo-nintegrate-method>

I've been familiarising myself with the different options available in the AdaptiveMonteCarlo method for NIntegrate but one of the things that I can't really understand is what the numbers correspond ...

- asked by user35305 (1 vote)

[Delete duplicates in a list compiled of different lists and also delete] <https://mathematica.stackexchange.com/questions/155261/delete-duplicates-in-a-list-compiled-of-different-lists-and-also-delete>

I've got three lists: Lst1 has 100 different values for "r".

Lst2 has 100 different values for "a". And $Lst3 = \text{Pi} * Lst1^2 * Lst2$.

In Lst3 I've got duplicates and I want to get rid of them, but I also want ...

- asked by Cornelis (1 vote)

[How to implement LinkLaunch-like functionality with timeout?] <https://mathematica.stackexchange.com/questions/155493/how-to-implement-linklaunch-like-functionality-with-timeout>

tl;dr: What is the best way (and correct sequence of operations) to connect two programs using MathLink while anticipating failures / timeouts?

Launch program and connect, with timeout

I have a ...

- asked by Szabolcs (4 votes)

4.16 Tuesday, September 5, 2017

=====

Top new questions this week:

=====

[Finding n^{th} largest/smallest element] <https://mathematica.stackexchange.com/questions/154944/finding-n-textth-largest-smallest-element>

Ordering can quickly find the position of the largest/smallest element in a list, but finding the position of the n^{th} largest/smallest element is much slower:

```
data = RandomReal[10, 10^7];
```

...

- asked by Carl Woll (13 votes), answered by Carl Woll (12 votes)

[Fast pairwise SameQ test of an ordered list] <https://mathematica.stackexchange.com/questions/155017/fast-pairwise-sameq-test-of-an-ordered-list>

I have an ordered list of N numbers, and I want to find out whether adjacent numbers are SameQ or not, returning a list of 0s and 1s of length $N - 1$. One approach is something like:

...

- asked by Carl Woll (11 votes), answered by jkuczm (8 votes)

[Given an ordered set S , find the points in S corresponding to another list] <https://mathematica.stackexchange.com/questions/154893/given-an-ordered-set-s-find-the-points-in-s-corresponding-to-another-list>

Given a sorted list of numbers S , I want to create a function that accepts a list of numbers L and for each number $l \in L$ it returns the index of the largest number $s \in S$ such that ...

- asked by Carl Woll (11 votes), answered by niki (13 votes)

[Geolocate multiple IP addresses] <https://mathematica.stackexchange.com/questions/155076/geolocate-multiple-ip-addresses>

I would like to geolocate a few hundred IP addresses (as part of analysing server logs). What is the best way to do this using Mathematica?

Does Mathematica have any builtin functionality for this?

...

- asked by Szabolcs (9 votes), answered by Szabolcs (9 votes)

[How to connect two images] <https://mathematica.stackexchange.com/questions/155093/how-to-connect-two-images>

I have talk about how to catenate two images whose have same part totally in my this post.

But in this case two images have similar information, not totally same.

```
img1 = Import @ ...
```

- asked by yode (9 votes), answered by Kuba (8 votes)

[Filter elements in descending order] <https://mathematica.stackexchange.com/questions/154761/filter-elements-in-descending-order>

I want to solve the following problem efficiently:

Given a list of pairs (value, data), I want to remove all the pairs so that the resulting list has the value property of its elements sorted. That ...

- asked by José D. (9 votes), answered by Mathel72 (9 votes)

[Changing numbers inside list to a list] <https://mathematica.stackexchange.com/questions/154911/changing-numbers-inside-list-to-a-list>

I have a list wich contains numbers and other lists, and what I want is to change every number x to $x,0$.

So if the function I'm seeking is called f , then

```
a = {1, Pi, 2+3I, {1, 2}, {3, 4}, -2}
```

```
f[a] ...
```

- asked by Garmekain (8 votes), answered by John Joseph M. Carrasco (10 votes)

=====
Greatest hits from previous weeks: =====

[Is it possible to draw this figure using Mathematica?] <https://mathematica.stackexchange.com/questions/110848/is-it-possible-to-draw-this-figure-using-mathematica>

The figure is

See the how-to video or a speeded-up GIF.

I believe it should be possible to draw this figure programmatically using some Random function, but I'm rather new to Mathematica, so I ...

- asked by AccidentalFourierTransform (62 votes), answered by M.R. (86 votes)

[Can Mathematica do symbolic linear algebra?] <https://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, Simplify[Transpose[Transpose[A].Transpose[B]]]" and Mathematica would simplify it to B.A? ...

- asked by niki (47 votes), answered by helen (25 votes)

===== Can you answer these?
=====

[Strange result for an improper integral $\int_0^1 \frac{x^{-1/2}}{e^x - 1} \sin\left(\frac{1}{x}\right) dx$] <https://mathematica.stackexchange.com/questions/155066/strange-result-for-an-improper-integral-int-01-fracx-1-2ex-1-s>

The improper integral

$$\int_0^1 \frac{x^{-1/2}}{e^x - 1} \sin\left(\frac{1}{x}\right) dx$$

is convergent conditionally.

(Applying Dirichlet Test,

$$\frac{x^{-1/2}}{e^x - 1}$$

...

- asked by user250236 (1 vote)

[Perplexing simplification of RotationMatrix] <https://mathematica.stackexchange.com/questions/154793/perplexing-simplification-of-rotationmatrix>

The result of

FullSimplify[RotationMatrix[, {Cos[], Sin[], 0}], > 0].{0, 0, 1}

in Mathematica 11 is

{Sign[Sec[]]^2 Sin[] Sin[], -Cos[] Sin[], Cos[]}

instead of the nicer result ...

- asked by theindigamer (1 vote)

[collecting terms with different order] <https://mathematica.stackexchange.com/questions/154849/collecting-terms-with-different-order>

I am using homotopy perturbation method to solve nonlinear ODE.

The first step is to introduce P parameter and collect different order of P.

The code is like this:

```
Collect[(1 -
  p) (((1 +
    ...
```

- asked by sajad.sharhani (1 vote)

4.17 Tuesday, August 29, 2017

=====

Top new questions this week:

=====

[Inserting some zeros in a list by a rule of positions] <https://mathematica.stackexchange.com/questions/154551/inserting-some-zeros-in-a-list-by-a-rule-of-positions>

I have a list:

```
mainlist={0.23, 0.34, 0.8, 0.0, -0.2, 0.4, -0.1};
```

I have to extend the above list to another one finalresult with Length=17. But in finalresult the elements of the mainlist must be ...

- asked by Inzo Babaria (12 votes), answered by John Joseph M. Carrasco (14 votes)

[How to use Streaming package in v11.1?] <https://mathematica.stackexchange.com/questions/154439/how-to-use-streaming-package-in-v11-1>

I am trying to use the streaming package for lazy list operations demonstrated in this post. But I found that the package was significantly changed in version 11. After some observations, I found that ...

- asked by happy fish (11 votes), answered by Leonid Shifrin (9 votes)

[Interior of discretized region] <https://mathematica.stackexchange.com/questions/154544/interior-of-discretized-region>

I have some domain of interest:

```
r = 0.3;
dom = ImplicitRegion[(x - 1/2)^2 + (y - 1/2)^2 >= r^2, {{x, 0, 1}, {y, 0, 1}}];
```

Now I can extract mesh of the whole domain or just boundary:

...

- asked by user16320 (9 votes), answered by C. E. (10 votes)

[Orientation of boundary domain normals] <https://mathematica.stackexchange.com/questions/154656/orientation-of-boundary-domain-normals>

I would like to use BoundaryNormals provided by the ElementMesh object. To demonstrate my problem I will take my favorite domain:

```
dom = ImplicitRegion[(x - 1/2)^2 + (y - 1/2)^2 >= (1/4)^2, {{x, 0, ...
```

- asked by user16320 (8 votes), answered by user16320 (4 votes)

[Best Practices for Creating CDF e-textbook] <https://mathematica.stackexchange.com/questions/154550/best-practices-for-creating-cdf-e-textbook>

I attended a talk given by Eric Schulz a few years ago. It was similar to his talk "Sharing Wisdom Gained from Publishing a CDF Ebook" given here. I am Math instructor and have been creating ...

- asked by Michael McCain (8 votes)

[Markdown parser in Mathematica] <https://mathematica.stackexchange.com/questions/154634/markdown-parser-in-mathematica>

Is there already a markdown to XML parser implemented in Mathematica? I wrote a one for my pelican rewrite, but realized I should have asked here first. Mine is almost certainly faulty in a few major ...

- asked by b3m2a1 (7 votes), answered by b3m2a1 (3 votes)

[ListContourPlot with hatched regions] <https://mathematica.stackexchange.com/questions/154481/listcontourplot-with-hatched-regions>

I'm using ListContourPlot on a table of data, and I'd like to hash the regions rather than colour them, so the plot works in black and white.

```
data = Flatten[Table[{x, y, Cos[x] + Cos[y]}, {x, 0, 3, ...
```

- asked by KraZug (7 votes), answered by John Joseph M. Carrasco (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Creating legends for plots with multiple lines?] <https://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . .}
```

If I then do `ListLinePlot[Table[Log[b,#2]&@@@data, {b,1,10,2}]]`
 I have no way to generate a legend ...

- asked by Eiyriou von Kauyf (61 votes), answered by Jens (91 votes)

[Learn Mathematica (Wolfram) Language in one day] <https://mathematica.stackexchange.com/questions/138366/learn-mathematica-wolfram-language-in-one-day>

Currently I am trying to learn Python. Searching for relevant material I came across X in Y minutes

and books with titles such as Learn Python in one day, in 24 hours, etc.

Similar material exists ...

- asked by dimitris (26 votes), answered by masterxilo (11 votes)

=====
 ===== Can you answer these? =====

[NetTrain with External GPU?] <https://mathematica.stackexchange.com/questions/154380/nettrain-with-external-gpu>

I'd like to use the new Neural Networks functionalities in v11 on my Macbook Pro, unfortunately, most macs do not have the supported Nvidia cards. However, there is the option for using an external ...

- asked by M.R. (3 votes)

[Solution (numerical or symbolic) of functional equations?] <https://mathematica.stackexchange.com/questions/154515/solution-numerical-or-symbolic-of-functional-equations>

Can I solve functional equations with Mathematica? How?

For example, I am trying to solve:

$$\frac{F(x)}{F(1)} = 2F\left(\frac{(1+x)^2}{4a}\right) - F(x/a)$$

for specific values of a . Can ...

- asked by becko (1 vote)

[Amplitude of a transfer function] <https://mathematica.stackexchange.com/questions/154489/amplitude-of-a-transfer-function>

I'm looking to calculate the amplitude of a transfer function which is defined in a symbolic way :

$$T = (1 + 2 I r) / (1 - r^2 + 2 I r)$$

I try this, it doesn't work

Assuming[{ $r > 0$, $r > 0$ }, ...

- asked by Bendesarts (1 vote)

4.18 Tuesday, August 22, 2017

=====
 Top new questions this week:
 =====

[Mathematica vs. Comsol for finite element analysis?] <https://mathematica.stackexchange.com/questions/154254/mathematica-vs-comsol-for-finite-element-analysis>

Being relatively new to finite element analysis, I was wondering how expert users assess Mathematica's capabilities in solving PDEs via the finite element method compared to other commercial tools ...

- asked by Alexander Erlich (13 votes), answered by Alexei Boulbitch (7 votes)

[Mathematica Syntax Coloring in GitHub README] <https://mathematica.stackexchange.com/questions/153836/mathematica-syntax-coloring-in-github-readme>

GitHub doesn't auto-detect and color Mathematica code in its markdown. Can we make it do so?

This may be trivial, but many README files don't seem to have it.

- asked by b3m2a1 (10 votes), answered by b3m2a1 (13 votes)

[HoldPattern vs Unevaluated] <https://mathematica.stackexchange.com/questions/153844/holdpattern-vs-unevaluated>

For learning purposes I created this code:

```
{g, 3*(10 + g)} /. HoldPattern[Plus[t_]] :> (Plus[t] /. g -> h)
```

I am learning about HoldPattern. As I understand it HoldPattern makes sure that the ...

- asked by GambitSquared (8 votes), answered by Mr.Wizard (9 votes)

[Who is to blame: parsing UTF8 encoded JSON HTTPResponse fails] <https://mathematica.stackexchange.com/questions/154245/who-is-to-blame-parsing-utf8-encoded-json-httpresponse-fails>

Background

V11.1.1 I'm using URLRead to fetch some data,

can't show everything but headers contain:

```
"content-type:>application/json; charset=utf-8"
```

and body (returned from URLRead) contains ...

- asked by Kuba (7 votes), answered by Alexey Popkov (5 votes)

[Number elements in a list] <https://mathematica.stackexchange.com/questions/153951/number-elements-in-a-list>

I'm trying to learn more about list replacement without using Table. I have a list like this:

```
list = {{{"a", "b", "c"}, {"d", "e", "f"}, {"g", "h", "i"}}
```

Now, I want to modify the list elements, ...

- asked by holistic (7 votes), answered by MarcoB (9 votes)

[Fill a sphere above an arbitrary curve] <https://mathematica.stackexchange.com/questions/153994/fill-a-sphere-above-an-arbitrary-curve>

I have a function which generates a curve on the surface of a unit sphere, parameterised by the azimuthal angle. How can I plot a sphere with two different colour above and below this curve?

```
f[t_] := ...
```

- asked by Tom (6 votes), answered by Kuba (9 votes)

[is it possible to change/customize some conversions done by TeXForm?] <https://mathematica.stackexchange.com/questions/153876/is-it-possible-to-change-customize-some-conversions-done-by-texform>

I use TeXForm to convert output of some computation to Latex. I'd like to ask if there is a way to override/change/customize some of these conversions, related to just the name Mathematica assigns to ...

- asked by Nasser (6 votes), answered by jkuczm (7 votes)

==== Greatest hits from previous weeks: =====

[How to manipulate 2D plots?] <https://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by István Zachar (122 votes), answered by István Zachar (137 votes)

[Mathematica erroneously says this integral does not converge] <https://mathematica.stackexchange.com/questions/144965/mathematica-erroneously-says-this-integral-does-not-converge>

Mathematica (as of v. 11.1.0) does not recognize that this special case of Frullani's integral converges:

```
Integrate[(ArcTan[a*x] - ArcTan[b*x])/x, {x, 0, Infinity}]
(* Integrate::idiv: Integral of ...
```

- asked by Pillsy (14 votes), answered by Michael E2 (20 votes)

==== Can you answer these? =====

[Is there a good explanation of the output of FeatureExtract anywhere?] <https://mathematica.stackexchange.com/questions/154044/is-there-a-good-explanation-of-the-output-of-featureextract-anywhere>

I have been looking at the official documentation of FeatureExtract, and I'm having a bit of difficulty interpreting the output—or understanding the reasons for some of the choices that were made. ...

- asked by Shredderroy (1 vote)

[How to work out sums symbolically?] <https://mathematica.stackexchange.com/questions/153820/how-to-work-out-sums-symbolically>

Intro

Consider these two equal expressions of the variance

$$\frac{\sum_{i=1}^n x(i)^2}{n} - \frac{(\sum_{i=1}^n x(i))^2}{n^2}$$

and

$$\frac{\sum_{i=1}^n \left(x(i) - \frac{\sum_{i=1}^n x(i)}{n}\right)^2}{n}$$
 ...

- asked by Remi.b (1 vote)

[Expectation value of standard deviation] <https://mathematica.stackexchange.com/questions/153848/expectation-value-of-standard-deviation>

I was trying to calculate the expectation value of the standard deviation, if I only take two data points into account. My code is the following:

```
n[x_] = PDF[NormalDistribution[ , ], x];
2[x1_, ...
```

- asked by Glostas (1 vote)

4.19 Tuesday, August 15, 2017

=====

Top new questions this week:

=====

[How to remove a paclet downloaded from Wolfram Research Server?] <https://mathematica.stackexchange.com/questions/153752/how-to-remove-a-paclet-downloaded-from-wolfram-research-server>

How can I remove a paclet that was automatically downloaded when I used a function for the first time (i.e. NetChain)?

I believe the download was faulty, preventing me from using any of the ...

- asked by mpourrah (8 votes), answered by Itai Seggev (10 votes)

[Best way to expand vocabulary of Mathematica functions?] <https://mathematica.stackexchange.com/questions/153469/best-way-to-expand-vocabulary-of-mathematica-functions>

I'm enjoying slowly learning Mathematica but noticing one skill I'm lacking is a comprehensive vocabulary of Mathematica functions. I was wondering if members would mind sharing some strategies they ...

- asked by BBirdsell (8 votes), answered by Nasser (9 votes)

[high pass filter without losing detail] <https://mathematica.stackexchange.com/questions/153414/high-pass-filter-without-losing-detail>

I have troubles doing a simple high pass filtering...

Downloading the test data <https://pastebin.com/74J8t2YV> as "test.dat", you can see that overlaid on the signal there are some low frequencies ...

- asked by alessandro (8 votes), answered by xzczd (7 votes)

[Accessing keys based on position in an association] <https://mathematica.stackexchange.com/questions/153689/accessing-keys-based-on-position-in-an-association>

I would like to have the following simple function "GetKey[]" on a very large association.

(* The actual Association is very large, this is just small example *)
 assoc = <|{1,1} -> 2, {1,2} ...

- asked by Iconoclast (7 votes), answered by Carl Woll (9 votes)

[How to calculate CellularAutomaton rule numbers in higher dimensions?] <https://mathematica.stackexchange.com/questions/153388/how-to-calculate-cellularautomaton-rule-numbers-in-higher-dimensions>

Where can I find documentation of the rule number convention for CellularAutomaton for higher than 1 dimension?

I understand the convention for elementary 1D automata, but I don't understand even ...

- asked by Mark S. (7 votes), answered by Vitaliy Kaurov (6 votes)

[Clicking on any Line of Code causes Plotted Points to Vanish] <https://mathematica.stackexchange.com/questions/153368/clicking-on-any-line-of-code-causes-plotted-points-to-vanish>

Bug detected in 11.1, apparently related but not identical to bug in 10.4. Reported to Worfram, Inc as CASE:3926732

\$Version

(* "11.1.1 for Microsoft Windows (64-bit) (April 18, 2017)" *)

p1 = ...

- asked by bbgodfrey (7 votes), answered by John Joseph M. Carrasco (3 votes)

[Puzzled about the behavior of NDSolve (ODE's involving Integrals)] <https://mathematica.stackexchange.com/questions/153624/puzzled-about-the-behavior-of-ndsolve-odes-involving-integrals>

Any idea why NDSolve can easily handle the first of these examples, but not the 2nd? I have a system of ODE's involving integrals without closed-form solutions, and keep getting the 2nd error message. ...

- asked by Andrea Wilson (6 votes), answered by Michael E2 (5 votes)

==== Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <https://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (52 votes), answered by Artes (40 votes)

[Is there an open source implementation of Mathematica-the-language?] <https://mathematica.stackexchange.com/questions/4454/is-there-an-open-source-implementation-of-mathematica-the-language>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

- asked by sblom (88 votes), answered by Simon (68 votes)

==== Can you answer these?
====

[Analysis of the periodic data by the maximum entropy method] <https://mathematica.stackexchange.com/questions/153487/analysis-of-the-periodic-data-by-the-maximum-entropy-method>

I am trying to get the frequency spectrum of a periodic data. Since the data set is short, the outcome of the frequency peaks are not sharp enough, which prevents me for further analysis. I know the ...

- asked by Phyman (1 vote)

[Plotting InterpolationFunction over Quantities] <https://mathematica.stackexchange.com/questions/153458/plotting-interpolationfunction-over-quantities>

What's the proper syntax to plot Interpolation functions defined over Quantities?

```
points = {{0, 0}, {1, 1}, {2, 3}, {3, 4}, {4, 3}, {5, 0}};
```

Change domain to Quantities:

```
points2 = points // ...
```


- asked by alancaivitti (2 votes)

[Fastest form of a function] <https://mathematica.stackexchange.com/questions/153602/fastest-form-of-a-function>

I'm trying to find the fastest form for a function. I have a few approaches with test results. The function I'm working with is the 3rd derivative of the incomplete beta function with respect to its ...

- asked by FalafelPita (1 vote)

4.20 Tuesday, August 8, 2017

=====

Top new questions this week:

=====

[Why can't I inject expressions in Compile using (only) With] <https://mathematica.stackexchange.com/questions/153064/why-cant-i-inject-expressions-in-compile-using-only-with>

Generally speaking, With can be used to inject into arbitrarily held expressions, for example:

```
With[{args = 2},
  Hold @ Hold @ HoldComplete[args]
]
(* Out[1]= Hold[Hold[HoldComplete[2]]] *)
...
```

- asked by glS (14 votes), answered by Leonid Shifrin (15 votes)

[Why Mathematica can not factorize polynomials over algebraic fields?] <https://mathematica.stackexchange.com/questions/152949/why-mathematica-can-not-factorize-polynomials-over-algebraic-fields>

I noticed that a factorization over algebraic fields is useless in Mathematica. Here is the example over the field containing $I\sqrt{3}$:

```
Pol=4 (3 I Sqrt[3] (-12 + 6 x - 4 x^2 + x^3) y^3 z +
9 (12 - ...
```

- asked by Aus Man (14 votes), answered by chyaong (11 votes)

[RegionMeasure is wrong for simple 1D Path] <https://mathematica.stackexchange.com/questions/153323/regionmeasure-is-wrong-for-simple-1d-path>

Bug introduced in 11.1

Take the simple path defined by a line through a set of points

```
pts = {{0, 0}, {0, 1.5}, {0.05, 1.5}, {0.05, 0.5}, {0.1, 0.5}, {0.1, 1.5},
{0.15, 1.5}, {0.15, 0.5}, {0.2, ...
```

- asked by Sascha (13 votes), answered by Michael E2 (8 votes)

[Why am I seeing what looks like a violation of operator precedence?] <https://mathematica.stackexchange.com/questions/153258/why-am-i-seeing-what-looks-like-a-violation-of-operator-precedence>

Why is it that when I evaluate

```
2*2.848529281693615'+3*-0.5155083247776808'
```

I get

```
(* -2.93688 *)
```

which is wrong.

```
2*2.848529281693615' + (3*-0.5155083247776808')
(* 4.15053 *)
```

Any help would be ...

- asked by An old man in the sea. (9 votes), answered by C. E. (9 votes)

[Need a gentle introduction to stylesheet writing] <https://mathematica.stackexchange.com/questions/153102/need-a-gentle-introduction-to-stylesheet-writing>

I have searched Mathematica.SE for stylesheet and found a lot of useful information on specific issues but no general introduction. There were 746 hits, and it is very time consuming for anyone to ...

- asked by m_goldberg (9 votes), answered by m_goldberg (7 votes)

[Unexpected behavior when directly assigning to DownValues] <https://mathematica.stackexchange.com/questions/152999/unexpected-behavior-when-directly-assigning-to-downvalues>

I'm encountering some unexpected behavior when assigning to DownValues. When I assign two definitions for test[1] as below, Mathematica stores both definitions:

```
DownValues[test] = ...
```

- asked by tom (9 votes), answered by b3m2a1 (6 votes)

[Except @ OptionsPattern[] affects OptionValue] <https://mathematica.stackexchange.com/questions/152984/except-optionspattern-affects-optionvalue>

The background

This example works as expected, small function with a special case rule:

```
foo // ClearAll
foo // Options = {"bar" -&gt; 1};

foo[x_, y : Except[_Rule], patt : OptionsPattern[]
...

```

- asked by Kuba (9 votes), answered by Mr.Wizard (7 votes)

==== Greatest hits from previous weeks: =====

[Mathematica 10.0.x freezes in Initializing kernels] <https://mathematica.stackexchange.com/questions/92931/mathematica-10-0-x-freezes-in-initializing-kernels>

Bug caused by paclet update and fixed by paclet update.

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't ...

- asked by mitcheljh (73 votes), answered by ilian (95 votes)

[Exporting graphics to PDF - huge file] <https://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[], r Sin[], r^2}, {r, 0, ...
```

- asked by Matthew Leingang (94 votes), answered by Heike (80 votes)

=====
=====
Can you answer these?
=====

[Operator on a multivariable function in a sum] <https://mathematica.stackexchange.com/questions/153092/operator-on-a-multivariable-function-in-a-sum>

I need to define an operator that does as follow for any function h_m .

$$\llcorner 0[h_m](k, M, b, l_{\max}) = \sum_{l \neq (0, m)}^{l_{\max}} i_l \left(h_l(k, M, b, l_{\max}) \right)$$

- asked by Michael_J (1 vote)

[Direct input in Chinese, Korean or Japanese] <https://mathematica.stackexchange.com/questions/153042/direct-input-in-chinese-korean-or-japanese>

Sometimes I need to create a document in Japanese: I know Mathematica supports typing in Japanese. However it doesn't seem to support direct (inline) input in Japanese.

Whenever I need to convert a ...

- asked by Tadashi Kikuno (5 votes)

[Parametric Plot of Faces] <https://mathematica.stackexchange.com/questions/152909/parametric-plot-of-faces>

In How do I draw a pair of buttocks? there is a discussion how to draw a human backside. It shows an example of Manipulate to ParametricPlot3D this part of a body.

In this discussion they were ...

- asked by Adalbert HanSSen (1 vote)

4.21 Tuesday, August 1, 2017

=====

Top new questions this week:

=====

[String operation 1000X slower for special characters] <https://mathematica.stackexchange.com/questions/152293/string-operation-1000x-slower-for-special-characters>

It seems that the string operation is very slow if we have special characters in the string. Consider this example,

```
str =
  StringJoin@
    RandomChoice[Join[Alphabet[], ToString /@ Range[0, 9]], ...
```

- asked by xslittlegrass (12 votes), answered by Alexey Popkov (12 votes)

[Making a website with Mathematica] <https://mathematica.stackexchange.com/questions/152663/making-a-website-with-mathematica>

I know many people here have various websites associated with them and I'm guessing do at least some of the development of that stuff in Mathematica.

I recently fell down that rabbit hole myself, ...

- asked by b3m2a1 (11 votes), answered by C. E. (9 votes)

[Convert association with list key to nested associations] <https://mathematica.stackexchange.com/questions/152676/convert-association-with-list-key-to-nested-associations>

I have an association that maps x, y pairs to values, for example:

```
&lt;|{0, 0} -> "a", {-1, -4} -> "b", {-1, 1} -> "c", {-1, 0} -> "d", {1,
```

I want to convert this ...

- asked by 2012rcampion (9 votes), answered by MarcoB (8 votes)

[Matching $(y/x)^u$ terms wherever they appear in an expression] <https://mathematica.stackexchange.com/questions/152559/matching-y-xu-terms-whenever-they-appear-in-an-expression>

Mathematica keeps rewriting expressions, so it is hard to figure what pattern to use.

I am trying to replace all occurrences of $\frac{y}{x}$ by t , but Mathematica re-writes ...

- asked by Nasser (9 votes), answered by aardvark2012 (4 votes)

[Bulletproofing packages against SetOptions of built-ins] <https://mathematica.stackexchange.com/questions/152472/bulletproofing-packages-against-setoptions-of-built-ins>

Packages are (obviously) written in terms of built-in Mathematica functions. But many (if not, most) of these functions have options, like Expand, Solve, Compile

While a package is active, the user ...

- asked by QuantumDot (9 votes), answered by Leonid Shifrin (12 votes)

[How can I offset a curve from the given data points?] <https://mathematica.stackexchange.com/questions/152298/how-can-i-offset-a-curve-from-the-given-data-points>

I am new to Mathematica programming.

I have a question related to my work with this software.

I have the data points below:

```
{{128.011, 86.7748}, {128.011, 86.7748}, {128.167, 86.7663}, {128.19, ...
```

- asked by Mukidi Lee (8 votes), answered by J. M. (12 votes)

[Export[..., "tsv"] drops minus signs from Dataset [horrific bug?]] <https://mathematica.stackexchange.com/questions/152355/export-tsv-drops-minus-signs-from-dataset-horrific-bug>

Toy example:

First, create a Dataset:

```
data = Dataset[{{&lt;|"x" -&gt; 1, "y" -&gt; -2|&gt;,
                &lt;|"x" -&gt; -3, "y" -&gt; 4|&gt;}}
```

Next, export it as a TSV file:

...

- asked by kjo (8 votes), answered by Rolf Mertig (6 votes)

=====
Greatest hits from previous weeks: =====

[Entering numbers in Scientific Notation?] <https://mathematica.stackexchange.com/questions/36792/entering-numbers-in-scientific-notation>

I need to play with a lot of powers such as 10^{-3} . $1E-3$ does not work for it. Is there any short form for it?

- asked by hhh (32 votes), answered by Rahul (43 votes)

[Creating legends for plots with multiple lines?] <https://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . . }
```

If I then do `ListLinePlot[Table[{#1,Log[b,#2]}&@@@data, {b,1,10,2}]]` I have no way to generate a legend ...

- asked by Eiyrioü von Kauyf (60 votes), answered by Jens (90 votes)

=====
Can you answer these? =====

[Obstacle problem for the heat equation] <https://mathematica.stackexchange.com/questions/152491/obstacle-problem-for-the-heat-equation>

Consider the problem

```
$$\begin{cases}
```

```
\max\{\Delta u - \partial_t u, \varphi - u\} = 0 \ \& \ \text{in } (0,T)\times \mathbb{R}^n
```

```
u(0,\cdot) = \varphi(0,\cdot) \ \& \ \text{in } \mathbb{R}^n.
```

```
...
```

- asked by Hiro (3 votes)

[DateListPlot of multiple time series with data values and legend appearing as the cursor moves over plotted lines] <https://mathematica.stackexchange.com/questions/152405/datelistplot-of-multiple-time-series-with-data-values-and-legend-appearing-as-th>

This is very similar to my previous question. I want to use "DateListPlot" to visualize multiple time series (n) and see data values and legend as I move the cursor over plotted lines. To begin with, ...

- asked by ramesh (2 votes)

[Using FindMinimum for a table of functions] <https://mathematica.stackexchange.com/questions/152595/using-findminimum-for-a-table-of-functions>

I am relatively new to Mathematica and am having trouble with my code running quite slowly. What I am attempting to do is find the minimum value of a function (a χ^2) of one fit variable, but this ...

- asked by nsbd88 (1 vote)

4.22 Tuesday, July 25, 2017

=====

Top new questions this week:

=====

[Reduce Code Length] <https://mathematica.stackexchange.com/questions/152003/reduce-code-length>

I have the following that works good, and computes in one shot, but the code is so long. Can someone please help me to reduce the size of this?

...

- asked by Bill W. (9 votes), answered by Ali Hashmi (7 votes)

[Best way to handle nested Maps?] <https://mathematica.stackexchange.com/questions/151742/best-way-to-handle-nested-maps>

I often find myself working with lists of lists of data, gathering data, performing computations, and producing a variety of different sorts of output. Intuitively, it seems like this should be done ...

- asked by Michael Stern (9 votes), answered by eldo (6 votes)

[Color gradient varying in a path] <https://mathematica.stackexchange.com/questions/151980/color-gradient-varying-in-a-path>

The code below is to create something like a logo. I want to apply a color gradient over the polygons of the pattern, but they vary along the path. The image that I want to approach is this:

```
ang = ...
```

- asked by LCarvalho (8 votes), answered by KennyColnago (9 votes)

[Offset Partition with only one remainder element] <https://mathematica.stackexchange.com/questions/152152/offset-partition-with-only-one-remainder-element>

I would like to use a combination of options of Partition in a way that I can't seem to find in the documentation.

Given example input {a,b,c,d,e,f,g}, I would like output ...

- asked by George Moore (7 votes), answered by kglr (4 votes)

[Slot # corresponding to subset of a list in select] <https://mathematica.stackexchange.com/questions/152082/slot-corresponding-to-subset-of-a-list-in-select>

Is it possible to use # in the select function preserving the structure of the list?

Here an example of what I mean. Let's say I want to select all the pairs where the first element is 1:

```
data1 = ...
```

- asked by Fraccalo (7 votes), answered by kglr (7 votes)

[Any faster approach than Outer for my computation] <https://mathematica.stackexchange.com/questions/151892/any-faster-approach-than-outer-for-my-computation>

Outer is slowing down considerably when the first argument is Abs[#1 - #2]/Max[#1, #2]

```
Outer[List, Range[5000], Range[5000]]; // AbsoluteTiming
(* {0.120091, Null} *)
```

```
Outer[Abs[#1 - ...
```

- asked by Ali Hashmi (6 votes), answered by niki (9 votes)

[How to generate password] <https://mathematica.stackexchange.com/questions/151864/how-to-generate-password>

I would like to generate a random password of a defined length which can easily be typed in with a standard keyboard.

As a start I tried the following:

```
SeedRandom["pass"];
...
```

- asked by mrz (6 votes), answered by yohbs (11 votes)

=====
 Greatest hits from previous weeks: =====

[Why should I avoid the For loop in Mathematica?] <https://mathematica.stackexchange.com/questions/134609/why-should-i-avoid-the-for-loop-in-mathematica>

Some people advise against the use of For loops in Mathematica. Why? Should I heed this advice? What is wrong with For? What should I use instead?

- asked by Szabolcs (52 votes), answered by Szabolcs (62 votes)

[Why round to even integers?] <https://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers>

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

```
Round[{0.5, 1.5, 2.5, 3.5, 4.5}]
```

gives

```
{0, 2, 2, 4, 4}
```

- asked by wxffles (64 votes), answered by Per Alexandersson (42 votes)

=====
 ===== Can you answer these?
 =====

[How can I exclude factors containing a certain symbol form matching my pattern] <https://mathematica.stackexchange.com/questions/151971/how-can-i-exclude-factors-containing-a-certain-symbol-form-matching-my-pattern>

Ok, I give up. I can't figure how to tell Mathematica to do replacement using a pattern except for some special case. Easier to explain with small example.

I want to change pattern `Exp[any_. c]` to `c ...`

- asked by Nasser (3 votes)

[Graphics3D with explicit ViewAngle inside Manipulate disappears for a moment when starting rotation] <https://mathematica.stackexchange.com/questions/151978/graphics3d-with-explicit-viewangle-inside-manipulate-disappears-for-a-moment-when-starting-rotation>

Given the following:

```
Manipulate[
  ContourPlot3D[
    x^4 + y^4 + z^4 - (x^2 + y^2 + z^2)^2 + 3 (x^2 + y^2 + z^2) == 3 c,
    {x, -3, 3},
    {y, -3, 3},
    {z, -3, 3},
    ...
  ]
]
```

- asked by Mark (1 vote)

[MTensor from existing memory?] <https://mathematica.stackexchange.com/questions/151780/mtensor-from-existing-memory>

I am wondering whether it's possible to return a tensor from my C++ code using `LibraryLink` without copying the memory (because it's large). So, instead of

```
libData->MTensor_new(..., &T0);
...
```

- asked by mrupp (2 votes)

4.23 Tuesday, July 18, 2017

=====

Top new questions this week:

=====

[Is there concise code for the list operation I want to perform?] <https://mathematica.stackexchange.com/questions/151550/is-there-concise-code-for-the-list-operation-i-want-to-perform>

Is there any concise syntax for the following partitioning of a list. Given 1, 2, 3, 4, I want to get the output as shown below. I have tried various function such as Partition and others, but I ...

- asked by vikas (10 votes), answered by kglr (16 votes)

[Animate Koch curve generation and include a transition effect] <https://mathematica.stackexchange.com/questions/151621/animate-koch-curve-generation-and-include-a-transition-effect>

Recently, I saw two kinds of animation of Koch curve iteration generation.

I don't know how to make this effect, now I can only do this

```
Clear[koch];
koch[{A_, B_}] :=
  Partition[
    {A, (2 A ...
```

- asked by mathe (10 votes), answered by Kuba (14 votes)

[How to find the sum for each individual row in a binary matrix until the first zero is reached from left to right.] <https://mathematica.stackexchange.com/questions/151396/how-to-find-the-sum-for-each-individual-row-in-a-binary-matrix-until-the-first-zero>

I have a 150 by 300 binary matrix. I would like to sum the 1's for each individual row (from left to right) until the first zero is encountered. For example, if a given row is 1 1 1 1 1 1 0 0 0 1 0 0 ...

- asked by Tiffany Visgaitis (7 votes), answered by eldo (8 votes)

[Replace element in array by checking condition in another list] <https://mathematica.stackexchange.com/questions/151293/replace-element-in-array-by-checking-condition-in-another-list>

Im trying to escape doing double loops given the large number of items in the arrays.

I have two list with a format like this:

```
list1={{1,2,0},{1,3,0},{4,6,0},{2,3,0}} (*Third element of each item is ...
```

- asked by Giovanni Baez (7 votes), answered by Carl Woll (8 votes)

[Geometry computations add-on for Mathematica?] <https://mathematica.stackexchange.com/questions/151304/geometry-computations-add-on-for-mathematica>

I came across the problem of calculating the circumcenters of triangles symbolically within another algorithm (as well as possibly doing other similar geometry computations). I was hoping Mathematica ...

- asked by Grayscale (7 votes), answered by C. E. (10 votes)

[Trace of the points of intersection of two moving curves] <https://mathematica.stackexchange.com/questions/151325/trace-of-the-points-of-intersection-of-two-moving-curves>

I would like to trace the points of intersection between the polar curves

```
r == Cos[n + k t]
```

and

```
r == t Csc[]
```

as t goes from -1 to 1. (n and k are constants, and y, r, and relate in the ...

- asked by 404UserNotFound (6 votes), answered by Carl Woll (11 votes)

[How to delete the parameter of a Neural Network?] <https://mathematica.stackexchange.com/questions/151591/how-to-delete-the-parameter-of-a-neural-network>

Mathematica Neural Networks based on MXNet. And there is lots of model in MXNet(MXNet Model Zoo).

For example,I follow a tutorial An introduction to the MXNet APIpart 4, It uses Inception v3(net ...

- asked by partida (5 votes), answered by xslittlegrass (3 votes)

=====
Greatest hits from previous weeks: =====

[Why should I avoid the For loop in Mathematica?] <https://mathematica.stackexchange.com/questions/134609/why-should-i-avoid-the-for-loop-in-mathematica>

Some people advise against the use of For loops in Mathematica. Why? Should I heed this advice? What is wrong with For? What should I use instead?

- asked by Szabolcs (52 votes), answered by Szabolcs (62 votes)

[Image processing: Floor plan - detecting rooms' borders (area) and room names' texts] <https://mathematica.stackexchange.com/questions/19546/image-processing-floor-plan-detecting-rooms-borders-area-and-room-names-t>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

- asked by s.s.o (52 votes), answered by niki (52 votes)

=====
Can you answer these? =====

[Unexpected Behavior of Parametric Sensitivity in ParametricNDSolveValue] <https://mathematica.stackexchange.com/questions/151294/unexpected-behavior-of-parametric-sensitivity-in-parametricndsolvevalue>

While exploring alternative methods of solving 33538, I encountered difficulties with the parametric sensitivity capability of ParametricNDSolveValue. (Useful background on parametric sensitivity is ...

- asked by bbgodfrey (2 votes)

[FindShortestTour suddenly runs far slower for large numbers of points] <https://mathematica.stackexchange.com/questions/151513/findshortesttour-suddenly-runs-far-slower-for-large-numbers-of-points>

I was doing a benchmark of FindShortestTour and I noticed something really weird. Around 10000 points, FindShortestTour suddenly takes 6 times as long without explanation:

```
times = Table[
  pts = ...
```

- asked by Jorge Perez (2 votes)

[Manual CellGroups: problem with closing nested CellGroupData] <https://mathematica.stackexchange.com/questions/151336/manual-cellgroups-problem-with-closing-nested-cellgroupdata>

Background

CellGroupData second argument allows to specify which cells are visible. I faced problems though.

This example works well, the second group is not visible:

```
Notebook[{
  Cell @ ...
```

- asked by Kuba (1 vote)

4.24 Tuesday, July 11, 2017

=====

Top new questions this week:

=====

[Replace elements that do not match a pattern] <https://mathematica.stackexchange.com/questions/149736/replace-elements-that-do-not-match-a-pattern>

I have the following matrix

```
mat={{0,a,b},{c,0,d},{0,0,e}}
```

I would like to replace the zero elements of it with 1 and the remaining with zero. The first step would be

`mat/.{0->1}`

However I ...

- asked by Galuaises (12 votes), answered by eldo (7 votes)

[Image segmentation by pixel value] <https://mathematica.stackexchange.com/questions/149966/image-segmentation-by-pixel-value>

I'm looking for a way to segment a grayscale image (or a 2D array) by its pixel values. We look at two neighboring pixels, if their values are close within a certain threshold, then we say they are ...

- asked by xslittlegrass (11 votes), answered by niki (11 votes)

[Can trees be made into graphs?] <https://mathematica.stackexchange.com/questions/151155/can-trees-be-made-into-graphs>

When one has the output of a function like `TreeForm`, for instance:

Can this be turned into a `Graph` object? I would like to be able to apply functions like `VertexList`, `VertexDegree`, `AdjacencyList`, ...

- asked by M. Brandt (8 votes), answered by C. E. (5 votes)

[Layout tips to keep UI responsive] <https://mathematica.stackexchange.com/questions/149835/layout-tips-to-keep-ui-responsive>

Bug introduced in V10.4 or earlier and persisting through V11.1.1

CASE:3914402

Here is an example of a problem I have. Guttled version of something much bigger:

```
handler2 = Framed[#, ...
```

- asked by Kuba (8 votes), answered by Kuba (1 vote)

[How to use \LaTeX in Mathematica text] <https://mathematica.stackexchange.com/questions/151102/how-to-use-latex-in-mathematica-text>

I would like to formulate a question in a notebook for my students using \LaTeX (or MathML) to typeset functions and matrices. I specifically want a language other than Mathematica as students ...

- asked by user49947 (7 votes), answered by Nasser (6 votes)

[getting zero for special positions in a matrix] <https://mathematica.stackexchange.com/questions/149767/getting-zero-for-special-positions-in-a-matrix>

There are a list

```
list={{1, 2, 3, 2, 3}, {3, 1, 1, 2, 3}, {3, 2, 1, 3, 2}, {1, 2, 1, 1, 1}};
```

I wish to have all elements be zero except the first and the fourth in each row: desired:

```
list={{1, 0, ...
```

- asked by Irreversible (7 votes), answered by tom d (7 votes)

[To Work with Barchart or DiscretePlot?] <https://mathematica.stackexchange.com/questions/149960/to-work-with-barchart-or-discreteplot>

I would like to create a graph similar to this below using some slightly dotted bar style like the one shown in the figure ...

And I'm trying to open a space between bars 6 and 8, but I'm failing.

...

- asked by LCarvalho (7 votes), answered by kglr (6 votes)

=====
Greatest hits from previous weeks: =====

[How to manipulate 2D plots?] <https://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by István Zachar (117 votes), answered by István Zachar (134 votes)

[Learn Mathematica (Wolfram) Language in one day] <https://mathematica.stackexchange.com/questions/138366/learn-mathematica-wolfram-language-in-one-day>

Currently I am trying to learn Python. Searching for relevant material I came across X in Y minutes

and books with titles such as Learn Python in one day, in 24 hours, etc.

Similar material exists ...

- asked by dimitris (25 votes), answered by masterxilo (9 votes)

=====
 ===== Can you answer these?
 =====

[Sorting a list of rules] <https://mathematica.stackexchange.com/questions/149862/sorting-a-list-of-rules>

When we give several definitions for a function f , the DownValues of f are automatically sorted with respect to the domain defined by the pattern:

```
f[x_]:=2;
f[x_?Positive] := 3;
f[1]=4;
...
```

- asked by Fred Simons (3 votes)

[Plotting orbits of trajectories of bodies sharing the earth's orbit in coordinates centered at the barycenter of the solar system] <https://mathematica.stackexchange.com/questions/151069/plotting-orbits-of-trajectories-of-bodies-sharing-the-earth-orbit-in-coordinates-centered-at-the-barycenter-of-the-solar-system>

I am attempting to try and plot the trajectories of a trio of satellites that are orbiting with the earth-moon system around the solar system's barycenter. Originally, I had the satellites in orbit ...

- asked by SSoltero (1 vote)

[Mathematica not releasing RAM] <https://mathematica.stackexchange.com/questions/151127/mathematica-not-releasing-ram>

The following code is supposed to sequentially read data from a large CSV file and put it row by row into an SQL server. Although I thought RAM consumption should be constant the system keeps asking ...

- asked by user13892 (2 votes)

4.25 Tuesday, July 4, 2017

=====

Top new questions this week:

=====

===== Top new questions this week: =====

[Is there a simple and fast way to delete dependent lines of a matrix] <https://mathematica.stackexchange.com/questions/149281/is-there-a-simple-and-fast-way-to-delete-dependent-lines-of-a-matrix>

I am building a matrix, but some of the lines are dependant. I would like to only keep independant lines (so erase all lines that depend from another).

I could compute the nullspace of the transpose ...

- asked by StarBucK (10 votes), answered by george2079 (10 votes)

[Vertex coloring for bi-connected graphs] <https://mathematica.stackexchange.com/questions/149247/vertex-coloring-for-bi-connected-graphs>

In graph theory, a bi-connected component is a maximal bi-connected subgraph of a graph g -i.e., a connected subgraph that would remain connected if any one of its vertexes were to be removed. An ...

- asked by David G. Stork (10 votes), answered by kglr (9 votes)

[Compile and uncompileable function bug?] <https://mathematica.stackexchange.com/questions/149343/compile-and-uncompileable-function-bug>

I think I found a bug, but I still have MMA version 11.0.1 installed. Can somebody please check if this persists in the latest version?

When I compile this function:

```
cf = Compile[{{n, _Integer}},
  ...
```

- asked by JEM_Mosig (10 votes), answered by Michael E2 (12 votes)

[How to make the result of InputForm balance the bracket] <https://mathematica.stackexchange.com/questions/149558/how-to-make-the-result-of-inputform-balance-the-bracket>

I always use InputForm to check the result object, such as Dataset or Graphics or other objects. But if you are in the result of InputForm, you cannot use the Front-End function of balance the bracket. ...

- asked by yode (9 votes), answered by Carl Woll (6 votes)

[KeyValuePattern in matching and replacement in nested associations] <https://mathematica.stackexchange.com/questions/149402/keyvaluepattern-in-matching-and-replacement-in-nested-associations>

This case revealed I am missing something in pattern matching and evaluation in case of match, or I can't grasp it due to the busy week I have. Either way, I find this problem interesting for wider ...

- asked by Kuba (9 votes), answered by Mr. Wizard (5 votes)

[Align two images with respect to sperm head] <https://mathematica.stackexchange.com/questions/149280/align-two-images-with-respect-to-sperm-head>

My biologist friend has to align sperm images according to their heads. He usually does that manually by rotating each image. The problem is that there are so many images and it takes a lot of time. ...

- asked by Anjan Kumar (9 votes), answered by niki (7 votes)

[A more convenient Fourier series] <https://mathematica.stackexchange.com/questions/149468/a-more-convenient-fourier-series>

Personally, I feel the design of FourierSeries/FourierSinSeries/FourierCosSeries/FourierTrigSeries not convenient enough because:

They can't give general formula of series as output, one must set a ...

- asked by xzczd (7 votes), answered by xzczd (7 votes)

==== Greatest hits from previous weeks: =====

[Why should I avoid the For loop in Mathematica?] <https://mathematica.stackexchange.com/questions/134609/why-should-i-avoid-the-for-loop-in-mathematica>

Some people advise against the use of For loops in Mathematica. Why? Should I heed this advice? What is wrong with For? What should I use instead?

- asked by Szabolcs (51 votes), answered by Szabolcs (61 votes)

[My Girlfriend is going to prison...Save her with Math] <https://mathematica.stackexchange.com/questions/135937/my-girlfriend-is-going-to-prison-save-her-with-math>

Salacious title, but true story.

```
dmethyl1 = {
  {0, 0},
  {.25, 1},
  {.5, 7},
  {1, 26},
  {1.5, 40},
  {2, 45},
  {2.5, 45},
  {3, 44},
  {3.5, 44},
  {4, ...
```

- asked by Prisoners Dilema (39 votes), answered by bobthechemist (24 votes)

=====
 ===== Can you answer these?
 =====

[Serious regression in Integrate in 11.1.1? Division by zero generated] <https://mathematica.stackexchange.com/questions/149495/serious-regression-in-integrate-in-11-1-1-division-by-zero-generated>

What is going on here? In version 11.1.1 on windows 7

Using Version 11.0.1 also on windows 7

Source code

```
ClearAll[x, n, c, a ,b]
Integrate[(a + b*(c*x^n)^(2/n))^3, x]
```

Why does ...

- asked by Nasser (7 votes)

[Hiding inputs with specific function] <https://mathematica.stackexchange.com/questions/149298/hiding-inputs-with-specific-function>

I believe this question could be a duplication, but I did some searches with the term "hide the input cell", but none answered me. Only inputs with this function.

I have several input cells using the ...

- asked by LCarvalho (3 votes)

[Gravitational Lensing Simulation, Coordinate and Rendering Issues] <https://mathematica.stackexchange.com/questions/149447/gravitational-lensing-simulation-coordinate-and-rendering-issues>

I am trying to replicate this gravitational simulation online application called LensToy using Mathematica instead. I have two issues.

First, unlike LensToy, my rendering is extremely slow and drives ...

- asked by mpourrah (2 votes)

4.26 Tuesday, June 27, 2017

=====

Top new questions this week:

=====

[Display 10^n as power] <https://mathematica.stackexchange.com/questions/148794/display-10n-as-power>

How can I tell MMA to display input of the form 10^n as 10^n and not e.g. as 1000 for $n = 3$ or the rational $\frac{1}{1000}$ for $n = -3$.

This would help to keep tables compact when some ...

- asked by Casimir (13 votes), answered by eldo (10 votes)

[How to remove unknown zero-width character from string?] <https://mathematica.stackexchange.com/questions/148899/how-to-remove-unknown-zero-width-character-from-string>

I have text that contains a zero-width character that I am not able to remove. A minimum example is in str below where the character is at the start of the text.

```
str = "4-6";
res = ToExpression /@ ...
```

- asked by Edmund (12 votes), answered by Carl Woll (10 votes)

[Series sum approximation] <https://mathematica.stackexchange.com/questions/149090/series-sum-approximation>

Since there is no closed formula, as far as I know, to find the sum of

$$\sum_{n=2}^{\infty} \frac{(-1)^n}{\sqrt{\log(n)}}$$

I used //N to find an approximation and Mathematica gave me ...

- asked by Raffaele (11 votes), answered by TeM (18 votes)

[How to extract first 9 rows from every block of 22 rows?] <https://mathematica.stackexchange.com/questions/149026/how-to-extract-first-9-rows-from-every-block-of-22-rows>

I'm working with a list of lists (a large table).

How would I extract the first 9 rows from every 22 rows of this list?

Essentially, I'd like to drop rows 10 to 22, and then 32 to 44, and so on, ...

- asked by musicmaker (11 votes), answered by C. E. (11 votes)

[Confusion about HoldFirst attribute of Set] <https://mathematica.stackexchange.com/questions/148956/confusion-about-holdfirst-attribute-of-set>

Set has the attribute HoldFirst. Expectedly the following does not work, i.e. it does not assign the OwnValue of 3 to x:

```
In[1]:= {x, y}[[1]] = 3
```

During evaluation of In[1]:= Set::setps: {x,y} in the ...

- asked by kalix (8 votes), answered by Kuba (10 votes)

[What algorithm is Mathematica using to find the smallest eigenvalue so quickly?] <https://mathematica.stackexchange.com/questions/148759/what-algorithm-is-mathematica-using-to-find-the-smallest-eigenvalue-so-quickly>

My question is what kind of black magic is Mathematica doing to obtain the correct answer so quickly compared to other programming languages?

Details:

I've written a Mathematica notebook to find the ...

- asked by Daniel Walsh (8 votes)

[Simplify expression with Sqrt] <https://mathematica.stackexchange.com/questions/149186/simplify-expression-with-sqrt>

Hi folks I have a simple Simplify[] question

the following expression simplifies nice:

```
Sqrt[4 (a + b) - 4 c] // Simplify
2 Sqrt[a + b - c]
```

the next one refuses

```
Sqrt[4 (a + b) - 4 (c + d)] // ...
```

- asked by Robert Nowak (6 votes), answered by Shadowray (5 votes)

==== Greatest hits from previous weeks: =====

[Calculate the 2D Fourier transform of an Image] <https://mathematica.stackexchange.com/questions/29203/calculate-the-2d-fourier-transform-of-an-image>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

- asked by user8727 (5 votes), answered by Nasser (27 votes)

[Entering numbers in Scientific Notation?] <https://mathematica.stackexchange.com/questions/36792/entering-numbers-in-scientific-notation>

I need to play with a lot of powers such as 10^{-3} . 1E-3 does not work for it. Is there any short form for it?

- asked by hhh (32 votes), answered by Rahul (43 votes)

=====
 ===== Can you answer these?
 =====

[Cross-section of graph] <https://mathematica.stackexchange.com/questions/148902/cross-section-of-graph>

I am trying to use the following code to plot the cross-section of the graph $z=x^2+y^2$ and $x=t$. I use Manipulate to vary t .

```
h = z - x^2 - y^2;
g = x;
Manipulate[
  Show[
    ContourPlot3D[{h == 0, g == ...
```

- asked by henryforever14 (1 vote)

[How to embed Mathematica or Wolfram Alpha results in a website] <https://mathematica.stackexchange.com/questions/149063/how-to-embed-mathematica-or-wolfram-alpha-results-in-a-website>

Is it possible to dynamically embed responses into a blog post?

So the user would see:

There are 390900 plant species in the world.

With pseudo code:

```
There are #{wolfram(number of plant species)} ...
```

- asked by Mr. Demetrius Michael (1 vote)

[Package MathWorld] <https://mathematica.stackexchange.com/questions/148837/package-mathworld>

I'm looking for MathWorld packages, but I can not find anywhere. I found an question that came very close but did not help me.

I got lost on the site and did not find anything.

I need to use the ...

- asked by LCarvalho (4 votes)

4.27 Tuesday, June 20, 2017

=====

Top new questions this week:

=====

[Good references for parallel programming in Mathematica] <https://mathematica.stackexchange.com/questions/148489/good-references-for-parallel-programming-in-mathematica>

There are plenty of good references for all sorts of Mathematica programming:

This forum is a great example for specific questions/"getting things done". Books like those by R.Maeder (esp. the now ...

- asked by Gaius (17 votes)

[Dot not well-defined: are there better examples?] <https://mathematica.stackexchange.com/questions/148465/dot-not-well-defined-are-there-better-examples>

Dot is not "well-defined" in Mathematica - we cannot simultaneously have it being associative and working with 1D and 2D arrays. For example, the order we substitute for variables should not change ...

- asked by mikado (10 votes), answered by Shadowray (9 votes)

[Internal'Bag memory usage] <https://mathematica.stackexchange.com/questions/148594/internalbag-memory-usage>

1. How does Internal'Bag handle memory inside a compiled function? (examples below)
2. Is there a way to explicitly free up memory used by Internal'Bag without exiting the function?

Preface: The ...

- asked by aardvark2012 (9 votes)

[Preventing an unwanted vertical line from appearing my plot] <https://mathematica.stackexchange.com/questions/148502/preventing-an-unwanted-vertical-line-from-appearing-my-plot>

How can I eliminate (remove) the unwanted vertical line $x = 1$ when I make the plot shown below.

```
p3 =
Plot[
  {0.5/(-0.1 x + 0.1),
   0.04/(-0.004 x + 0.004),
   1.359/(-0.08 x + 0.08),
   ...
```

- asked by Irreversible (9 votes), answered by m_goldberg (1 vote)

[Integer to Alpha Representation] <https://mathematica.stackexchange.com/questions/148446/integer-to-alpha-representation>

I wanted a nice way to convert natural numbers to alphabetic representations like:

```
1-&gt;"A",
2-&gt;"B",
...
26-&gt;"Z",
27-&gt;"AA",
...
26*2-&gt;"AZ",
26*2+1-&gt;"BA",
...
```

And I knew this was ...

- asked by b3m2a1 (8 votes), answered by Carl Woll (6 votes)

[How to display numbers as multiples of a square root] <https://mathematica.stackexchange.com/questions/148551/how-to-display-numbers-as-multiples-of-a-square-root>

The extension field $\mathbb{Q}(\sqrt{2} + \sqrt{3})$ can be represented by a 4 - dimensional vector space over \mathbb{Q} with basis $\{1, \sqrt{2}, \sqrt{3}, \sqrt{6}\}$.

I made a matrix ...

- asked by nilo de roock (8 votes), answered by Carl Woll (7 votes)

[Visually permute rows of a matrix via mouse dragging] <https://mathematica.stackexchange.com/questions/148448/visually-permute-rows-of-a-matrix-via-mouse-dragging>

I'm looking for a way to permute the rows of a matrix visually via mouse dragging, for example by clicking and dragging on a row in the MatrixPlot corresponding to the matrix.

What would be the best ...

- asked by gIS (8 votes), answered by gIS (10 votes)

=====
Greatest hits from previous weeks: =====

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc] <https://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations (expectation values etc.) by running them through Mathematica. When I say, for example,

```
u[x_] := Sqrt[2/L] * Sin[Pi * n * x / L]
```

and then ...

- asked by Matthew Brunetti (17 votes), answered by SquareOne (11 votes)

[Entering numbers in Scientific Notation?] <https://mathematica.stackexchange.com/questions/36792/entering-numbers-in-scientific-notation>

I need to play with a lot of powers such as 10^{-3} . `1E-3` does not work for it. Is there any short form for it?

- asked by hhh (32 votes), answered by Rahul (43 votes)

=====
Can you answer these? =====

[Which method should I use for a numerical triple Integration?] <https://mathematica.stackexchange.com/questions/148629/which-method-should-i-use-for-a-numerical-triple-integration>

Which method should I use for this numerical integration? Does it converge?

My constants are:

```
P = 10.5;
m = 48.2;
c = 1;
  = 0.01;
V0 = 10;
```

```
EE = 2.3;  
II = 1.;  
k = 68.9*10^3;
```

My Integration is

...

- asked by Edmond Muho (2 votes)

[possible memory problem with WatershedComponents] <https://mathematica.stackexchange.com/questions/148318/possible-memory-problem-with-watershedcomponents>

This could be regarded as a follow-up question to a previous post of mine (link).

When I use the WatershedComponents function on a large image (about 6000 x 10000 pixels) Mathematica comes up with an ...

- asked by Kardashev3 (4 votes)

[Swedish characters in Databin] <https://mathematica.stackexchange.com/questions/148550/swedish-characters-in-databin>

I want to store strings with Swedish characters like å, ä and ö in a Databin, but get the following result:

```
bin = CreateDatabin[];  
DatabinUpload[bin, {"a", "ä"}];  
Values[bin]  
{a,"a"}
```

Does anyone ...

- asked by Sverker (5 votes)

4.28 Tuesday, June 13, 2017

=====

Top new questions this week:

=====

[Same region, different meshes] <https://mathematica.stackexchange.com/questions/148210/same-region-different-meshes>

I'm playing around with ToElementMesh and I noticed the following behaviour that puzzles me. Consider the two regions

<< NDSolve'FEM'

1 =

Polygon[{{-1/2, -1}, {-1/2, 1}, {1/2, 1}, {1/2, ...

- asked by Massimo Ortolano (11 votes), answered by user21 (9 votes)

[Rearrange the list in a specific way] <https://mathematica.stackexchange.com/questions/147876/rearrange-the-list-in-a-specific-way>

Suppose I have a list like {"e", "c", "a", "d", "b"} and list of rules {1 -> 5, 2 -> 3, 3 -> 1, 4 -> 4, 5 -> 2}. The second list says that for example element on position 1 should be on ...

- asked by David Baghdasaryan (11 votes), answered by Shadowray (16 votes)

[Self contained APIFunction. Collecting definitions] <https://mathematica.stackexchange.com/questions/148207/self-contained-apifunction-collecting-definitions>

Cross posted on community.wolfram.com

Background

After failed attempt (1) to create a complex API, by nicely linking my APIFunction to a cloud based package, I decided to go with the flow and trust ...

- asked by Kuba (10 votes), answered by Leonid Shifrin (4 votes)

[Substitute some 1s with 0s in random list] <https://mathematica.stackexchange.com/questions/148134/substitute-some-1s-with-0s-in-random-list>

How is it better to substitute list of random combination of 1 and 0 (binary image) so that only first (or central) instance of 1 left in each group.

list = 0,1,1,0,0,1,0,1,1,1,0 should be ...

- asked by io_tuta (9 votes), answered by Carl Woll (10 votes)

[Pattern matching Association in rules] <https://mathematica.stackexchange.com/questions/148074/pattern-matching-association-in-rules>

I would appreciate an explanation of how Associations behave in pattern matching, especially when matching rules, and using HoldPattern.

Consider the following:

```
assocRuleList = {&lt;||&gt; :&gt; ...
```

- asked by ZeitPolizei (9 votes), answered by WReach (7 votes)

[How to combine Neural Network and Audio like Classify?] <https://mathematica.stackexchange.com/questions/148158/how-to-combine-neural-network-and-audio-like-classify>

I want to combine Audio object and Neural Network ,first thing I remember is Classify

```
windInstrument = ExampleData[{"Sound", #}] &amp; /@ {"AltoFlute", "AltoSaxophone", "Ba
```

- asked by partida (8 votes)

[ROT13 and upside-down text (flip text)] <https://mathematica.stackexchange.com/questions/147829/rot13-and-upside-down-text-flip-text>

How can we transform text in order to achieve ROT13 and flip text using Wolfram Mathematica?

1. ROT13

2. Flip text

- asked by rhermans (8 votes), answered by rhermans (11 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Mathematica 10.0.x freezes in Initializing kernels] <https://mathematica.stackexchange.com/questions/92931/mathematica-10-0-x-freezes-in-initializing-kernels>

Bug caused by paclet update and fixed by paclet update.

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't ...

- asked by mitcheljh (73 votes), answered by ilian (94 votes)

[1 Plot, 2 Scale/Axis] <https://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (115 votes), answered by ArgentoSapiens (110 votes)

==== Can you answer these?
====

[How to improve the creation of tables of code and comments] <https://mathematica.stackexchange.com/questions/148160/how-to-improve-the-creation-of-tables-of-code-and-comments>

While writing a response to a certain MSE question I made a function that tabulates code and comments. (See the definition below.)

Here is an example:

```
code = "
  FoldList[(* reduction function *)
  ...
```

- asked by Anton Antonov (5 votes)

[Export as HTML: Image of text is squished] <https://mathematica.stackexchange.com/questions/147819/export-as-html-image-of-text-is-squished>

When exporting a notebook to HTML, the notebook's cells render as images, but the text is often squished. For example, this notebook:

... renders as

If I manually line-break the code, the ...

- asked by ConvexMartian (3 votes)

[How to implement the same function use *Layer function?] <https://mathematica.stackexchange.com/questions/148181/how-to-implement-the-same-function-use-layer-function>

Reading YOLO method to detect object in the image(paper),I want to train this tiny-VOLO v1 on Mathematica,but the special loss function is very difficult to write.

Total loss is:

For brief,I use ...

- asked by partida (5 votes)

4.29 Tuesday, June 6, 2017

=====

Top new questions this week:

=====

[List of symbols without built-in meaning] <https://mathematica.stackexchange.com/questions/147328/list-of-symbols-without-built-in-meaning>

Is there a list of all symbols with special display forms but no built-in meaning? That is, operators that are described in the tutorial Operators without Built-in Meanings?

- asked by Carl Woll (17 votes), answered by Carl Woll (17 votes)

[Does Mathematica support deep links?] <https://mathematica.stackexchange.com/questions/147374/does-mathematica-support-deep-links>

So GitHub sent me on quite the journey, after it opened its desktop app from my browser. Copying the link I found something looking like: "github-mac://...".

I spent the next like 15 minutes trying ...

- asked by b3m2a1 (12 votes), answered by b3m2a1 (12 votes)

[How and why to use monadic programming in Mathematica?] <https://mathematica.stackexchange.com/questions/147679/how-and-why-to-use-monadic-programming-in-mathematica>

This is a methodological question with two parts:

How to use monadic programming in Mathematica?

and Why use monadic programming in Mathematica?

In my opinion the questions are inter-related – ...

- asked by Anton Antonov (10 votes)

[Google Drive API connection: (or how can I build a service connection to an OAuth2 service?)] <https://mathematica.stackexchange.com/questions/147451/google-drive-api-connection-or-how-can-i-build-a-service-connection-to-an-oaut>

From here I know how to build a a basic service connection.

And that's fine in simple authentication cases but how do I do this for OAuth services?

Even more specifically, how can I do this for ...

- asked by b3m2a1 (10 votes), answered by b3m2a1 (9 votes)

[Performance of Nest vs. Do] <https://mathematica.stackexchange.com/questions/147545/performance-of-nest-vs-do>

When I am iterating the logistic function using a pure function, comparing Do and Nest:

```
x = 0.1; Do[x = 3 x (1 - x), 300] // RepeatedTiming
Nest[3 # (1 - #) &, .1, 300] // RepeatedTiming
```

- asked by Stitch (9 votes), answered by Karsten 7. (9 votes)

[Huge arrows in 3D graphics] <https://mathematica.stackexchange.com/questions/147586/huge-arrows-in-3d-graphics>

Hi. Consider the following code:

```
f1 = Plot3D[-Exp[-x^2-y^2],{x,-5,5},{y,-5,5},PlotRange->All]
f2 = Graphics3D[Table[{Arrowheads[.01],Arrow[{2Cos[i],2Sin[i],0},{2.5Cos[i], ...
```

- asked by AccidentalFourierTransform (9 votes), answered by Jens (9 votes)

[Clean package update for API/FormFunctions on Wolfram Cloud] <https://mathematica.stackexchange.com/questions/147330/clean-package-update-for-api-for-mfunctions-on-wolfram-cloud>

Cross posted on community.wolfram.com (new comments)

TLDR

There is a pool of kernels/sessions available for each user, you don't have control over the pool only over specific kernel you currently ...

- asked by Kuba (7 votes), answered by b3m2a1 (7 votes)

=====
Greatest hits from previous weeks: =====

[My Girlfriend is going to prison...Save her with Math] <https://mathematica.stackexchange.com/questions/135937/my-girlfriend-is-going-to-prison-save-her-with-math>

Salacious title, but true story.

```
dmethyl1 = {
  {0, 0},
  {.25, 1},
  {.5, 7},
  {1, 26},
  {1.5, 40},
  {2, 45},
  {2.5, 45},
  {3, 44},
  {3.5, 44},
  {4, ...
```

- asked by Prisoners Dilema (37 votes), answered by bobthechemist (24 votes)

[Creating legends for plots with multiple lines?] <https://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . .}
```

If I then do `ListLinePlot[Table[{{#1,Log[b,#2]}&@@@data, {b,1,10,2}}]` I have no way

- asked by Eiyrioü von Kauyf (60 votes), answered by Jens (89 votes)

=====
Can you answer these?
=====

[URLFetch parameters interfere with POST] <https://mathematica.stackexchange.com/questions/147526/urlfetch-parameters-interfere-with-post>

(orig: URLFetch Multipart POST fails to post Body?)

Update 2:

So after much weeping and gnashing of teeth our Lord and Savior Mathematica deemed me worthy of figuring out (some of) what the hell was ...

- asked by b3m2a1 (1 vote)

[What is the best method for solving $D(a, b, r, t)$ under a 5-minute computation time?] <https://mathematica.stackexchange.com/questions/147520/what-is-the-best-method-for-solving-da-b-r-t-under-a-5-minute-computation-ti>

Consider set $\{T(c, d) \mid c, d \in \mathbb{Z}\}$, a subset of rational numbers, where $T(c, d)$ is a function.

I want to compute $D(a, b, r, t)$

...

- asked by Arbuja (1 vote)

[Loop construction with multiple expressions for solving differential equation] <https://mathematica.stackexchange.com/questions/147523/loop-construction-with-multiple-expressions-for-solving-differential-equation>

I want to solve the following ODE.

$$H'' + \frac{2}{r}H' - \frac{\partial V_{eff}(H,r)}{\partial H} = 0$$

with the following conditions

$$\frac{dH}{dr}(r=0) = 0 \text{ and } H(r=\infty) = 0$$

Regardless of the ...

- asked by Konstantinos (2 votes)

4.30 Tuesday, May 30, 2017

=====

Top new questions this week:

=====

[Estimate the "Blurry" distribution of an image] <https://mathematica.stackexchange.com/questions/146989/estimate-the-blurry-distribution-of-an-image>

I'm trying to analyze an image obtained by scanning electron microscope (SEM) where different parts of the same image has different blurring radius. My goal is to determine how blurry different ...

- asked by Wjx (17 votes), answered by Shadowray (20 votes)

[Nest list with two functions] <https://mathematica.stackexchange.com/questions/147055/nest-list-with-two-functions>

Is it possible to use the NestList command with two functions, one at every even step and apply the other at every odd step. If this is possible could someone share an example ?

- asked by David (12 votes), answered by Shadowray (14 votes)

[Exporting structured data to HDF5] <https://mathematica.stackexchange.com/questions/146859/exporting-structured-data-to-hdf5>

Sadly the documentation is lacking any useful examples on how to Export more complex data in HDF5. There is only

```
Export["file.h5",{expr1,...},{"Datasets", {"dataset1",...}}] creates an HDF5 file,
```

- asked by Sascha (10 votes), answered by Sascha (5 votes)

[Using Mathematica to create an H-Tree] <https://mathematica.stackexchange.com/questions/146797/using-mathematica-to-create-an-h-tree>

Can folks show me several methods I can use to draw the following fractal H-Tree?

I did use Free-Form input, as:

```
= h-fractal
```

And got this image, which is three iterations, but no idea how it was ...

- asked by David (10 votes), answered by J. M. (10 votes)

[Combining # & pure functions with post-fix notation] <https://mathematica.stackexchange.com/questions/147132/combining-pure-functions-with-post-fix-notation>

I can't find the link anymore but there was a talk at a Wolfram conference (referencing v7 I think) where the authors highlight that stringing together functions like this:

`Range[100] // ...`

- asked by Joe (9 votes), answered by Szabolcs (7 votes)

[Hosting a curated data function / server in Google Drive] <https://mathematica.stackexchange.com/questions/146832/hosting-a-curated-data-function-server-in-google-drive>

I want to make a curated data function, but I have no good place to store the paclets.

Per the pricing page I only get:

And that's really not enough to host all of my data plus give me room to do ...

- asked by MB1965 (9 votes), answered by MB1965 (8 votes)

[Interpolate the noisy data] <https://mathematica.stackexchange.com/questions/146688/interpolate-the-noisy-data>

I have some noisy data

```
data = Uncompress[FromCharacterCode[
  Flatten[ImageData[Import["http://i.stack.imgur.com/RZcpj.png"], "Byte"]]]]
```

Plot looks like this

There is noise in certain region, ...

- asked by Saesun Kim (9 votes), answered by bill s (8 votes)

==== Greatest hits from previous weeks: =====

[Creating Mathematica packages] <https://mathematica.stackexchange.com/questions/29324/creating-mathematica-packages>

I'm building a package to help me write packages and their documentation. In this post I explained how to make a package and its documentation. In the answer I provided I describe how to build a very ...

- asked by jmlopez (89 votes), answered by Leonid Shifrin (114 votes)

[How can I plot the direction field for a differential equation?] <https://mathematica.stackexchange.com/questions/8841/how-can-i-plot-the-direction-field-for-a-differential-equation>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

- asked by Matt Groff (20 votes), answered by Peter Breitfeld (17 votes)

=====
 ===== Can you answer these?
 =====

[How to replace all instances of a number throughout my entire cell] <https://mathematica.stackexchange.com/questions/146971/how-to-replace-all-instances-of-a-number-throughout-my-entire-cell>

I have a cell where for several instances throughout I label certain functions, strings, and ranges using a similar pattern so as to follow through with integration calculations, list forming, and ...

- asked by yalev (3 votes)

[Error occurred while connecting to remote kernel.Can't use dynamic] <https://mathematica.stackexchange.com/questions/146823/error-occurred-while-connecting-to-remote-kernel-cant-use-dynamic>

When Open Mathematica using remote kernel, it throws LinkConnect error. But normal command can evaluate. Like `Range@5, $Version...`

But Can't use dynamic. It throws An unknown box name.

So if I want to ...

- asked by partida (4 votes)

[Partition an Image automatically Based on Borders] <https://mathematica.stackexchange.com/questions/146837/partition-an-image-automatically-based-on-borders>

I would like to be able to train a model to recognize the borders in a newspaper image and then partition those into separate Images. Images similar to this would be the input Image

And then ...

- asked by Avadhut Bhosarekar (2 votes)

4.31 Tuesday, May 23, 2017

=====

Top new questions this week:

=====

[PerformanceGoal option ignored in V11.1] <https://mathematica.stackexchange.com/questions/146214/performancegoal-option-ignored-in-v11-1>

Bug introduced in 11.1

[CASE:3892079] was created

[...] I have reproduced this problem with PerformanceGoal in version 11.1 and reported the issue to our developers [...]

Take this code:

...

- asked by Kuba (14 votes), answered by Kuba (15 votes)

[Can I build my own curated data function?] <https://mathematica.stackexchange.com/questions/146220/can-i-build-my-own-curated-data-function>

I love the huge curated datasets, but they don't cover everything. I have my own huge dataset which is too much to distribute as an EntityStore so is there a way to build my own analog of, say, ...

- asked by MB1965 (13 votes), answered by MB1965 (16 votes)

[Support for low-complexity (compressible) lists] <https://mathematica.stackexchange.com/questions/146244/support-for-low-complexity-compressible-lists>

By "low-complexity list" I mean a list like the following:

```
lc1 = {17, 17, 17, 17, 17,
      21, 21, 21, 21, 21, 21, 21, 21,
      11, 11, 11, 11, 11, 11, 11}
```

It contains 20 elements, but only 3 ...

- asked by kjo (10 votes), answered by Mr.Wizard (6 votes)

[Automating documentation generation] <https://mathematica.stackexchange.com/questions/146670/automating-documentation-generation>

Outside of kernel symbols Mathematica provides access to lots of usage info, e.g. Down-Values, Options, Messages, etc.

Most languages, if given this sort of info, would be able to provide an automatic ...

- asked by MB1965 (9 votes), answered by MB1965 (10 votes)

[Trace of -1 expression] <https://mathematica.stackexchange.com/questions/146506/trace-of-1-expression>

I'm trying to understand Trace. Usually it doesn't repeat but it adds -1,-1 for his simple expression after having a correct result.

```
-{1}//Trace
```

```
{-1, {-1}, {-1, -1}, {-1}}
```

Why `-{1}//Trace` is ...

- asked by io_tuta (9 votes), answered by Michael E2 (7 votes)

[How to import a Tensorflow model?] <https://mathematica.stackexchange.com/questions/146216/how-to-import-a-tensorflow-model>

I've trained a network in Tensorflow and have the checkpoint files, I'd like to if anyone has written a parser or importer to pull the evaluation graph and/or weights into Mathematica?

- asked by user5601 (9 votes)

[intersection between two 2D arrays with labeled data is slow] <https://mathematica.stackexchange.com/questions/146558/intersection-between-two-2d-arrays-with-labeled-data-is-slow>

Here is how to Generate data

the function is below with two images to generate data

```
img1
```

```
img2
```

```
segmentImage[binarizedMask_?ImageQ] :=
Module[{seg, areas, indexMaxarea, maxArea},
seg = ...
```

- asked by Ali Hashmi (8 votes), answered by Carl Woll (6 votes)

=====
Greatest hits from previous weeks: =====

[Exporting graphics to PDF - huge file] <https://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[], r Sin[], r^2}, {r, 0, ...
```

- asked by Matthew Leingang (92 votes), answered by Heike (80 votes)

[Generating a Sierpinski carpet] <https://mathematica.stackexchange.com/questions/22052/generating-a-sierpinski-carpet>

I am trying to draw a Sierpinski_carpet. I have code that works, but I think there is a more elegant way to do than my way. Maybe I could use Tuples or Permutations or some similar function to ...

- asked by chyaong (46 votes), answered by Mr.Wizard (75 votes)

=====
Can you answer these?
=====

[Exporting graphics with VertexColors problem] <https://mathematica.stackexchange.com/questions/146306/exporting-graphics-with-vertexcolors-problem>

I've generated a graphics which exhibit gradient color in rectangle and export it as:

```
SetDirectory[NotebookDirectory[]];
Export["./test.pdf", Graphics[{Polygon[{{-4, 5/3}, {-4, 0}, {4, 0}, {4, ...
```

- asked by RoderickLee (3 votes)

[How to imitate the opacity plot in EditColorFunction] <https://mathematica.stackexchange.com/questions/146623/how-to-imitate-the-opacity-plot-in-editcolorfunction>

I wish to imitate the opacity plot as shown below:

Edit2: (ref: <https://www.wolfram.com/mathematica/new-in-9/3d-volumetric-image-processing/edit-color-function-palette-for-image3d.html>)

Here is ...

- asked by Majis (3 votes)

[Possible bug in Export with CharacterEncoding -> "PrintableASCII"] <https://mathematica.stackexchange.com/questions/146294/possible-bug-in-export-with-characterencoding-printableascii>

In the Documentation we read (emphasis is mine):

By default, the Wolfram System uses the character encoding "PrintableASCII" when saving notebooks and packages. This means that when special ...

- asked by Alexey Popkov (4 votes)

4.32 Tuesday, May 16, 2017

=====
 Top new questions this week:
 =====

[Mathematica stuck in "running" for every calculation I attempt, kernel error] <https://mathematica.stackexchange.com/questions/146005/mathematica-stuck-in-running-for-every-calculation-i-attempt-kernel-error>

Bug caused by paclet update and fixed by paclet update.

I downloaded Mathematica this morning to do an implicit polar plot. I attempt to run the code

```
Manipulate[
ContourPlot[
Evaluate@With[{r = ...
```

- asked by Ocelouvsyopoulo7 (26 votes), answered by ilian (16 votes)

[How to split data into clusters based on fitting to function] <https://mathematica.stackexchange.com/questions/146079/how-to-split-data-into-clusters-based-on-fitting-to-function>

I have data which looks somewhat like this:

On the picture, you can see that the data can be described by 2 linear functions - if you manage to split it into 2 groups, each can easily be fitted ...

- asked by Arsen Zahray (10 votes), answered by rhermans (11 votes)

[Inserting cones at intersection points two curves] <https://mathematica.stackexchange.com/questions/145874/inserting-cones-at-intersection-points-two-curves>

I am plotting the null geodesics for a Schwarzschild surface in Schwarzschild coordinates and would light to insert small future light-cones at the points of intersection to emphasize the tipping over ...

- asked by Soof_fie (9 votes), answered by rhermans (3 votes)

[How to define a function inside a Compile?] <https://mathematica.stackexchange.com/questions/145931/how-to-define-a-function-inside-a-compile>

I want to compile a variety of commands, including a function. I need to map this function, inside the compilation, and I can't include the function without facing errors such as ...

- asked by user5253864 (9 votes), answered by xzczd (10 votes)

[How to automatically do a computation, Quit[], restart and do a new computation] <https://mathematica.stackexchange.com/questions/145852/how-to-automatically-do-a-computation-quit-restart-and-do-a-new-computation>

Related questions have been asked before (eg Where does a package have to be loaded?, <http://stackoverflow.com/questions/6152023/quit-kernel-in-mathematica-by-a-command-not-using-evaluation-menu>)

- asked by Gaius (9 votes), answered by Shadowray (6 votes)

[1D transient heat equation problem with controller] <https://mathematica.stackexchange.com/questions/145799/1d-transient-heat-equation-problem-with-controller>

I would appreciate some help with following issue:

I am trying to solve a 1D transient heat equation problem with a control loop in order to compensate a time variable boundary condition at one ...

- asked by daklems (9 votes), answered by user21 (6 votes)

[Clarify when to use Style vs Directive vs List] <https://mathematica.stackexchange.com/questions/145856/clarify-when-to-use-style-vs-directive-vs-list>

I am confused about when to use a simple list of style options, the Directive function or the Style function.

As shown below, for simple situations at least, they seem entirely equivalent which ...

- asked by Joe (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to manipulate 2D plots?] <https://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by István Zachar (115 votes), answered by István Zachar (131 votes)

[Where can I find examples of good Mathematica programming practice?] <https://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (463 votes), answered by faysou (411 votes)

=====
 ===== Can you answer these? =====

[Unexpected behavior of a variable] <https://mathematica.stackexchange.com/questions/145661/unexpected-behavior-of-a-variable>

I am confused with a strange phenomenon that I observe and do not understand.

Look, here is a simple code making a random walk:

```
Clear[list];
list = Accumulate[RandomInteger[{-1, 1}, {10, 2}]]
```

- asked by Alexei Boulbitch (2 votes)

[How can I disable system updates only?] <https://mathematica.stackexchange.com/questions/146133/how-can-i-disable-system-updates-only>

Suppose I'm quite happy with my current Mathematica installation and wish to keep the system in its current form just reliably working.

Since there were already at least two cases[1,2] when a lot of ...

- asked by Alexey Popkov (7 votes)

[Import/export manipulate state in file] <https://mathematica.stackexchange.com/questions/146017/import-export-manipulate-state-in-file>

Is it possible to export the state of Manipulate with big number of parameters in file and then restore the parameters of Manipulate from this file?

- asked by (3 votes)

4.33 Tuesday, May 2, 2017

=====
 Top new questions this week:
 =====

[Count works differently depending on how an association was created] <https://mathematica.stackexchange.com/questions/144813/count-works-differently-depending-on-how-an-association-was-created>

Bug introduced in 10.4 and persisting through 11.1.1

I create two associations, that are supposed to be exactly the same. And then I want to count the elements at the second level. And I get ...

- asked by Stitch (19 votes), answered by WReach (12 votes)

[Why is Plus so much slower than Total?] <https://mathematica.stackexchange.com/questions/145019/why-is-plus-so-much-slower-than-total>

Why is Plus so much slower than total for summing lists?

```
list = RandomReal[1, 10000000];
AbsoluteTiming[Plus @@ list]
AbsoluteTiming[Total[list]]
```

Output:

```
{1.67408, 5.00073*10^6}
{0.00570379, ...}
```

- asked by Jorge Perez (14 votes), answered by Shadowray (17 votes)

[Delete duplicates from list of lists as if on a necklace] <https://mathematica.stackexchange.com/questions/144696/delete-duplicates-from-list-of-lists-as-if-on-a-necklace>

Given a list of lists of integers, all of the same length, I want to regard two elements as equivalent if one is the rotated and/or reflected version of another (that is, if the two lists are the same ...

- asked by rogerl (13 votes), answered by Shadowray (13 votes)

[Exchanging numpy arrays between Python and Mathematica?] <https://mathematica.stackexchange.com/questions/144770/exchanging-numpy-arrays-between-python-and-mathematica>

I've been using `np.savetxt(location, result, delimiter=',')` in Python followed by `Import[location,"CSV"]` in Mathematica.

Some of my files are around 1GB, opening seems a bit slow, what else do people ...

- asked by Yaroslav Bulatov (12 votes), answered by xslittlegrass (16 votes)

[How to plot planar graphs in a visually pleasing way?] <https://mathematica.stackexchange.com/questions/144594/how-to-plot-planar-graphs-in-a-visually-pleasing-way>

Cross posted to Wolfram Community

Mathematica has a layout algorithm to plot planar graphs without edge crossings. This typically produces an ugly triangular layout where some vertices and edges ...

- asked by Szabolcs (11 votes), answered by Szabolcs (6 votes)

[Where are my Cloud Credits going?] <https://mathematica.stackexchange.com/questions/144859/where-are-my-cloud-credits-going>

In less than a month I've used 5k cloud credits (half of my quota) and all I did was deploying a bunch of static notebooks with `CloudDeploy[CurrentNotebook[],permissions->Public]` (more ...

- asked by Yaroslav Bulatov (10 votes)

[Mathematica erroneously says this integral does not converge] <https://mathematica.stackexchange.com/questions/144965/mathematica-erroneously-says-this-integral-does-not-converge>

Mathematica (as of v. 11.1.0) does not recognize that this special case of Frullani's integral converges:

```
Integrate[(ArcTan[a*x] - ArcTan[b*x])/x, {x, 0, Infinity}]
(* Integrate::idiv: Integral of ...
```

- asked by Pillsy (10 votes), answered by Michael E2 (16 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Generating a Sierpinski carpet] <https://mathematica.stackexchange.com/questions/22052/generating-a-sierpinski-carpet>

I am trying to draw a Sierpinski_carpet. I have code that works, but I think there is a more elegant way to do than my way. Maybe I could use Tuples or Permutations or some similar function to ...

- asked by chyaong (46 votes), answered by Mr.Wizard (75 votes)

[Alternatives to procedural loops and iterating over lists in Mathematica] <https://mathematica.stackexchange.com/questions/7924/alternatives-to-procedural-loops-and-iterating-over-lists-in-mathematica>

While there are some cases where a For loop might be reasonable, it's a general mantra one I subscribe to myself that "if you are using a For loop in Mathematica, you are probably doing it wrong". ...

- asked by Mr.Wizard (154 votes), answered by Mr.Wizard (104 votes)

=====
 ===== Can you answer these? =====

[How to get parent key in Query on Association/Dataset?] <https://mathematica.stackexchange.com/questions/144995/how-to-get-parent-key-in-query-on-association-dataset>

Is there a general and terse method to obtain the parent key of the current "position" in a Query of an Association/Dataset?

Say I have the following Association.

```
assoc =
  <|"A" ->|;
  ...
```

- asked by Edmund (3 votes)

[Can anyone help me decipher these few lines? Also, converting this code for a 2x2 matrix input to a 3x3 matrix input?] <https://mathematica.stackexchange.com/questions/145049/can-anyone-help-me-decipher-these-few-lines-also-converting-this-code-for-a-2x>

Here's the code. I'm completely new to Mathematica so bear with me.

```
clear[ug];
ug[{{a11_, a12_}, {a21_, a22_}}] :=
  Module[{A, f, b1, b2, y1, y2, U, P1, P2, UG},
    A = {{a11, a12}, {a21, a22}};
    ...
```

- asked by Pacotacobell (2 votes)

[Bifurcation package like AUTO?] <https://mathematica.stackexchange.com/questions/144795/bifurcation-package-like-auto>

I was wondering if there is any available continuation and bifurcation analysis package for Mathematica. I'm looking for something like AUTO. I've seen there is already a Matlab version of the ...

- asked by Mirko Aveta (3 votes)

4.34 Tuesday, April 25, 2017

=====

Top new questions this week:

=====

[Fast spherical polygon] <https://mathematica.stackexchange.com/questions/144167/fast-spherical-polygon>

Cross posted on Wolfram Community

Question

Given a list of points on a sphere and the sphere's radius, I'd like to plot a spherical polygon with those points as vertices.

And this needs to be fast, ...

- asked by Kuba (20 votes), answered by halirutan (7 votes)

[How to uncompress strings safely (without any evaluation)?] <https://mathematica.stackexchange.com/questions/144171/how-to-uncompress-strings-safely-without-any-evaluation>

Compressed strings are often used to exchange Mathematica expressions on the Internet. It is, however, not easy to see what such expression will do after decompression. Resulting code can perform ...

- asked by Shadowray (15 votes), answered by Itai Seggev (11 votes)

[Sharing data via the cloud] <https://mathematica.stackexchange.com/questions/144130/sharing-data-via-the-cloud>

I've got some stuff that I want to be able distribute to my totally real friends, but I don't want to have to email them every time I change something.

How can I set up sharing via the cloud?

- asked by MB1965 (13 votes), answered by MB1965 (13 votes)

[C++ interface to large project] <https://mathematica.stackexchange.com/questions/144047/c-interface-to-large-project>

We are developing a quite large mathematical software in C++ and would like to have a Mathematica interface. We have our own C++ library and our idea would be, to write a Mathematica wrapper class and ...

- asked by Richard (12 votes), answered by Szabolcs (12 votes)

[Why doesn't FullSimplify return -x working on Abs[x] and x<0?] <https://mathematica.stackexchange.com/questions/144310/why-doesnt-fullsimplify-return-x-working-on-absx-and-x0>

I am using Mathematica 11.1, and I stumbled upon this strange response using the Abs function.

```
FullSimplify[Abs[x], x<0]
(* Abs[x] *)
```

while, for example

```
FullSimplify[Abs[x], x>0]
(* x *)
```

as ...

- asked by mickep (10 votes), answered by Simon Woods (13 votes)

[ParallelMap vs Map performance comparison] <https://mathematica.stackexchange.com/questions/144056/parallelmap-vs-map-performance-comparison>

The ParallelMap claims doing map faster than the normal Map, and I checked the demo does as the document describing

but, I try my testing, it seems not exactly while ParallelMap excuting with 8 ...

- asked by Jerry (10 votes), answered by Szabolcs (10 votes)

[How to plot a matrix with 3D style] <https://mathematica.stackexchange.com/questions/144443/how-to-plot-a-matrix-with-3d-style>

I have a list like

```
SeedRandom[1]
MatrixForm[list = RandomInteger[5, {5, 5}]]
```

We can plot it with MatrixPlot directly with 2D style

```
MatrixPlot[list]
```

I hope to plot it with 3D style. This is ...

- asked by yode (9 votes), answered by kglr (2 votes)

=====
Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <https://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (463 votes), answered by faysou (410 votes)

[How can I plot the direction field for a differential equation?] <https://mathematica.stackexchange.com/questions/8841/how-can-i-plot-the-direction-field-for-a-differential-equation>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

- asked by Matt Groff (20 votes), answered by Peter Breitfeld (16 votes)

=====
Can you answer these? =====

[Quality of RegionIntersection[]: How to control?] <https://mathematica.stackexchange.com/questions/144270/quality-of-regionintersection-how-to-control>

This code produces a crude intersection.

```
a = {-1/2, -1/2, -1/2};
b = {1/2, 1/2, 1/2};
R = RegionIntersection[Ball[a, 1], Ball[b, 1]];
Region[R]
```

How can I control the quality so that the ...

- asked by Joseph O'Rourke (4 votes)

[Why ReadList ignores NullRecords for Number?] <https://mathematica.stackexchange.com/questions/144149/why-readlist-ignores-nullrecords-for-number>

When thinking on this recent question the immediately obvious solution which came to my mind was to use `ReadList` with options `RecordLists -> True` and `NullRecords -> True` for reading objects of ...
 - asked by Alexey Popkov (5 votes)

[Why does the domain of an interpolating function not match the corresponding `ParametricNDSolve` solution range?] <https://mathematica.stackexchange.com/questions/144355/why-does-the-domain-of-an-interpolating-function-not-match-the-corresponding-par>

Question

I had believed - and mostly observed - that when I use `ParametricNDSolve` the obtained `ParametricFunctions` given as the solution to some ODE or DAE will be translated into ...
 - asked by gwr (3 votes)

4.35 Tuesday, April 18, 2017

=====

Top new questions this week:

=====

[Crack CAPTCHA using deep learning] <https://mathematica.stackexchange.com/questions/143691/crack-captcha-using-deep-learning>

Deep convolutional neural networks are very good at computer vision related tasks. Optical Character Recognition (OCR) is one important branch of computer vision. In fact, the convolution neural ...

- asked by xslittlegrass (50 votes), answered by xslittlegrass (52 votes)

[Changes to `Series[...]` in version 11.1] <https://mathematica.stackexchange.com/questions/143414/changes-to-series-in-version-11-1>

I have updated to Mathematica 11.1 and I am shocked to see that the `Series`-function now works differently:

If I enter

```
Series[x^2+x^3, {x,0,0}]
```

it will return

$x^2+0[x]^3$

which is just weird. In ...

- asked by Matthias Koenig (16 votes), answered by QuantumDot (3 votes)

[WNet format incompatible between version 11.0 and 11.1] <https://mathematica.stackexchange.com/questions/143699/wlnet-format-incompatible-between-version-11-0-and-11-1>

It seems that there are some behavior changes of neural network layers from version 11.0 to 11.1 that leads to the incompatibility of WNet format.

Consider this example:

Network exported in 11.0

...

- asked by xslittlegrass (13 votes), answered by Taliesin Beynon (7 votes)

[DSolve solution depends on ordering of equation] <https://mathematica.stackexchange.com/questions/143726/dsolve-solution-depends-on-ordering-of-equation>

Bug introduced in 8.0 or earlier and persisting through 11.1.0 or later

I am trying to obtain the general solution, $G(x_1, x_2, x_3, x_4)$ to the very easy system of PDEs:

- asked by Jeremy Upsal (12 votes), answered by Nasser (8 votes)

[Why the Callout option makes plotting performance poor] <https://mathematica.stackexchange.com/questions/143711/why-the-callout-option-makes-plotting-performance-poor>

Bug introduced in 11.0 and fixed in 11.1

The Callout option is a new option for plotting, but the performance is very poor, see below testing case.

```
num = 1000;
list = N@Sin@Range[num];
list2 = ...
```

- asked by Jerry (11 votes)

[Neural machine translation model using deep learning] <https://mathematica.stackexchange.com/questions/143609/neural-machine-translation-model-using-deep-learning>

In Mathematica version 11.1, SequenceAttentionLayer is introduced to model attentions in the recurrent neural network. It has been shown that attention mechanism can greatly improve the quality of a ...

- asked by xslittlegrass (11 votes), answered by Sebastian (8 votes)

[Backslide in NSolve in V11.1?] <https://mathematica.stackexchange.com/questions/143824/backslide-in-nsolve-in-v11-1>

In V11.1,

```
NSolve[BesselJ[0, x] == 0 && 0 < x < 20, x]
```

returns no solutions:

But in V11.0 (and earlier), it returns all solutions:

Is there anyway to get NSolve to solve this ...

- asked by Michael E2 (10 votes), answered by Nasser (8 votes)

==== Greatest hits from previous weeks: =====

[How to perform a multi-peak fitting?] <https://mathematica.stackexchange.com/questions/26336/how-to-perform-a-multi-peak-fitting>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data = peak1 + peak2 + peak3).

The ...

- asked by Everett You (43 votes), answered by Silvia (45 votes)

[How to make an inkblot?] <https://mathematica.stackexchange.com/questions/3345/how-to-make-an-inkblot>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

```
RandomBlot[num_, opts___] := ...
```

- asked by István Zachar (84 votes), answered by Sjoerd C. de Vries (47 votes)

==== Can you answer these?
====

[How to create an APIFunction that takes a list with constraints on the list elements?] <https://mathematica.stackexchange.com/questions/143709/how-to-create-a-n-apifunction-that-takes-a-list-with-constraints-on-the-list-elem>

This APIFunction takes a list as an argument:

```
func = APIFunction[{"x" -&gt; DelimitedSequence["Integer", ", "], #x^3 &amp;};
```

```
func["x" -&gt; Range[4]]
```

What I'd like to be able to do is place a ...

- asked by Mike Honeychurch (4 votes)

[How to setup FrameTicks for TradingChart] <https://mathematica.stackexchange.com/questions/143705/how-to-setup-frameticks-for-tradingchart>

I'm trying to setup FrameTicks for TradingChart, but it doesn't work.

```
(*take data*)
```

```
data = FinancialData["NASDAQ:AAPL", "OHLCV", {{2017, 1, 1}, {2017, 4, 16}}];
```

```
(*def. of ticks*)
```

```
maxh = ...
```

- asked by Jerry (3 votes)

[What are the software requirements to train neural networks on GPU?] <https://mathematica.stackexchange.com/questions/143795/what-are-the-software-requirements-to-train-neural-networks-on-gpu>

It seems that GPU training in Mathematica has some additional requirements on the software. For example, when I run this example on a Linux system, I get the following errors


```
trainingData =
  ...
```

- asked by xslittlegrass (8 votes)

4.36 Tuesday, April 11, 2017

```
=====
Top new questions this week:
=====
```

[L-System in Mathematica] <http://mathematica.stackexchange.com/questions/143214/l-system-in-mathematica>

Here is some Maple code for drawing an L-System:

```
with(Fractals:-LSystem)
cons := ["A" = "draw:1", "+" = "turn:-90", "B" = "turn:90"]
state, rules := "A", ["A" = "AB+BA+B", "B" = "B+AAB"]
...
```

- asked by vito (21 votes), answered by Szabolcs (21 votes)

[What's purpose of the new function BinarySerialize?] <http://mathematica.stackexchange.com/questions/141885/whats-purpose-of-the-new-function-binaryserialize>

11.1 introduced a new function BinarySerialize, but I don't know what it can do better than the traditional method. Its behavior is very similar to Compress, though I cannot find any advantage of it. It ...

- asked by yode (17 votes), answered by Shadowray (14 votes)

[Why does SetPrecision not apply to 0?] <http://mathematica.stackexchange.com/questions/143296/why-does-setprecision-not-apply-to-0>

Is there a rationale why SetPrecision works on integers except for 0?

```
SetPrecision[1,5]
```

```
1.0000
```

SetPrecision[0,5]

0

- asked by alancalvitti (11 votes), answered by Shadowray (17 votes)

[How to use Mathematica to train a network Using out of core classification?] <http://mathematica.stackexchange.com/questions/142135/how-to-use-mathematica-to-train-a-network-using-out-of-core-classification>

I see there is doc about how to train a network Using out of core image classification and this question. But the object is only image.

I want to use a binary file as data, for example, this.

data = ...

- asked by partida (10 votes), answered by xslittlegrass (9 votes)

[Combining pure functions] <http://mathematica.stackexchange.com/questions/142072/combining-pure-functions>

Is there an easy way to combine pure functions into a single pure function? For example, say I have

```
f = #1^2 &&;
```

```
g = #1 - 2 &&;
```

and I want to define a new pure function h that is the ...

- asked by tparker (10 votes), answered by Kuba (5 votes)

[Question about changes in Documentation Center from version 10 to 11] <http://mathematica.stackexchange.com/questions/143335/question-about-changes-in-documentation-center-from-version-10-to-11>

The package Exploring Abstract Algebra with Mathematica works fine in Mathematica 10.4.

After installing it in the \$UserBaseDirectory it neatly shows up under Add-Ons and Packages in the ...

- asked by nilo de roock (9 votes), answered by Szabolcs (8 votes)

[How can I install packages distributed as .paclet files?] <http://mathematica.stackexchange.com/questions/141887/how-can-i-install-packages-distributed-as-paclet-files>

I downloaded a Mathematica package. It came as a file with the .paclet extension. How can I install or uninstall it?

- asked by Szabolcs (9 votes), answered by Szabolcs (8 votes)

==== Greatest hits from previous weeks: =====

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[], r Sin[], r^2}, {r, 0, ...
```

- asked by Matthew Leingang (90 votes), answered by Heike (77 votes)

[Unit Discovery: Is this some sort of a sick joke?] <http://mathematica.stackexchange.com/questions/124745/unit-discovery-is-this-some-sort-of-a-sick-joke>

Alright, let's have some fun here. I am essentially following the documentation by Wolfram, just looking at different quantities.

```
N[UnitConvert[Quantity["earth's gravity"]]]
```

```
9.80665m/(s)^2
```

```
Hmm, ...
```

- asked by Pirx (31 votes), answered by user31159 (30 votes)

==== Can you answer these? =====

[How to get consistent/predictable results from 'Alignment' specs within a 'Grid' environment?] <http://mathematica.stackexchange.com/questions/142047/how-to-get-consistent-predictable-results-from-alignment-specs-within-a-grid>

IME, the results of Alignment specifications within a Grid environment are completely unpredictable.

I give several examples below illustrating this unpredictability.

My questions are:

Is there a ...

- asked by kjo (4 votes)

[Why Integrate does not work in the first call?] <http://mathematica.stackexchange.com/questions/143199/why-integrate-does-not-work-in-the-first-call>

Consider an example (calculated in Mathematica 11.0.1.0):

```
In[1]:= Integrate[(Sin[ $\pi$  xc)/(2 Lc)] Sin[(m  $\pi$  ...
```

- asked by Shinrei (3 votes)

[Geo data load issues: Texas is missing from GeoRegionValuePlot in v11, but only when mapping US states] <http://mathematica.stackexchange.com/questions/142079/geo-data-load-issues-texas-is-missing-from-georegionvalueplot-in-v11-but-only>

UPDATE: this is not a global Mathematica issue, but a data load issue on a local machine. Does anyone know how to clear Geo cache and reload the data? I've also noticed on this machine that ...

- asked by Gregory Klopper (3 votes)

4.37 Tuesday, April 4, 2017

=====

Top new questions this week:

=====

[Object detection and localization using neural network] <http://mathematica.stackexchange.com/questions/141598/object-detection-and-localization-using-neural-network>

Four important computer vision tasks are classification, localization, object detection and instance segmentation (image taken from cs224d course):

These four tasks are all built on top of the deep ...

- asked by xslittlegrass (30 votes), answered by xslittlegrass (33 votes)

[Ball Bouncing on Hilly Terrain] <http://mathematica.stackexchange.com/questions/141209/ball-bouncing-on-hilly-terrain>

There is a maple code for the bouncing ball on the given curve.

I tried to make this animation by using Mathematica

Why does the following code not work?

```
surf := Sin[x] + (0.2 Cos[4 x + Sin[4 ...
```

- asked by vito (19 votes), answered by Stitch (15 votes)

[Dataset is 20X slow when adding column heads] <http://mathematica.stackexchange.com/questions/141223/dataset-is-20x-slow-when-adding-column-heads>

I'm trying to use Dataset to explore some large data. I notice that the performance decrease more than 20X by adding heads to the columns. Here is an example:

We generate some data with integers

...

- asked by xslittlegrass (14 votes), answered by Mr.Wizard (3 votes)

[Benchmarking: unexplained switching between high and low performance] <http://mathematica.stackexchange.com/questions/141350/benchmarking-unexplained-switching-between-high-and-low-performance>

tl;dr I am trying to accurately benchmark some vectorized operations, and compare them between systems. But benchmarking is hard to do well, and I am getting inconsistent results: performance is ...

- asked by Szabolcs (13 votes)

[How to visualize attention?] <http://mathematica.stackexchange.com/questions/141542/how-to-visualize-attention>

In the articles about sequence attention we can see images like this:

Here we see that while translating from French to English, the network attends sequentially to each input state, but sometimes ...

- asked by Alexey Golyshev (12 votes), answered by xslittlegrass (4 votes)

[Can one create a custom front-end for Mathematica?] <http://mathematica.stackexchange.com/questions/141581/can-one-create-a-custom-front-end-for-mathematica>

I'd like to create my custom front-end for Mathematica. I know there's a console interface (launched as math), which mostly works great, but it can't really provide functionality of e.g. interactive ...

- asked by Ruslan (9 votes)

[How to clear Integrate internal memory?] <http://mathematica.stackexchange.com/questions/141324/how-to-clear-integrate-internal-memory>

I noticed that when I call Integrate for the first time, on an integral that I know will take longer than the time limit I give it, it will abort for the first time, as expected when wrapped by ...

- asked by Nasser (9 votes), answered by J. M. (11 votes)

=====
 Greatest hits from previous weeks: =====

[Creating legends for plots with multiple lines?] <http://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . .}
```

If I then do `ListLinePlot[Table[Log[b,#2]&@@@data, {b,1,10,2}]]`
 I have no way to generate a legend ...

- asked by Eiyrioü von Kauyf (60 votes), answered by Jens (89 votes)

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (49 votes), answered by Artes (39 votes)

=====
 ===== Can you answer these?
 =====

[GraphicsComplex dynamic colors] <http://mathematica.stackexchange.com/questions/141489/graphicscomplex-dynamic-colors>

I have a fairly large GraphicsComplex (surface mesh with more than several thousand vertices) and I want to visualize a scalar function that is defined on the vertices. I map the function to vertex ...

- asked by Beginner (6 votes)

[how to efficiently generate all directed graphs with 6 vertices] <http://mathematica.stackexchange.com/questions/141681/how-to-efficiently-generate-all-directed-graphs-with-6-vertices>

I am attempting to generate all non-isomorphic directed graphs with 6 vertices using command ListGraphs[6, Directed]. But it does not work efficiently and takes a month producing nothing.

Can anyone ...

- asked by Mike (6 votes)

[Bug in Limit in version 11.1.0] <http://mathematica.stackexchange.com/questions/141233/bug-in-limit-in-version-11-1-0>

Bug introduced in version 11.1.0

The infinite limit

Assuming[a > 0 & b > 0,

Limit[$\frac{((1+a)*b*x)}{\sqrt{1+(1+a)*b*x*((1+a)*b*x+\sqrt{1+(1+a)^2*b^2*x^2}}}$],
 x->Infinity]

gives the ...

- asked by Roman (5 votes)

4.38 Tuesday, March 28, 2017

=====

Top new questions this week:

=====

===== Top new questions this week: =====

[Faster derangements?] <http://mathematica.stackexchange.com/questions/140794/faster-derangements>

I wonder what is the fastest method to generate derangements?

Both the Combinatorica function and Martin Ender's answer to Permutations of lists of fixed even numbers are based on filtering the ...

- asked by Mr.Wizard (22 votes), answered by jkuczm (21 votes)

[Why Except is so slow as compared to equivalent RegularExpression?] <http://mathematica.stackexchange.com/questions/140752/why-except-is-so-slow-as-compared-to-equivalent-regularexpression>

When comparing performance of the solutions suggested for this question I discovered that StringExpression involving Except is two orders of magnitude slower for large strings as compared to ...

- asked by Alexey Popkov (18 votes), answered by Alexey Popkov (20 votes)

[FrameTicks setting for "tick marks on all sides, but labels only on right and top"] <http://mathematica.stackexchange.com/questions/140966/frameticks-setting-for-tick-marks-on-all-sides-but-labels-only-on-right-and-to>

Short version: Is there a value for the FrameTicks option that retains the default tick marks on all sides, and puts tick labels only on the right and top sides?

I can imagine all manner of ...

- asked by kjo (15 votes), answered by Mr.Wizard (7 votes)

[Quickly importing several thousands of jpg files?] <http://mathematica.stackexchange.com/questions/140974/quickly-importing-several-thousands-of-jpg-files>

I have several thousands of small .jpg files (30kb each) which I need to import into Mathematica. (I plan to use ImageDistance to investigate their differences.) I tried several ways to import these ...

- asked by Kagaratsch (14 votes), answered by Szabolcs (13 votes)

[Select seems unusually slow] <http://mathematica.stackexchange.com/questions/140861/select-seems-unusually-slow>

I haven't been doing nearly as much Mathematica as I really should for the past few months, and in order to get my head back in the game I've been using it to run roughshod over easy Project Euler ...

- asked by Pillsy (13 votes), answered by Bob Hanlon (10 votes)

[Permutations of nested parentheses (Dyck words)] <http://mathematica.stackexchange.com/questions/141127/permutations-of-nested-parentheses-dyck-words>

How would I construct a function that outputs Dyck Words?

e.g. - there are 14 words in \mathcal{D}_3 :

'[[[[[]]]], [[[] []]], [[[]] []], [[] [[]]], [[[]]] [], [[] [] []], [] [[[]]],
 [[] []] [], [[]] [[]], ...

- asked by martin (11 votes), answered by Mr.Wizard (13 votes)

[Bug: Library functions from older versions of Mathematica may crash in Mathematica 11.1 and conversely] <http://mathematica.stackexchange.com/questions/140758/bug-library-functions-from-older-versions-of-mathematica-may-crash-in-mathemati>

The following is a confirmed bug [CASE:3846875] that turned up in the prerelease 11.1.0 and is not solved in the official release.

This is a small example. Execute the following commands in ...

- asked by Fred Simons (11 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to make a Spherical Cow?] <http://mathematica.stackexchange.com/questions/125043/how-to-make-a-spherical-cow>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

- asked by Sumit (60 votes), answered by andre (69 votes)

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc] <http://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations (expectation values etc.) by running them through Mathematica. When I say, for example,

```
u[x_] := Sqrt[2/L] * Sin[Pi * n * x / L]
```

and then ...

- asked by Matthew Brunetti (13 votes), answered by SquareOne (10 votes)

==== Can you answer these?
====

[Why does LatticeReduce require integral or at least rational inputs?] <http://mathematica.stackexchange.com/questions/141002/why-does-latticereduce-require-integral-or-at-least-rational-inputs>

The function LatticeReduce in Mathematica implements the LLL algorithm. It requires the lattice basis to be described as integral or at least rational numbers.

Why so?

The LLL algorithm itself is ...

- asked by wdlang (3 votes)

[Textual progress in console?] <http://mathematica.stackexchange.com/questions/140675/textual-progress-in-console>

Is there any way to get a textual progress bar (e.g. like the progressbar module in a python repl) when working in console mode?

Anything would be better than this:

- asked by user5601 (6 votes)

[How to trigger an "ErrorBox behavior"?) <http://mathematica.stackexchange.com/questions/140979/how-to-trigger-an-errorbox-behavior>

Here's an example of what I mean by an "ErrorBox behavior". In the front end, if one evaluates the expression

```
Graphics[Circle[], ImageSize -&gt; Tiny, PlotRange -&gt; {All}]
```

(which includes the ...

- asked by kjo (7 votes)

4.39 Tuesday, March 21, 2017

=====

Top new questions this week:

=====

[V11.1: Effective methods to use paid functions economically] <http://mathematica.stackexchange.com/questions/140261/v11-1-effective-methods-to-use-paid-functions-economically>

In the newly released version 11.1, Mathematica introduces three new functions: WebSearch, WebImageSearch and TextTranslation that requires Service Credits. While I haven't found much information ...

- asked by happy fish (30 votes), answered by Wjx (14 votes)

[How do I disable the stack tracing feature in Mathematica 11?] <http://mathematica.stackexchange.com/questions/140285/how-do-i-disable-the-stack-tracing-feature-in-mathematica-11>

Bug was introduced in 11.0 and persisting through 11.1

It looks like the Mathematica 11 stack tracing feature (see red ellipsis in front of any warning message) prevents the garbage collector from ...

- asked by Shadowray (28 votes), answered by user6014 (23 votes)

[Generative Adversarial Network] <http://mathematica.stackexchange.com/questions/140294/generative-adversarial-network>

Generative adversarial networks (GAN) is regarded as one of "the most interesting idea in the last ten years in machine learning" by Yann LeCun. It can be used to generate photo-realistic images that ...

- asked by xslittlegrass (17 votes), answered by Taliesin Beynon (8 votes)

[Modeling the spread of an infection in networked computers] <http://mathematica.stackexchange.com/questions/140099/modeling-the-spread-of-an-infection-in-networked-computers>

I would like to show the iterative stages of infection for problem 2 in this link.

In case the link dies, I have copied the text for the problem below:

One hundred computers are connected in a ...

- asked by martin (14 votes), answered by Martin Ender (24 votes)

[how to remove the little \times that shows up in frontend when typing?] <http://mathematica.stackexchange.com/questions/140583/how-to-remove-the-little-x-that-shows-up-in-frontend-when-typing>

Version 11.1 now shows a little grayed out \times (a multiplication sign) when one is editing something, to warn them that the expression will be interpreted as the multiplication of what precedes and ...

- asked by Nasser (12 votes), answered by Nasser (18 votes)

[Delete redundant x,y pairs] <http://mathematica.stackexchange.com/questions/140571/delete-redundant-x-y-pairs>

Working through the problems from Hazrat's Mathematica book and there's a simple exercise to find all the square numbers where $n^2 + m^2 = h^2$ yields h as an integer (I think they're also called ...

- asked by Joe (10 votes), answered by kglr (13 votes)

[Getting Compile to work with Visual Studio 2017 Community Edition] <http://mathematica.stackexchange.com/questions/140071/getting-compile-to-work-with-h-visual-studio-2017-community-edition>

The new Visual Studio is out since a week and I tried to get it to work with Mathematica (v 11.0). However the usual tricks for working with a new VS version fail here.

Related seems to be the ...

- asked by Sjoerd C. de Vries (10 votes)

=====
 Greatest hits from previous weeks: =====

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (114 votes), answered by ArgentoSapiens (110 votes)

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (34 votes), answered by Artes (25 votes)

=====
 Can you answer these?
 =====

[Explaining error when using Part inside Module in Dataset] <http://mathematica.stackexchange.com/questions/140541/explaining-error-when-using-part-inside-module-in-dataset>

I have a vague recollection of seen an explanation for this, but I can not find it, so it may be a false memory. Will delete if duplicated.

Let ds be a simple Dataset

```
ds = Dataset@Table[
```

```
...
```

- asked by rhermans (4 votes)

[Performance-driven approach to using Big Data without killing the hard-drive] <http://mathematica.stackexchange.com/questions/140114/performance-driven-approach-to-using-big-data-without-killing-the-hard-drive>

Situation

A calculation has to be done in which the amount of data is too much to fit into memory. Fortunately, only a part of the overall data set has to be known at a time. The preprocessing is ...

- asked by pbx (7 votes)

[Bug with PlotLegends->Placed in GraphicsRow] <http://mathematica.stackexchange.com/questions/140539/bug-with-plotlegends-placed-in-graphicsrow>

Bug introduced in 11.0 and persisting through 11.1

The FrontEnd of Mathematica 11.1.0 on my Windows 7 box runs permanently at 100% CPU when I execute the following command:

...

- asked by RonH (3 votes)

4.40 Tuesday, March 14, 2017

=====

Top new questions this week:

=====

[How to implement a discrete data representation?] <http://mathematica.stackexchange.com/questions/139818/how-to-implement-a-discrete-data-representation>

I'm currently working with large datasets of "discrete data". Each of these is a multiset of real numbers of the form $kS + B$, where k is an integer, and S (the "scale") and B (the "bias") are ...

- asked by kjo (17 votes), answered by gwr (14 votes)

[Mathematica incorrectly giving zero for partial derivative] <http://mathematica.stackexchange.com/questions/139669/mathematica-incorrectly-giving-zero-for-partial-derivative>

Bug introduced in 9.0.1 or earlier

Mathematica is incorrectly reporting that the partial derivative of a certain expression is zero.

I try to compute the following:

`D[SymmetricPolynomial[3, {x1, ...`

- asked by Izaak Meckler (17 votes), answered by march (6 votes)

[Finding vampire numbers] <http://mathematica.stackexchange.com/questions/139808/finding-vampire-numbers>

How to find vampire numbers by using Mathematica?

A number $v = xy$ with an even number n of digits formed by multiplying a pair of $n/2$ -digit numbers (where the digits are taken from the ...

- asked by vito (13 votes), answered by wolfies (8 votes)

[Why do subsequent evaluations seem to be stopped by a False Condition (/;)?] <http://mathematica.stackexchange.com/questions/139461/why-do-subsequent-evaluations-seem-to-be-stopped-by-a-false-condition>

Exploring another problem and this example of @halirutan, I came across an evaluation behavior I don't understand.

When `g[]` below is evaluated the first time, `ig[]` is evaluated and a message printed; ...

- asked by Michael E2 (12 votes), answered by Carl Woll (13 votes)

[Bug? Numerical calculation error with FullSimplify and arbitrary precision] <http://mathematica.stackexchange.com/questions/139697/bug-numerical-calculation-error-with-fullsimplify-and-arbitrary-precision>

Bug introduced after 5.2, fixed in 8.0, reintroduced in 9.0 and persisting through 11.0.1

Is this a bug?

If I do

```
FullSimplify[n E^(0.'10 n)]
```

then it returns

```
n/2
```

what is obviously incorrect.

...

- asked by David Bevan (10 votes)

[Is there a convention on which name to use for a throwaway variable? (Like underscore in Python)] <http://mathematica.stackexchange.com/questions/139622/is-the>

re-a-convention-on-which-name-to-use-for-a-throwaway-variable-like-und
er

I would prefer to write `{_, foo} = LongFunctionName[arg1, arg2]` instead of
`foo = LongFunctionName[arg1, arg2][[2]]` or `foo = Last @ LongFunctionName[arg1, arg2]`.
Using an actual name for the throwaway ...

- asked by ZeitPolizei (10 votes), answered by Mr.Wizard (5 votes)

[Extract images from large avi movies (50-100 GB)] <http://mathematica.stackexchange.com/questions/139819/extract-images-from-large-avi-movies-50-100-gb>

I will get large RGB avi files (35 Hz, 1600*1200 pixels) of up to 100 GB size. All three channels contain the same grayscale image.

I want to extract each avi file into one channel png images.

To do ...

- asked by mrz (8 votes), answered by mrz (11 votes)

=====
Greatest hits from previous weeks: =====

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc]
<http://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations by running them through Mathematica. Expectation values and stuff like that. When I say, for example,

`u[x_] := Sqrt[2/L] * Sin[Pi * n * x / ...`

- asked by Matthew Brunetti (11 votes), answered by SquareOne (9 votes)

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (460 votes), answered by faysou (404 votes)

=====
 ===== Can you answer these?
 =====

[Integrating rational functions of several variables over \mathbb{H}^4] <http://mathematica.stackexchange.com/questions/139631/integrating-rational-functions-of-several-variables-over-mathbbh4>

Let W be a rational function of 8 variables a, b, c, d, e, f, g, h from this file, e.g.:

$$W = (256*b*d*f*(a^5 + b^4*(c - 2*e) - a^4*(3*c + 2*e) - c*(c^2 + d^2)*(e^2 + f^2) + a^2$$

- asked by Ricardo Buring (4 votes)

[Best Wolfram tool for interactive web-based calculator] <http://mathematica.stackexchange.com/questions/139954/best-wolfram-tool-for-interactive-web-based-calculator>

A colleague is considering re-implementing this online "Photon Propulsion Calculator" using a Mathematica-based product. I wanted to ask the community which product would be best.

WebMathematica

...

- asked by ConvexMartian (8 votes)

[How to get rid of a built-in context from autocomplete?] <http://mathematica.stackexchange.com/questions/139783/how-to-get-rid-of-a-built-in-context-from-autocomplete>

I have noticed that when I type the name of built-in function Limit in Mathematica, the autocomplete suggests two variants at the top: the first one is the working one, and the second one is just ...

- asked by user372003 (4 votes)

4.41 Tuesday, March 7, 2017

=====

Top new questions this week:

=====

[What are some common issues with fitting functions to data?] <http://mathematica.stackexchange.com/questions/139038/what-are-some-common-issues-with-fitting-functions-to-data>

Mathematica has numerous functions designed to, or capable of, fitting known functions, and finding unknown functions to match data sets. What are some common issues that come with finding those fits? ...

- asked by Feyre (20 votes), answered by Feyre (21 votes)

[Notebook's TaggingRules inherit too much] <http://mathematica.stackexchange.com/questions/139017/notebooks-taggingrules-inherit-too-much>

Bug introduced in V10.4 or earlier and persisting through 11.0.1

[CASE:3852725] was created

[...] I have forwarded an incident report to our developers with the information you provided. ...

- asked by Kuba (14 votes), answered by Kuba (3 votes)

[Is ExportString defective in V11?] <http://mathematica.stackexchange.com/questions/138932/is-exportstring-defective-in-v11>

Mathematica doesn't do the best job of exporting figures with shading or transparency to vector graphics formats such as PDF.

A common trick employed here and elsewhere on the web to workaroud this ...

- asked by Quantum_Oli (11 votes)

[Commands to stop and continue evaluation without Debugger] <http://mathematica.stackexchange.com/questions/139377/commands-to-stop-and-continue-evaluation-without-debugger>

I would like to stop the evaluation somewhere at a specify line in a notebook. Then I could for example check the state of some variables.

After that I would like to continue the evaluation from the ...

- asked by lio (10 votes), answered by Szabolcs (9 votes)

[How am I misusing EvenQ, or, how are EvenQ and $(\text{Mod}[2, \#] == 0) \&$ differently evaluated?] <http://mathematica.stackexchange.com/questions/139281/how-am-i-misusing-evenq-or-how-are-evenq-and-mod2-0-differently-evalua>

While working on a problem, I was using EvenQ in a RegionPlot. I came across this interesting case (simplified here for specificity). I expected to see a bunch of stripes, but got nothing:

...

- asked by Piquan (10 votes), answered by Mr.Wizard (9 votes)

[Partition a list by count of a number] <http://mathematica.stackexchange.com/questions/138905/partition-a-list-by-count-of-a-number>

I want to take this list when the 2 appear 3 times

```
SeedRandom[1]
```

```
list = RandomChoice[ {.2, .5, .3} -&gt; {1, 2, 3}, 20]
```

```
{3,1,3,1,2,1,2,2,2,3,2,3,2,2,3,3,3,2,2,2}
```

Hope to get {3, 1, 3, 1, 2, 1, ...

- asked by yode (10 votes), answered by Mr.Wizard (5 votes)

[Why SciDraw can not handle the StreamPlot?] <http://mathematica.stackexchange.com/questions/138926/why-scidraw-can-not-handle-the-streamplot>

I find that the package SciDraw is suitable for preparing the figure in the thesis. When I use it to plot the line, it works well. For example

```
<<SciDraw`
```

```
...
```

- asked by IceOcean (10 votes), answered by Szabolcs (11 votes)

=====
 Greatest hits from previous weeks: =====

[How to express trigonometric equation in terms of of given trigonometric function?] <http://mathematica.stackexchange.com/questions/434/how-to-express-trigonometric-equation-in-terms-of-of-given-trigonometric-functio>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$$\sin^2[x] + \cos^2[x] = 1$$

$$\sin[x] / \cos[x] = \tan[x]$$

...

- asked by Prashant Bhate (25 votes), answered by Simon (32 votes)

[Calculate the 2D Fourier transform of an Image] <http://mathematica.stackexchange.com/questions/29203/calculate-the-2d-fourier-transform-of-an-image>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

- asked by user8727 (5 votes), answered by Nasser (27 votes)

=====
 Can you answer these?
 =====

[Two-Point correlation function of Ising data is not giving expected results] <http://mathematica.stackexchange.com/questions/139016/two-point-correlation-function-of-ising-data-is-not-giving-expected-results>

Due to the nature of my problem, and readers perhaps not having a physics background, I need to give some context to my problem which is intrinsic to it. The problem however is not a physics one, but ...

- asked by Luca Pontiggia (3 votes)

[Evaluating an expectation expressed by a difficult expression] <http://mathematica.stackexchange.com/questions/138917/evaluating-an-expectation-expressed-by-a-difficult-expression>

Background

I have a 2-dimensional space. The receiver is at the center. The locations of transmitters are given by the PPP Φ with density λ . The serving transmitter is the one that is ...

- asked by George Harnandez (3 votes)

[How to control indentation of a cell relative to it's parent?] <http://mathematica.stackexchange.com/questions/138971/how-to-control-indentation-of-a-cell-relative-to-its-parent>

Is there a stylesheet property that can be set to control the extra level of indentation of a cell in its group (I don't want to specify absolute CellMargins)?

Carl suggests in the comments to use ...

- asked by user5601 (3 votes)

4.42 Tuesday, February 28, 2017

=====

Top new questions this week:

=====

[Parallelize Map and ParallelMap] <http://mathematica.stackexchange.com/questions/138476/parallelize-map-and-parallelmap>

Bug introduced in 8.0 and persisting through 11.0.1 or later

It is stated in the documentation that

`Parallelize[Map[f, expr]]` is equivalent to `ParallelMap[f, expr]`.

But what about these ...

- asked by Mher (29 votes), answered by Szabolcs (23 votes)

[Can we intelligently control evaluation in Thread?] <http://mathematica.stackexchange.com/questions/138661/can-we-intelligently-control-evaluation-in-thread>

This is a bid at creating a canonical Q&A.

Many questions have been asked that come down to the fact that Thread evaluates its first argument before threading is attempted. In a few minutes I ...

- asked by Mr.Wizard (27 votes), answered by Mr.Wizard (21 votes)

[Learn Mathematica (Wolfram) Language in one day] <http://mathematica.stackexchange.com/questions/138366/learn-mathematica-wolfram-language-in-one-day>

Currently I am trying to learn Python. Searching for relevant material I came across X in Y minutes

and books with titles such as Learn Python in one day, in 24 hours, etc.

Similar material exists ...

- asked by dimitris (23 votes), answered by masterxilo (5 votes)

[Puzzle 20 People to consume 20 units of food under constraints] <http://mathematica.stackexchange.com/questions/138637/puzzle-20-people-to-consume-20-units-of-food-under-constraints>

I am learning Mathematica because I love it. I also love solving puzzles so I think it would be a nice way to learn Mathematica through puzzles. This is first puzzle in series I intend to solve.

So ...

- asked by Jawad_Mansoor (14 votes), answered by Mr.Wizard (18 votes)

[Compute the curvature of a bent stack of paper] <http://mathematica.stackexchange.com/questions/138583/compute-the-curvature-of-a-bent-stack-of-paper>

My goal is to link the curvature of a bent stack of paper in a wind tunnel to its bending modulus B , knowing all the other physical properties. To this end, I would like to reproduce the numerical ...

- asked by yketa (12 votes), answered by xzczd (8 votes)

[WordOrientation does not work in v11?] <http://mathematica.stackexchange.com/questions/138811/wordorientation-does-not-work-in-v11>

Bug introduced in 11.0.1

It seems that WordOrientation does not work in v11. The sample code

```
input = ExampleData[{"Text", "AliceInWonderland"}];  
WordCloud[input, WordOrientation -&gt; "Random"]
```

...

- asked by Lem.ma (11 votes)

[Code request: Make "copy formatted code" bulletproof] <http://mathematica.stackexchange.com/questions/138436/code-request-make-copy-formatted-code-bulletproof>

With the GeneralUtilities'PrintDefinitions functions comes a usable code formatting engine. On this site, most of the time we share code. I believe it would be awesome to have a robust button that ...

- asked by halirutan (10 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Why round to even integers?] <http://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers>

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

`Round[{0.5, 1.5, 2.5, 3.5, 4.5}]`

gives

`{0, 2, 2, 4, 4}`

What's the ...

- asked by wxffles (61 votes), answered by Per Alexandersson (37 votes)

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (33 votes), answered by Artes (24 votes)

=====
 ===== Can you answer these?
 =====

[Plotting a 2D slice of a 3D function] <http://mathematica.stackexchange.com/questions/138808/plotting-a-2d-slice-of-a-3d-function>

I'd like to plot $(\text{Sqrt}[x] + \text{Sqrt}[y] + \text{Sqrt}[z])^2$ in a slice defined by $x+y+z=1$

I figured out similar problem 5 years ago, but it was a bit involved, ie, needing 10 lines of Mathematica code. Is there ...

- asked by Yaroslav Bulatov (2 votes)

[Export of Plot3D function completely different from the render within Mathematica] <http://mathematica.stackexchange.com/questions/138412/export-of-plot3d-function-completely-different-from-the-render-within-mathematic>

I am plotting a simple function:

```
Plot3D[-RandomReal[{0, 10}] Cos[x/3] Cos[y/3],
  {x, -, }, {y, -, },
  Axes -&gt; False,
  Boxed -&gt; False,
  BoundaryStyle -&gt; None,
  Mesh -&gt; None]
```

...

- asked by waffl (1 vote)

[CreateExecutable returns \$Failed] <http://mathematica.stackexchange.com/questions/138328/createexecutable-returns-failed>

My platform is win10 64b, Mathematica 11 and Visual Studio 2015. When I apply CreateExecutable, it always returns \$Failed. The configuration is right. Please what is the problem? Thank you.

...

- asked by tu312 (1 vote)

4.43 Tuesday, February 21, 2017

=====

Top new questions this week:

=====

[How can I adaptively simplify a curved shape?] <http://mathematica.stackexchange.com/questions/137937/how-can-i-adaptively-simplify-a-curved-shape>

For the purposes of creating a publication-quality plot marker I wish to convert a font glyph into a simplified Polygon where points are taken adaptively according to curvature of the boundary. ...

- asked by Alexey Popkov (22 votes), answered by Szabolcs (29 votes)

[Can Mathematica be used to make anamorphic distortions like these?] <http://mathematica.stackexchange.com/questions/137853/can-mathematica-be-used-to-make-anamorphic-distortions-like-these>

We have all see these sidewalk and street images that appear to be 3D based on the viewers perspective, but then wildly distort when viewed from a different perspective.

Seems to me anamorphic ...

- asked by R Hall (12 votes), answered by Simon Woods (10 votes)

[How to implement lane-change rules for Nagel Schreckenberg model] <http://mathematica.stackexchange.com/questions/138138/how-to-implement-lane-change-rules-for-nagel-schreckenberg-model>

I am trying to extend the Nagel-Schreckenberg model for traffic flow to include two lanes of traffic.

I have a function that generates information about a random initial road configuration. A road ...

- asked by jlrawden (11 votes), answered by Ali Hashmi (5 votes)

[How to make a custom NN layer in Mathematica?] <http://mathematica.stackexchange.com/questions/138230/how-to-make-a-custom-nn-layer-in-mathematica>

Is there a way to create our own custom layers for Neural Networks in Mathematica ? I suspect it should be possible, any pointers or directions on how to go about it?

I am interested in ...

- asked by Andy Stow Away (9 votes)

[How to build private function with built-in function's option] <http://mathematica.stackexchange.com/questions/138126/how-to-build-private-function-with-built-in-functions-option>

Since this code work well:

```
Needs["GeneralUtilities`"]
GeneralUtilities`BenchmarkPlot[{{SortBy[#, Identity] & , Sort}, Range,
  "IncludeFits" -&gt; True, TimeConstraint -&gt; 8]
```

I want to set ...

- asked by yode (9 votes), answered by Mr.Wizard (11 votes)

[Doing combinations of sub-sublists] <http://mathematica.stackexchange.com/questions/138178/doing-combinations-of-sub-sublists>

To create a list of all the possible combinations of a sublist. I have a list, somewhat resembling the following format:

```
{{{a1, a2}, {b1}}, {{a1, a2}, {c1, c2}}, {{a1, a2}, {c1, c2}, {d1, d2}}}
```

...

- asked by Andrew Johnson (8 votes), answered by halirutan (11 votes)

[Warning: FrontEnd crash with 'Graphics@InfiniteLine' for unknown symbolic coordinates] <http://mathematica.stackexchange.com/questions/137847/warning-frontend-crash-with-graphicsinfineteline-for-unknown-symbolic-coordi>

Bug introduced in 10.0 and persisting through 11.0.1 InfiniteLine is new in 10.0.

[CASE:3840702] From your description, I gather you are noticing an unexpected crash while trying to evaluate ...

- asked by masterxilo (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to add a vertical line to a plot] <http://mathematica.stackexchange.com/questions/3561/how-to-add-a-vertical-line-to-a-plot>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

```
f[x_] := (x^2 z)/((x^2 - y^2)^2 + 4 q^2 x^2) /. {y -> /15, z -> 1, q -> ...
```

- asked by sjdh (33 votes), answered by Ajasja (49 votes)

[Can Mathematica do symbolic linear algebra?] <http://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices,

```
Simplify[Transpose[Transpose[A].Transpose[B]]]" and Mathematica would simplify it to B
...
```

- asked by niki (42 votes), answered by helen (21 votes)

=====
 ===== Can you answer these?
 =====

[Calculate PDF of difference of Max and Min for Gaussian random variables] <http://mathematica.stackexchange.com/questions/138027/calculate-pdf-of-difference-of-max-and-min-for-gaussian-random-variables>

Although this should be a standard question I didn't find it in SE, and it was a nice exercise in Mathematica.

Let x and y be two independent Gaussian random variables with distribution $N(0, 1)$.
 ...

- asked by Dr. Wolfgang Hintze (3 votes)

[Implementing t-SNE (t-Distributed Stochastic Neighbor Embedding)] <http://mathematica.stackexchange.com/questions/137955/implementing-t-sne-t-distributed-stochastic-neighbor-embedding>

Context

Six months ago @M.R. asked about an implementation of the t-Distributed Stochastic Neighbor Embedding (t-SNE) algorithm by van der Maaten and Hinton (2008). (@M.R.'s question)

@Alexey ...

- asked by SumNeuron (3 votes)

[Is there an easy way to to collect a large number variables into a list or list of lists?] <http://mathematica.stackexchange.com/questions/138225/is-there-an-easy-way-to-to-collect-a-large-number-variables-into-a-list-or-list>

I have a large number of variables in a notebook from a data analysis routine, the results of which now need to be fed through a mathematical model and various items for visualization.

For example, ...

- asked by Joe Kissling (2 votes)

4.44 Tuesday, February 14, 2017

=====
 Top new questions this week:

=====
 [How to generate a mesh with quadrilateral elements?] <http://mathematica.stackexchange.com/questions/137479/how-to-generate-a-mesh-with-quadrilateral-elements>

I have the following code that generates a finite element mesh:

```
Needs["NDSolve`FEM`"]
order = 2;
mesh = ToElementMesh[
DiscretizeGraphics[
GraphicsComplex[{{0, 4}, {5, 4}, {5, 0}, {8, 0}, {8, ...
```

- asked by Diogo (13 votes), answered by Young (12 votes)

[Why can't I plot Log[Gamma[x]] for $x > 170$?] <http://mathematica.stackexchange.com/questions/137666/why-cant-i-plot-loggammax-for-x-170>

Bug introduced in 11.0

For some reason I can't plot Log[Gamma[x]] for values of x larger than approximately 170:

```
Plot[Log[Gamma[x]], {x, 130, 200}, PlotRange -> All]
```

It works perfectly well ...

- asked by Felix (11 votes), answered by Szabolcs (12 votes)

[Finding the number of odd quintinomial coefficients] <http://mathematica.stackexchange.com/questions/137692/finding-the-number-of-odd-quintinomial-coefficients>

I am searching for the number of odd coefficients of

$$(x^4 + x^3 + x^2 + x + 1)^n$$

for arbitrary n .

It took some hours to compute the result for $n = 12207$. There are 16333 odd ...

- asked by Jenny_mathy (10 votes), answered by Carl Woll (15 votes)

[Possible bug with RegionPlot] <http://mathematica.stackexchange.com/questions/137273/possible-bug-with-regionplot>

```
RegionPlot[ImplicitRegion[(2 x - 1)/(x - 1) &lt; 3/2, {x, y}],
  PlotRange -&gt; {{-9, 9}, {-9, 9}}]
```

Just checking whether anyone else can replicate this. Can anybody confirm such behavior and, ...

- asked by mathe (10 votes), answered by Jason B. (8 votes)

[List processing] <http://mathematica.stackexchange.com/questions/137306/list-processing>

Suppose I have a list that looks like the following (Town names and total distance to that town)

```
resupply = {
  {"Coleman", 0},
  {"Highwood House", 106},
  {"Canmore", 229},
  {"Exshaw", 245},
  ...
}
```

- asked by Tom De Vries (9 votes), answered by Kuba (19 votes)

[How to superimpose plots and graphics in the same coordinate system?] <http://mathematica.stackexchange.com/questions/137408/how-to-superimpose-plots-and-graphics-in-the-same-coordinate-system>

NB: I am aware that "plots" are graphics too, so the title would be more precisely worded if "graphics" were replaced by "non-plot graphics".

EDIT: I have edited my original example to make the ...

- asked by kjo (8 votes), answered by Bob Hanlon (5 votes)

[Unit tests for Graphics or FE boxes] <http://mathematica.stackexchange.com/questions/137541/unit-tests-for-graphics-or-fe-boxes>

Consider the following expression with bad syntax:

Graphics[foo]

How can I detect the error and retrieve the error message programmatically, so I can check for it in unit tests?

- asked by Szabolcs (7 votes), answered by rcollyer (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (47 votes), answered by Artes (38 votes)

[Why this real integral yields imaginary results?] <http://mathematica.stackexchange.com/questions/127301/why-this-real-integral-yields-imaginary-results>

Integrate[(y - y^2 + x - x^2 + 2*x*y)/(1 - x - y),{x,0,1},{y, 0, 1}]

The above integral yields $-1-4I/3$ in Mathematica. Since the integrand is real (although divergent at some points), how does ...

- asked by Chong Wang (16 votes), answered by bbgodfrey (19 votes)

=====
 ===== Can you answer these?
 =====

[How to convert 'LogTicks[0, 2][[1, 2]]' to a regular number] <http://mathematica.stackexchange.com/questions/137208/how-to-convert-logticks0-21-2-to-a-regular-number>

I want to convert the 10^i tick labels generated by LogTicks of the CustomTicks package to regular numbers. The first tick label is in element [[1,2]] of the object generated by LogTicks. FullForm ...

- asked by Felix (1 vote)

[Solving the Euler-Lagrange equation with NDSolve'ProcessEquations] <http://mathematica.stackexchange.com/questions/137292/solving-the-euler-lagrange-equation-with-ndsolveprocessequations>

I would like to compute the shortest distance between a number on pairs of points on a 2-dimensional Riemannian statistical manifold (Negative Binomial distributions manifold, equipped with the Rao's ...

- asked by C. Manté (1 vote)

[Constraining the independent variable in a control system] <http://mathematica.stackexchange.com/questions/137581/constraining-the-independent-variable-in-a-control-system>

For an analog closed loop feedback control, I can do the following to model the response of a second-order physical system with an order 1 zeros polynomial to a step disturbance. I have a proportional ...

- asked by David Ollodart (2 votes)

4.45 Tuesday, February 7, 2017

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 =====
 Top new questions this week:
 =====

[Code that generates a mandala] <http://mathematica.stackexchange.com/questions/136974/code-that-generates-a-mandala>

My little brother asked me to print original mandalas for coloring. I would like some idea on how to create them, but without color, so he can color them.

examples

- asked by zeros (31 votes), answered by Anton Antonov (48 votes)

[How to make Mathematica variables declarative instead of just-in-time?] <http://mathematica.stackexchange.com/questions/136833/how-to-make-mathematica-variables-declarative-instead-of-just-in-time>

Is there a way to have Mathematica at the notebook level
(SetOptions[EvaluationNotebook[], CellContext -> Notebook])
only uses a set of declared variables in the notebook context. Any variables ...

- asked by Edmund (27 votes), answered by rcollyer (25 votes)

[Shorthand for map at level 2] <http://mathematica.stackexchange.com/questions/136751/shorthand-for-map-at-level-2>

I love the shorthand /@. It is amazing for readability (and laziness when typing).
However, right now I find that I need Map at level 2, i.e.
Map[f, List[List[a,b],List[c,d]], {2}], a lot and I'd wish ...

- asked by Kvothe (16 votes), answered by Mr.Wizard (19 votes)

[Proteins, ProteinData, WolframAlpha] <http://mathematica.stackexchange.com/questions/136741/proteins-proteindata-wolframalpha>

Apologies in advance, this is the first I've messed with ProteinData and access through
WolframAlpha, so clearly I may not know how Mathematica and Alpha decide on what
is the 'right way' to ask ...

- asked by flip (15 votes), answered by J. M. (10 votes)

[Simplifying a reverse Fold for a Query] <http://mathematica.stackexchange.com/questions/136856/simplifying-a-reverse-fold-for-a-query>

Is there a simpler way to parametrize this tail-recursive expression to be applied as a
Query (for processing a nested Association)? The pattern is shown by example with
first 3 levels:

- asked by alancalvitti (11 votes), answered by Edmund (10 votes)

[Where is Abbott? How to make logograms from the film "Arrival"?] <http://mathematica.stackexchange.com/questions/137156/where-is-abbott-how-to-make-logograms-from-the-film-arrival>

The film Arrival showed Wolfram Language code in action analysing alien logograms. A recent blog describes some details and mentions a live-coding video by Christopher Wolfam. See also Stephen ...

- asked by KennyColnago (8 votes), answered by KennyColnago (10 votes)

[How to implement neural style transfer?] <http://mathematica.stackexchange.com/questions/136704/how-to-implement-neural-style-transfer>

In the paper A Neural Algorithm of Artistic Style, Leon A. Gatys et all. describe a process of extracting the content and style vectors from an image separately. They use this technique to generate ...

- asked by M.R. (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to add a vertical line to a plot] <http://mathematica.stackexchange.com/questions/3561/how-to-add-a-vertical-line-to-a-plot>

In the plot below I would like to add two vertical lines at $x = \frac{\pi}{15} \pm \frac{1}{20}$. How can I do that?

`f[x_] := (x^2 z)/((x^2 - y^2)^2 + 4 q^2 x^2) /. {y -> /15, z -> 1, q -> ...`

- asked by sjdh (32 votes), answered by Ajasja (48 votes)

[Calculate the 2D Fourier transform of an Image] <http://mathematica.stackexchange.com/questions/29203/calculate-the-2d-fourier-transform-of-an-image>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

- asked by user8727 (5 votes), answered by Nasser (27 votes)

=====
 ===== Can you answer these? =====

[Nonsparse sparse array crashes kernel on windows] <http://mathematica.stackexchange.com/questions/136835/nonsparse-sparse-array-crashes-kernel-on-windows>

On win 10, 64 bit, version 11.0.1, my kernel just started crashing for no reason as for as I can see. Does/should the following crash your kernel?

```
sparse = SparseArray[ArrayRules[RandomInteger[{1, ...
```

- asked by Coolwater (6 votes)

[How to visualize the vorticity of a 3D velocity field?] <http://mathematica.stackexchange.com/questions/136917/how-to-visualize-the-vorticity-of-a-3d-velocity-field>

I have a snapshot of a system with 50 particles.

The snapshot is a list of 3 coordinates and 3 velocities per each particle. Namely, $(x, y, z, \dot{x}, \dot{y}, \dot{z})$, which AKA phase space ...

- asked by 0x90 (5 votes)

[Finding line segments on the image by using ImageLines] <http://mathematica.stackexchange.com/questions/136795/finding-line-segments-on-the-image-by-using-imagelines>

There is an image from wolfram documentation

I want to find and highlight lines on the following image

I tried:

```
img = Import["http://imgur.com/NbNwYWC.png"]
```

```
lines = ImageLines[EdgeDetect[img], ...
```

- asked by vito (3 votes)

4.46 Tuesday, January 31, 2017

```
=====
Top new questions this week:
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```

[How to get a specified number of points that are nearly equally spaced in a closed rectangle] <http://mathematica.stackexchange.com/questions/136447/how-to-get-a-specified-number-of-points-that-are-nearly-equally-spaced-in-a-closed>

TriangulateMesh is almost the right tool for this problem. For example,

```
numb = 113;
region = BoundaryMeshRegion[{{0, 0}, {3, 0}, {3, 1}, {0, 1}}, Line[{1, 2, 3, 4, 1}]];
mesh = ...
```

- asked by Ted Ersek (17 votes), answered by Szabolcs (15 votes)

[Tutorial on creating publication quality documents in Mathematica?] <http://mathematica.stackexchange.com/questions/136426/tutorial-on-creating-publication-quality-documents-in-mathematica>

Are there books or tutorials that walk one through creating a professional publication quality notebook?

For example, I would like to create a two column article using an IEEE format. Is this ...

- asked by Doug Kimzey (13 votes)

[Type conversions] <http://mathematica.stackexchange.com/questions/136476/type-conversions>

I have the following list, each element of which is of type string:

```
"abc", "def", "2", "ghi", "7"
```

Is there an efficient way to arrive at:

```
"abcdef", 2, "ghi", 7
```

where adjacent alphabetic elements ...

- asked by Suite401 (12 votes), answered by Bob Hanlon (8 votes)

[Alternatives and the Flat attribute] <http://mathematica.stackexchange.com/questions/136157/alternatives-and-the-flat-attribute>

When a head has the attribute Flat then the pattern matcher is able to pick out a sublist of its arguments, even though the structure doesn't match:

```
SetAttributes[f, Flat];
f[a, b, c, d] /. f[a, b] ...
```

- asked by Martin Ender (11 votes)

[Assign names to Dataset columns] <http://mathematica.stackexchange.com/questions/136422/assign-names-to-dataset-columns>

I am constructing a dataset like so:

```
data = Dataset[AssociationThread[Keys[characterCounts], charFrequencies]]
```

which gives me a dataset that looks like this:

This is all fine, but as you can ...

- asked by damjandd (10 votes), answered by Kuba (10 votes)

[Dataset interferes with SeedRandom] <http://mathematica.stackexchange.com/questions/136339/dataset-interferes-with-seedrandom>

This seems like a pretty awful bug:

```
SeedRandom[1];
RandomInteger[10, 10]
```

Out: {1,4,0,7,0,0,8,6,0,4}

While:

```
SeedRandom[1];
Dataset[&lt;a -&gt; 1, b -&gt; 2|&gt;];
RandomInteger[10, 10]
```

Out: ...

- asked by Mohammed AlQuraishi (10 votes)

[Problem with integrating DiracDelta] <http://mathematica.stackexchange.com/questions/136214/problem-with-integrating-diracdelt>

I thought I had found a bug in Mathematica and reported it already in version 9, since it wasn't fixed in version 10 or 11 I reported it two more times but I never get any reply whatsoever so I'm ...

- asked by user3777022 (10 votes), answered by Julien Kluge (8 votes)

==== Greatest hits from previous weeks: =====

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (30 votes), answered by Artes (22 votes)

[How to create a fascinating QR code like this?] <http://mathematica.stackexchange.com/questions/120041/how-to-create-a-fascinating-qr-code-like-this>

Check the facinating QRCode in my profile page here

You can find that this QRCode is some sort of intriguing as the QRCode is a IMAGE ITSELF!!!

So my question is, how to create such a QRCode ...

- asked by Wjx (24 votes), answered by Wjx (19 votes)

=====
 ===== Can you answer these?
 =====

[How to Approximate at Non-differentiable Point (forced Series Expansion around Branch Cut)] <http://mathematica.stackexchange.com/questions/136395/how-to-approximate-at-non-differentiable-point-forced-series-expansion-around-b>

I need a numerical approximation around some functions at $x = 0^-$ from the left side, where $x = 0$ is unfortunately the right end of the domain (in the reals) so the functions are not ...

- asked by Lee David Chung Lin (3 votes)

[3D reconstruction of a 2D SEM image] <http://mathematica.stackexchange.com/questions/136284/3d-reconstruction-of-a-2d-sem-image>

I am curious if Mathematica could do reconstruction of a 2D SEM image into a 3D. It is the same what can be done by MountainsMap SEM software <http://www.digitalsurf.fr/en/mntsem.html>

Visually it ...

- asked by Viacheslav Plotnikov (4 votes)

[Help needed in Understand the following program in solving a stiff nonlinear differential equation] <http://mathematica.stackexchange.com/questions/136607/help-needed-in-understand-the-following-program-in-solving-a-stiff-nonlinear-differential>

I am trying to solve a particular Cauchy problem given by

I found from a particular paper that the solutions looks like

For the auxiliary conditions

For only specific values of a_i

I ...

- asked by kernel_panic (1 vote)

4.47 Tuesday, January 24, 2017

=====

Top new questions this week:

=====

[My Girlfriend is going to prison...Save her with Math] <http://mathematica.stackexchange.com/questions/135937/my-girlfriend-is-going-to-prison-save-her-with-math>

Salacious title, but true story.

```
dmethyl1 = {
  {0, 0},
  {.25, 1},
  {.5, 7},
  {1, 26},
  {1.5, 40},
  {2, 45},
  {2.5, 45},
  {3, 44},
  {3.5, 44},
  {4, ...}
```

- asked by Prisoners Dilema (35 votes), answered by bobthechemist (22 votes)

[How to use the iterator in Mathematica] <http://mathematica.stackexchange.com/questions/135916/how-to-use-the-iterator-in-mathematica>

I find the Mathematica has the iterator data structure. We can build some iterators like this:

Constant iterator

```
GeneralUtilities`ConstantIterator[5]
```

Key value iterator

...

- asked by yode (15 votes), answered by Michael E2 (15 votes)

[SquaresR memory leak?] <http://mathematica.stackexchange.com/questions/135781/squaresr-memory-leak>

I have tried the following code in Mathematica 11.0.1.0 on my MacBook:

```
$HistoryLength = 0;
ClearAll["Global`*"];
ClearSystemCache[];
MemoryInUse[]
```

```
AbsoluteTiming[Do[SquaresR[2, i], {i, 1000000}];]
```

...

- asked by outofmemory (12 votes), answered by Mr.Wizard (18 votes)

[SetOptions locally?] <http://mathematica.stackexchange.com/questions/136005/setoptions-locally>

Is there a way to SetOptions locally? For example, I have a Module and inside it I am doing a lot of Plots with similar options. If I do a SetOptions[Plot, ...] inside the Module, the change ...

- asked by becko (11 votes), answered by J. M. (12 votes)

[Understanding simple numerical calculation] <http://mathematica.stackexchange.com/questions/135636/understanding-simple-numerical-calculation>

I am trying to understand why `N[0.1]//FullForm` returns `0.1` (A)`. Indeed, 0.1 in base two is 0.000110011001100110011.... If I truncate this number to the first 52 digits and convert it back to base ...

- asked by anderstood (11 votes), answered by Michael E2 (18 votes)

[How to work with Date calculations?] <http://mathematica.stackexchange.com/questions/135713/how-to-work-with-date-calculations>

I have never worked using the DateObject function

But I suspect there must be a (easy) way of doing it.

I want to find out, when in the future, from which point, that the cumulative days of not ...

- asked by Chen Stats Yu (10 votes), answered by Simon Woods (12 votes)

[How to riffle matrices] <http://mathematica.stackexchange.com/questions/135848/how-to-riffle-matrices>

I have four matrices

$m = \{\{M11, M12, M13\}, \{M21, M22, M23\}, \{M31, M32, M33\}\};$

$n = \{\{N11, N12, N13\}, \{N21, N22, N23\}, \{N31, N32, N33\}\};$

$p = \{\{P11, P12, P13\}, \{P21, P22, P23\}, \{P31, P32, P33\}\};$

$q = \dots$

- asked by Kowalski (8 votes), answered by Carl Woll (11 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Is there an open source implementation of Mathematica-the-language?] <http://mathematica.stackexchange.com/questions/4454/is-there-an-open-source-implementation-of-mathematica-the-language>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

- asked by sblom (81 votes), answered by Simon (64 votes)

[Is it possible to export the equations from Mathematica to MATLAB?] <http://mathematica.stackexchange.com/questions/14035/is-it-possible-to-export-the-equations-from-mathematica-to-matlab>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

- asked by Seyhmus Güngören (27 votes), answered by R. M. (35 votes)

=====
 ===== Can you answer these?
 =====

[Gap in X-axis when using LogLinearPlot] <http://mathematica.stackexchange.com/questions/136025/gap-in-x-axis-when-using-loglinearplot>

Basically, this is the plot that comes out when I choose

Frame -> True

Due to my need of labeling the axes. Is there a way to get rid off of that annoying gap

Here is the figure

Here is the ...

- asked by Alan Turing (1 vote)

[When solving a heavy PDE Mathematica falls out: what can be done] <http://mathematica.stackexchange.com/questions/135819/when-solving-a-heavy-pde-mathematica-falls-out-what-can-be-done>

I am solving a heavy PDE. The mesh is huge, and Mma falls out after few tens of minutes solving: the cell becomes inactive, kernel (presumably) quits, all variables turn blue.

My question is, what ...

- asked by Alexei Boulbitch (3 votes)

[Exporting Cellular Automata Image Sequence] <http://mathematica.stackexchange.com/questions/136068/exporting-cellular-automata-image-sequence>

I am trying to make an animation in Adobe After Effects utilizing cellular automata. I would like to export each step (say 500 steps) as a high resolution vector image so that I can combine them as an ...

- asked by Ryan Conover (1 vote)

4.48 Tuesday, January 17, 2017

=====

Top new questions this week:

=====

[How to rotate the curve but not the axes?] <http://mathematica.stackexchange.com/questions/135376/how-to-rotate-the-curve-but-not-the-axes>

I have a such graphic:

```
data = {{0, 5}, {1.9, 7.5}, {0, 12}, {-5, 15.5}, {-1.2, 33.4}};
p=Plot[Interpolation[Reverse /@ data, x, InterpolationOrder -> 2], {x,
  0, 55}, Epilog -> {Red, ...
```

- asked by yode (11 votes), answered by kglr (11 votes)

[Function to draw densely interconnected layers in graph (e.g., neural net)] <http://mathematica.stackexchange.com/questions/135354/function-to-draw-densely-interconnected-layers-in-graph-e-g-neural-net>

I can use `Graph[]` to manually draw the shape of a very simple set of interconnected layers (for instance, a small neural network):

```
Graph[{1 -> 3, 2 -> 3, 1 -> 5, 2 -> 5, 1 -> 4, 2 ...
```

- asked by Larry OBrien (11 votes), answered by kglr (12 votes)

[An Intersection function on lists that saves intersection positions] <http://mathematica.stackexchange.com/questions/135583/an-intersection-function-on-lists-that-saves-intersection-positions>

I would like an intersection function on lists like `Intersection` that also stores the coordinates of the intersections. For instance for `a,b,c` and `b,c,e` would give something like ...

- asked by Kvothe (9 votes), answered by ciao (9 votes)

[Combining lists of lists with random structure] <http://mathematica.stackexchange.com/questions/135238/combining-lists-of-lists-with-random-structure>

I have two lists which I would like to combine. One is of a random structure, which might be:

`l1={{3, 2, 4, 2}, {2, 3}, {4, 3}, {{2, 2}}, {{3, 3}}, {3, 2}}`

where the elements in each sublist may ...

- asked by Jonathan Shock (9 votes), answered by Mr.Wizard (7 votes)

[Slicing an Association with named key span without normalizing?] <http://mathematica.stackexchange.com/questions/135092/slicing-an-association-with-named-key-span-without-normalizing>

Is there way to slice an Association with named key span?

Span currently doesn't accept named keys:

```
&lt;|"z" -&gt; 1, "x" -&gt; 2, "b" -&gt; 3, "a" -&gt; 4|&gt; // Query["x" ;; "a"]
```

- asked by alancalvitti (9 votes), answered by Mr.Wizard (11 votes)

[Finding Ramanujan's taxicab numbers] <http://mathematica.stackexchange.com/questions/135128/finding-ramanujans-taxicab-numbers>

How to find Hardy-Ramanujan Numbers by using Mathematica?

Definition: Taxicab number is defined as the smallest number that can be expressed as a sum of two positive cubes in n distinct ways. ...

- asked by vito (9 votes), answered by vito (6 votes)

[Area of surface of revolution] <http://mathematica.stackexchange.com/questions/135358/area-of-surface-of-revolution>

I am asked to rotate the curve $y = \sqrt{4 - x^2}$ from $x = -1$ to $x = 1$ about the x-axis and find the area of the surface. I was able to use RevolutionPlot3D to show the surface.

```
RevolutionPlot3D[Sqrt[4 ...
```

- asked by David (7 votes), answered by corey979 (10 votes)

==== Greatest hits from previous weeks: =====

[Entering numbers in Scientific Notation?] <http://mathematica.stackexchange.com/questions/36792/entering-numbers-in-scientific-notation>

I need to play with a lot of powers such as 10^{-3} . `1E-3` does not work for it. Is there any short form for it?

- asked by hhh (23 votes), answered by Rahul (32 votes)

[xkcd-style graphs] <http://mathematica.stackexchange.com/questions/11350/xkcd-style-graphs>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amatya (532 votes), answered by Simon Woods (385 votes)

=====
 ===== Can you answer these?
 =====

[Amelioration of a Karush-Kuhn-Tucker nice code] <http://mathematica.stackexchange.com/questions/135220/amelioration-of-a-karush-kuhn-tucker-nice-code>

In what concerns the resolution of a Karush-Kuhn-Tucker condition, this wonderful code borrowed to Parreiras (The Mathematica Journal 16 2014) which is a correction of another code by Kampas (The ...

- asked by cyrille.piatecki (4 votes)

[URLDownload aborts prematurely] <http://mathematica.stackexchange.com/questions/135355/urldownload-aborts-prematurely>

So I've been trying to automate the download and build of various large packages for hooking Mathematica into extensions but the downloads continually finish prematurely.

Edit: first example was just ...

- asked by MB1965 (2 votes)

[Simplify an integer expression involving Ceiling and Root[] of third degree polynomial] <http://mathematica.stackexchange.com/questions/135566/simplify-an-integer-expression-involving-ceiling-and-root-of-third-degree-poly>

I would like to simplify the following expression

$$\text{Ceiling}[\text{ToRadicals}[\text{Root}[90 - 6 \text{ num} + 65 \#1 + 12 \#1^2 + \#1^3 \&\text{amp};, 1]]]$$

with num an integer greater than or equal to 16. I tried using ...

- asked by Piruzzolo (1 vote)

4.49 Tuesday, January 10, 2017

=====

Top new questions this week:

=====

[Is there any possibility to implement a structure like a ProgressIndicator into NDSolve?] <http://mathematica.stackexchange.com/questions/134787/is-there-any-possibility-to-implement-a-structure-like-a-progressindicator-into>

It is already formulated in the title. NDSolve takes sometimes a considerable piece of time. It would be very practical to have some information on how long it is still to wait. So, any ideas?

To ...

- asked by Alexei Boulbitch (20 votes), answered by user21 (16 votes)

[This integral is divergent. How to use NIntegrate to see how it grows?] <http://mathematica.stackexchange.com/questions/135073/this-integral-is-divergent-how-to-use-nintegrate-to-see-how-it-grows>

I am trying to get information on the following integral:

$$\int_{\pi-0.3}^{\pi-\epsilon} \frac{1}{(3 + \cos x) \sqrt{(3 + \cos x)^2 - 4}}$$

The lower limit is somewhat arbitrary; the point is that ...

- asked by Gelasio Salazar (10 votes), answered by Michael E2 (6 votes)

[Call a Haskell DLL from Mathematica] <http://mathematica.stackexchange.com/questions/134913/call-a-haskell-dll-from-mathematica>

Looking for a way to call a Haskell DLL from Mathematica, I've stumbled on this, for GNU R:

<http://neilmitchell.blogspot.com.br/2011/10/calling-haskell-from-r.html>

It is (to me) a beautiful example ...

- asked by Rand (10 votes), answered by WReach (11 votes)

[Product of set elements not exceeding a bound] <http://mathematica.stackexchange.com/questions/134743/product-of-set-elements-not-exceeding-a-bound>

I have a set of distinct positive integers l (if you wish, you may assume it is a list ordered by size), and a bound lim . In general, l has thousands of elements, but all are at most equal to lim . I ...

- asked by rogerl (10 votes), answered by george2079 (4 votes)

[How does Mathematica solve a certain differential equation?] <http://mathematica.stackexchange.com/questions/135055/how-does-mathematica-solve-a-certain-differential-equation>

I was trying to solve a nonlinear differential equation with the following code.

```
DSolve[3*x^2/D[u[x, y], x] + 3*y^2/D[u[x, y], y] == -1, u, {x, y}]
```

And I got the following output:

```
{{u -> ...
```

- asked by usr109876787 (8 votes), answered by Michael E2 (12 votes)

[How to cross-compile LibraryLink code for multi-platform distribution] <http://mathematica.stackexchange.com/questions/135022/how-to-cross-compile-library-link-code-for-multi-platform-distribution>

I am running Mathematica on a Windows 10 machine and I would like to develop a package for public distribution. Most of the package will be Mathematica code, but some timing-critical parts should be ...

- asked by Ben Niehoff (8 votes)

[Plotting difference between two Half Normal Distributions] <http://mathematica.stackexchange.com/questions/134824/plotting-difference-between-two-half-normal-distributions>

I am new to Mathematica, and this question may reflect that.

I am trying to plot the probability density function of a random variable which equals the difference between two independent random ...

- asked by user120911 (8 votes), answered by Jim Baldwin (9 votes)

=====
 Greatest hits from previous weeks: =====

[How to create a fascinating QR code like this?] <http://mathematica.stackexchange.com/questions/120041/how-to-create-a-fascinating-qr-code-like-this>

Check the facinating QRCode in my profile page here

You can find that this QRCode is some sort of intriguing as the QRCode is a IMAGE ITSELF!!!

So my question is, how to create such a QRCode ...

- asked by Wjx (24 votes), answered by Wjx (19 votes)

[Find the 5566th digit after the decimal point of 7/101] <http://mathematica.stackexchange.com/questions/125025/find-the-5566th-digit-after-the-decimal-point-of-7-101>

I want to find the 5566th digit after the decimal point of 7/101. I input the following code into Mathematica 11:

```
Mod[IntegerPart[7/101*10^5566], 10]
```

The output is 6, which is the correct answer. ...

- asked by Wei-Cheng Liu (17 votes), answered by yarchik (19 votes)

=====
 Can you answer these?
 =====

[Inset thickness and ImageResolution] <http://mathematica.stackexchange.com/questions/134738/inset-thickness-and-imageresolution>

I have noticed that when I export something with an Inset objects,

```
pp[t_] :=
  Plot[Sin[x], {x, -10, 10},
    Epilog -&gt;
      {Inset[
        Framed[
          Text[Style[HoldForm["t=" t], ...
```

- asked by usumdelphini (4 votes)

[Find the parameter values for my matrix for it to have imaginary eigenvalues] <http://mathematica.stackexchange.com/questions/134909/find-the-parameter-values-for-my-matrix-for-it-to-have-imaginary-eigenvalues>

Say I have a matrix that depends on a parameter u . The following may be an example:

```
a = {{1, u^3 + 2, 1}, {0, 1, u}, {1/u^2, 0, 1}};
```

My real problem is 12x12 matrix with difficult parametric ...

- asked by Mirko Aveta (1 vote)

[NotebookEvaluate breaks notebook's context] <http://mathematica.stackexchange.com/questions/135025/notebookevaluate-breaks-notebooks-context>

Here is an example of a notebook with local context:

```
nb = CreateDocument[{
  ExpressionCell[Defer @ CurrentValue[EvaluationNotebook[], CellContext], "Input"],
  ExpressionCell[Defer @ $Context, ...
```

- asked by Kuba (2 votes)

4.50 Tuesday, January 3, 2017

=====

Top new questions this week:

=====

[Why should I avoid the For loop in Mathematica?] <http://mathematica.stackexchange.com/questions/134609/why-should-i-avoid-the-for-loop-in-mathematica>

Some people advise against the use of For loops in Mathematica. Why? Should I heed this advice? What is wrong with For? What should I use instead?

- asked by Szabolcs (27 votes), answered by Szabolcs (36 votes)

[Is there a style sheet that can be used to generate Stack Exchange input?] <http://mathematica.stackexchange.com/questions/134518/is-there-a-style-sheet-that-can-be-used-to-generate-stack-exchange-input>

It would be convenient if there were a style sheet that automatically indented input cells, and automatically commented output cells, so that one could generate a stack exchange response in WL, and ...

- asked by Carl Woll (24 votes), answered by Carl Woll (21 votes)

[Function to create a path made of horizontal and vertical lines between a number of points] <http://mathematica.stackexchange.com/questions/134424/function-to-create-a-path-made-of-horizontal-and-vertical-lines-between-a-number>

I would like to create a function where I can define which case I want to use to create a path.

```
p1 = {40, 48}; p2 = {50, 116}; p3 = {63, 160};
listPurple = Symbol["p" &lt;&gt; ToString[#]] &amp; /@ ...
```

- asked by Maria Regina (16 votes), answered by corey979 (15 votes)

[How to wrap a crumpled paper over a surface?] <http://mathematica.stackexchange.com/questions/134514/how-to-wrap-a-crumpled-paper-over-a-surface>

My initial question was about the making of a crumpled paper. After reading this article suggested by J.M. and little more browsing (kind of random walk you do on a Saturday) I thought about expanding ...

- asked by Sumit (8 votes)

[Would like input and output printed on same line, w/o needing extra syntax] <http://mathematica.stackexchange.com/questions/134406/would-like-input-and-output-printed-on-same-line-w-o-needing-extra-syntax>

SUMMARY

I'd like to get MMA to automatically print both input and output on the same line, in TraditionalForm, without having to add any extra syntax. Further, I'd like the output to be fully ...

- asked by theorist (8 votes), answered by Simon Rochester (4 votes)

[Issue with Cell Frames in version 11] <http://mathematica.stackexchange.com/questions/134665/issue-with-cell-frames-in-version-11>

Since upgrading to version 11, all of my notebooks now have cell frames are either missing the top or bottom part. Is anyone else experiencing this? Is there a way to fix this? Is this considered ...

- asked by Michael McCain (7 votes), answered by MB1965 (5 votes)

[How to speed up this code about a triple integral?] <http://mathematica.stackexchange.com/questions/134477/how-to-speed-up-this-code-about-a-triple-integral>

How to speed up this code? It's unbelievably slow!!! My solution with pen and paper is faster.

```
Clear[R, h];
Integrate[
  Integrate[
    Integrate[1, {z, h, Sqrt[R^2 - x^2 - y^2]}],
    Assumptions -&gt; ...
```

- asked by Mika Ike (7 votes), answered by corey979 (10 votes)

=====
 Greatest hits from previous weeks: =====

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[], r Sin[], r^2}, {r, 0, ...
```

- asked by Matthew Leingang (89 votes), answered by Heike (75 votes)

[Entering numbers in Scientific Notation?] <http://mathematica.stackexchange.com/questions/36792/entering-numbers-in-scientific-notation>

I need to play with a lot of powers such as 10^{-3} . $1E-3$ does not work for it. Is there any short form for it?

- asked by hhh (21 votes), answered by Rahul (30 votes)

=====
 Can you answer these?
 =====

[How to specify halting states when using function TuringMachine?] <http://mathematica.stackexchange.com/questions/134628/how-to-specify-halting-states-when-using-function-turingmachine>

The function TuringMachine generates a list that represents the evolution of a Turing Machine given a rule that specifies its behaviour (i.e. set of instructions).

For example, the following rule ...

- asked by Lili (4 votes)

[Can I use Mathematica for the symbolic verification of cases of a general problem?] <http://mathematica.stackexchange.com/questions/134515/can-i-use-mathematica-for-the-symbolic-verification-of-cases-of-a-general-proble>

I have never used Mathematica before, but I am contemplating using it to solve this problem for a simple case of $f(x) = C, 1 < x < 2$ and $= 0$ and $= 0$. I can easily get \hat{f} , the Fourier transform of ...

- asked by Rajesh Dachiraju (2 votes)

[Antialiasing in Plot3D doesn't work well] <http://mathematica.stackexchange.com/questions/134612/antialiasing-in-plot3d-doesnt-work-well>

My code is very simple:

```
Style[Plot3D[Cos[x + 0*y], {x, -10, 10}, {y, -2, 42}, Mesh -&gt; None],  
      Antialiasing -&gt; True]
```

There seems some ripple on the top of the figure and I doubt whether it ...

- asked by user29114 (1 vote)

CHAPTER 5

YEAR 2016

5.1 Tuesday, December 27, 2016

=====
Top new questions this week:
=====

[Partitioning a number into consecutive integers] <http://mathematica.stackexchange.com/questions/134252/partitioning-a-number-into-consecutive-integers>

Consider $n=45$; then

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45$$

$$5 + 6 + 7 + 8 + 9 + 10 = 45$$

$$7 + 8 + 9 + 10 + 11 = 45$$

$$14 + 15 + 16 = 45$$

$$22 + 23 = 45$$

Question: how to find all representations of a given positive integer n as a sum of ...
- asked by corey979 (17 votes), answered by corey979 (19 votes)

[Why is my GIF shaky?] <http://mathematica.stackexchange.com/questions/134272/why-is-my-gif-shaky>

As you can see, the circles are shaking vertically as they approaching each other. Why is that?

The code:

```
g = Table[
  Graphics[{Thickness[0.01],
            Table[{ Circle[{0 + x, 0}, r], ...
```

- asked by Jason (13 votes), answered by Sumit (10 votes)

[Can Mathematica edit large binary files in-place?] <http://mathematica.stackexchange.com/questions/133973/can-mathematica-edit-large-binary-files-in-place>

I have a very large binary data file (several hundred GB) which I would like to edit using Mathematica. The only edits required are a few isolated byte replacements no insertions or deletions. Is it ...

- asked by David Zhang (12 votes)

[Solving chess bishop problem] <http://mathematica.stackexchange.com/questions/134218/solving-chess-bishop-problem>

I have generalized the problem in this way where I have a list

```
list=Tuples[Range[8],2]
```

I want to find the largest sublist in which the addition of the two entries for any two elements of the ...

- asked by m. bubu (10 votes), answered by ubpdqn (11 votes)

[How to get such rule with a elegant method] <http://mathematica.stackexchange.com/questions/134227/how-to-get-such-rule-with-a-elegant-method>

I have two lists:

```
list={{1,2,3,5},{5,3,9,11,12},{5,9,10,16}};
list2={{7,89},{96,5},{-6,-98}};
```

This is the expected result.

```
{{1->{7,89},2->{7,89},3->{7,89},5->{7,89}},
...

```

- asked by yode (9 votes), answered by Mr.Wizard (9 votes)

[Pseudo-carrying in one line] <http://mathematica.stackexchange.com/questions/134315/pseudo-carrying-in-one-line>

Often when I'm writing OOP code using an object-manager association I find myself doing something akin to currying the arguments to some form of delegate object or head. (Building a one-argument ...

- asked by MB1965 (8 votes), answered by Bob Hanlon (8 votes)

[How to create a multi-graphics plot (i.e. the decomposition of phase plane portrait) with well-organized structure?] <http://mathematica.stackexchange.com/questions/134228/how-to-create-a-multi-graphics-plot-i-e-the-decomposition-of-phase-plane-portr>

Background

I am trying to create a three-graphics plot using the command `GraphicsGrid[]` to show the decomposition of the phase plane portrait; unfortunately, the plot created is very ugly since the ...

- asked by Liang.X (8 votes), answered by Sumit (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Finding Limits in several variables] <http://mathematica.stackexchange.com/questions/21544/finding-limits-in-several-variables>

Is there a way to find a limit of a multivariable function, like

$$\lim_{(x,y) \rightarrow (0,0)} f(x,y)$$

with Mathematica?

When f is continuous, we can use

$$\lim_{(x,y) \rightarrow (0,0)}$$

...

- asked by Dominic Michaelis (21 votes), answered by whuber (32 votes)

[Can Mathematica do symbolic linear algebra?] <http://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, Simplify[Transpose[Transpose[A].Transpose[B]]]" and Mathematica would simplify it to $B.A$? ...

- asked by niki (38 votes), answered by helen (19 votes)

=====
 ===== Can you answer these?
 =====

[Graph that shows how symbols are used in an expression] <http://mathematica.stackexchange.com/questions/134180/graph-that-shows-how-symbols-are-used-in-an-expression>

I would like to make a graph to show how symbols build up an expression. For example, the matrix multiplication

```
$$
\left(
\begin{array}{ccc}
a \ \& \ b \ \& \ c \\
d \ \& \ e \ \& \ f
\end{array}
\right)
\dots
```

- asked by ConvexMarian (4 votes)

[Question about DynamicModule] <http://mathematica.stackexchange.com/questions/134063/question-about-dynamicmodule>

I have a such custom function:

```
MyCopy := DynamicModule[{from, to},
  Print@Grid[{{FileNameSetter[Dynamic[from], "Directory"],
    Dynamic[from]}, {FileNameSetter[Dynamic[to], "Directory"],
    ...
```

- asked by yode (3 votes)

[General solution of inscribed square problem] <http://mathematica.stackexchange.com/questions/134237/general-solution-of-inscribed-square-problem>

There is my earlier question about Inscribed square problem

Now I tried to find the general solution for any curve $f(x, y) = 0$.

For instance :

$$(x^2 + y^2 - 1)^3 - x^2y^3 = 0$$

...

- asked by vito (5 votes)

5.2 Tuesday, December 20, 2016

=====

Top new questions this week:

=====

[How can I work with RawArray?] <http://mathematica.stackexchange.com/questions/133666/how-can-i-work-with-rawarray>

RawArray seems to be able to efficiently hold integer and floating point data of various sizes.

What is RawArray good for? How can we use it?

- asked by Szabolcs (19 votes), answered by Szabolcs (15 votes)

[Random points around the given curve] <http://mathematica.stackexchange.com/questions/133682/random-points-around-the-given-curve>

How to plot a random points around the following Helix curve?

```
ParametricPlot3D[{6 Cos[t], 6 Sin[t], t}, {t, -2, 4},
PlotTheme -&gt; "Detailed", PlotStyle -&gt; {Blue, Thickness[Large]},
...

```

- asked by vito (14 votes), answered by J. M. (15 votes)

[Intuition behind FoldPair and SequenceFold?] <http://mathematica.stackexchange.com/questions/133625/intuition-behind-foldpair-and-sequencefold>

In trawling through the documentation I've found the functions FoldPairList and SequenceFoldList. Examples are given of how to use FoldPairList:

Partition a list into sublists of different lengths ...

- asked by pdmclean (12 votes), answered by andre (4 votes)

[Product of two lists] <http://mathematica.stackexchange.com/questions/133723/product-of-two-lists>

Please, for the two lists:

L1 := {{a, b}, {c, d}, {e, f}}

L2 := {{g, h, i}, {j, k, q}}

I need the result

```
{{a g, a h, a i}, {c g, c h, c i}, {e g, e h, e i}},
{{b j, b k, b q}, {d j, d k, d ...
```

- asked by Ali (11 votes), answered by xzczd (13 votes)

[Is there something similar to seaborn stripplot in mathematica] <http://mathematica.stackexchange.com/questions/133634/is-there-something-similar-to-seaborn-stripplot-in-mathematica>

Is there something similar to seaborn stripplot in mathematica? The graph I am trying to make is like this:

- asked by Yordan (11 votes), answered by Brett Champion (12 votes)

[Collapsible Tree] <http://mathematica.stackexchange.com/questions/133492/collapsible-tree>

Has somebody tried to program for data visualization an interactive Collapsible Tree like shown here: <http://bl.ocks.org/mbostock/4339083>. This implements the Reingold-Tilford algorithm.

...

- asked by mrz (8 votes)

[FindDistributionParameters fails with custom distribution which cannot be evaluated symbolically] <http://mathematica.stackexchange.com/questions/133456/finddistributionparameters-fails-with-custom-distribution-which-cannot-be-evaluated>

Context

I am interested in measuring the dark energy equation of state of the universe while fitting the PDF of density in cells. This involves fitting a one parameter PDF to some data.

Following ...

- asked by chris (7 votes)

=====
Greatest hits from previous weeks: =====

[How can I draw the Olympic rings with Mathematica?] <http://mathematica.stackexchange.com/questions/8885/how-can-i-draw-the-olympic-rings-with-mathematica>

How can I draw the 5 interlocking Olympic rings with Mathematica?

(SVG version)

Edit

Hard choice, but some pretty cool answers here. I didn't have 3D answers in mind when I posted the question, ...

- asked by Mike Honeychurch (42 votes), answered by cormullion (19 votes)

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (448 votes), answered by faysou (397 votes)

=====
Can you answer these? =====

[Symbolic Weak Form] <http://mathematica.stackexchange.com/questions/133575/symbolic-weak-form>

Usually I write the weak form by hand for my FEM code, but it's a little annoying and mechanic sometimes.

So, I wonder, is there any way to generate the symbolic weak form in Mathematica? For ...

- asked by senseiwa (5 votes)

[Why is Minimize spinning?] <http://mathematica.stackexchange.com/questions/133789/why-is-minimize-spinning>

The command

```
Minimize[a^2 + b^2 + c^2 + a*b + b*c + a*c -
(a + b - c)*Sqrt[2 a*b + b*c + a*c] - (b + c - a)* Sqrt[2 b*c + b*a + a*c] -
(a + c - b)*Sqrt[2 a*c + a*b + b*c], a >= 0 && b ...
```

- asked by user64494 (4 votes)

[How to export an MXNet?] <http://mathematica.stackexchange.com/questions/133857/how-to-export-an-mxnet>

I was hoping there was some way to generate the .params and .json file needed to define an MXNet model, from a network trained using NetTrain[] in Mathematica:

I see these functions in the ...

- asked by user5601 (5 votes)

5.3 Tuesday, December 13, 2016

=====

Top new questions this week:

=====

[Query: adding additional operator changes meaning of preceding operators] <http://mathematica.stackexchange.com/questions/133124/query-adding-additional-operator-changes-meaning-of-preceding-operators>

Consider the following query:

```
Range[5] // Query[Select[EvenQ] /* Append[1], f]
```

```
(* {f[2], f[4], 1} *)
```

It selects the even numbers, applies f to them and finally appends 1 to the list. As expected, ...

- asked by WReach (15 votes), answered by WReach (15 votes)

[Why does Mathematica think this series doesn't converge?] <http://mathematica.stackexchange.com/questions/132982/why-does-mathematica-think-this-series-doesnt-converge>

Bug introduced in 10.0 and persisting through 11.0 (reported as CASE:3790525)

Here's a simple series:

```
Sum[t^k DiscreteDelta[k]/k!, {k, 0, Infinity}]
```

Mathematica says that it doesn't converge. But ...

- asked by Ruslan (13 votes), answered by Jules Lamers (9 votes)

[Joining two lists with relational operators] <http://mathematica.stackexchange.com/questions/132928/joining-two-lists-with-relational-operators>

I have two lists `liste = {x, -y, y, -z}` and `listv = {1, -2, 3, -4}`, which represent the inequities obtained evaluating `liste - listv <= 0`. How do I reassemble or join those two separate lists into ...

- asked by nanjun (13 votes), answered by Kuba (15 votes)

[What assumptions do I need to make Mathematica integrate a function?] <http://mathematica.stackexchange.com/questions/133052/what-assumptions-do-i-need-to-make-mathematica-integrate-a-function>

When I feed Mathematica the following integral:

```
Integrate[Sqrt[(A - x) (B - x)/x], {x, 0, B}]
```

it spits it back out without evaluating it. However, it can evaluate the integral

```
Integrate[Sqrt[(2 - ...
```

- asked by user45146 (11 votes), answered by Artes (12 votes)

[Do Apple Watch + Mathematica integrations still work?] <http://mathematica.stackexchange.com/questions/133358/do-apple-watch-mathematica-integrations-still-work>

I tried to follow this blog post: Instant Apps for Apple Watch, but none of the examples given worked, instead, they would simply hang on the "loading" screen.

Can anyone verify if this ...

[Mathematica script, called from Windows task scheduler, does not export graphics] <http://mathematica.stackexchange.com/questions/133075/mathematica-script-called-from-windows-task-scheduler-does-not-export-graphics>

When I run the following script from command line,

```
Needs["JLink`"];
ConnectToFrontEnd[];
resultChart = UseFrontEnd[JuliaSetPlot[0.365 - 0.37 I]];
UseFrontEnd[Export["test.png", resultChart]];
...

```

- asked by Karsten W. (2 votes)

[Is it possible to do matrix algebra symbolically?] <http://mathematica.stackexchange.com/questions/132955/is-it-possible-to-do-matrix-algebra-symbolically>

I'm reading a book that has the following theorem:

I am trying to make Mathematica perform these calculations for me. Is it possible to do it without having to declare the matrices? For ...

- asked by Oppa Hilbert Style (2 votes)

[Making graphic objects disappear interactively] <http://mathematica.stackexchange.com/questions/133256/making-graphic-objects-disappear-interactively>

I am trying to create a program where dots on a plane disappear when an object passes over them. I am using EventHandler to code the arrow keys for control of the object. I want each dot to ...

- asked by Savannah S (1 vote)

5.4 Tuesday, December 6, 2016

=====

Top new questions this week:

=====

[How to find arXiv articles] <http://mathematica.stackexchange.com/questions/132685/how-to-find-arxiv-articles>

I found at Twitter that it is possible to search for arXiv articles with Mathematica:

E.g. the following code:

```
arXiv = ServiceConnect["ArXiv"];
```

```
articles = arXiv["Search", {"Query" -> ...
```

- asked by mrz (16 votes), answered by user21 (11 votes)

[Find lane lines] <http://mathematica.stackexchange.com/questions/132443/find-lane-lines>

A crucial step in self-driving car is to detect lane lines. I'm wondering whether this can be achieved robustly using Mathematica's rich image processing tools.

For example how can I take camera ...

- asked by xslittlegrass (14 votes), answered by niki (14 votes)

[Neural Network for polynomial fit] <http://mathematica.stackexchange.com/questions/132546/neural-network-for-polynomial-fit>

I'm trying to build up a neural network with Mathematica 11.0, that should fit data which behaves like a polynomial of third order. I thought that an NN with one or two hidden layers can fit any ...

- asked by A.Zachl (12 votes), answered by niki (9 votes)

[How to make notebooks suitable for the Documentation Center?] <http://mathematica.stackexchange.com/questions/132392/how-to-make-notebooks-suitable-for-the-documentation-center>

Normally, documentation meant to be integrated into the Documentation Center is built from special source notebooks.

According to the Workbench documentation, it should also be possible to use ...

- asked by Szabolcs (12 votes), answered by jkuczm (5 votes)

[Largest palindrome from given string] <http://mathematica.stackexchange.com/questions/132834/largest-palindrome-from-given-string>

Someone recently posted a request on LinkedIn for an algorithm to find the largest palindrome from a given string.

I came up with this, which I believe does the trick, but I am wondering if there ...

- asked by Jonathan Kinlay (10 votes), answered by Kuba (10 votes)

[Why Function is not identical to '&' in autocompilation?] <http://mathematica.stackexchange.com/questions/132656/why-function-is-not-identical-to-in-autocompilation>

Here is the example, copied from here

```
square = Function[x, x^2];
square1 = #^2 &amp;;
```

the timing and unpacking status shows

```
data = RandomReal[0, 10, 10000];
```

...

- asked by matheorem (10 votes), answered by m_goldberg (4 votes)

[Analytic solution to Newtonian gravity differential equation] <http://mathematica.stackexchange.com/questions/132875/analytic-solution-to-newtonian-gravity-differential-equation>

I was told that I could obtain an analytic solution to a particle falling under the influence of Newtonian gravity by using DSolveValue.

What I am given

$G = M = m = 1$ M is a point mass at $z = 0$...

- asked by Joe (9 votes), answered by Kagaratsch (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Unit Discovery: Is this some sort of a sick joke?] <http://mathematica.stackexchange.com/questions/124745/unit-discovery-is-this-some-sort-of-a-sick-joke>

Alright, let's have some fun here. I am essentially following the documentation by Wolfram, just looking at different quantities.

```
N[UnitConvert[Quantity["earth's gravity"]]]
```

9.80665m/(s)^2

Hmm, ...

- asked by Pirx (30 votes), answered by xavier (30 votes)

[How can Mathematica be used to create images like these?] <http://mathematica.stackexchange.com/questions/118992/how-can-mathematica-be-used-to-create-images-like-these>

Here are two examples of artistic image interpolation using just black lines:

TRIANGULATION: ANGULAR CELEBRITIES DRAWN WITH A PEN Interpolation for Triangulation-represented Digital Image

The ...

- asked by R Hall (28 votes), answered by MarcoB (29 votes)

=====
 ===== Can you answer these?
 =====

[How to find a value to make function positive and real?] <http://mathematica.stackexchange.com/questions/132883/how-to-find-a-value-to-make-function-positive-and-real>

Let

$$x = (((-3 + r) r^2 + a^2 (1 + r)) \operatorname{Csc}[\])/(a (-1 + r))$$

$$y = \operatorname{Sqrt}[(a^2 (a^2 (1 + r)^2 + 2 r^2 (-3 + r^2)) + a^4 (-1 + r)^2 \operatorname{Cos}[\]^2 - ((-3 + r) r^2 + a^2 (1 + r))^2 \operatorname{Csc}[\]^2)/(a^2 (-1 + r)^2)]$$

...

- asked by MrDi (1 vote)

[Creating an automatic code feedback for class] <http://mathematica.stackexchange.com/questions/132880/creating-an-automatic-code-feedback-for-class>

I'm trying to create a server application that accepts uploaded Mathematica files (that follow a certain API), then run a few tests on modules defined within those files. This is for a course where ...

- asked by michael99man (1 vote)

[Nontrivial background removal] <http://mathematica.stackexchange.com/questions/132844/nontrivial-background-removal>

I have an image of a product on a poorly made green screen and need to segment out just the product:

The problem is that it contains a mirror, so simple color-based methods are not enough.

I tried ...

- asked by M.R. (4 votes)

5.5 Tuesday, November 29, 2016

=====

Top new questions this week:

=====

[PacletInfo.m documentation project] <http://mathematica.stackexchange.com/questions/132064/pacletinfo-m-documentation-project>

Packages can be made into paclets, which provides easy distribution and versioning. The paclet metadata is in the PacletInfo.m file. The PacletInfo settings also determine how the paclet can extend ...

- asked by Szabolcs (25 votes), answered by Szabolcs (22 votes)

[Replace custom functions, leave built in functions untouched?] <http://mathematica.stackexchange.com/questions/131938/replace-custom-functions-leave-built-in-functions-untouched>

I have three expressions $a[x, y]$, $b[x, y]$, $c[x, y]$ that act as placeholders for functions of two variables x, y . Consider the following substitution:

$a[x, y]/(b[x, y] c[x, y]) /. f_{[x1_, y1_] } :> \dots$

- asked by Kagaratsch (16 votes), answered by Mr.Wizard (18 votes)

[Why CompilationTarget -> C is slower than directly writing with C?] <http://mathematica.stackexchange.com/questions/132130/why-compilationtarget-c-is-slower-than-directly-writing-with-c>

Probably a hard question, but I think it's better to cry out loud.

I've hesitated for a while about whether I should post this in StackOverflow with a c tag or not, but finally decide to keep it ...

- asked by xzczd (15 votes), answered by Albert Retey (11 votes)

[Detecting kernel initialization] <http://mathematica.stackexchange.com/questions/132212/detecting-kernel-initialization>

Certain operations do not work during kernel initialization. Code from Kernel/init.m, the Autoload directory, or packages set to autoload may evaluate at initialization time.

Is there a way to ...

- asked by Szabolcs (12 votes), answered by Szabolcs (10 votes)

[How can I change the default file type for "Save Selection As"] <http://mathematica.stackexchange.com/questions/132224/how-can-i-change-the-default-file-type-for-save-selection-as>

When using the menu item File - Save Selection As, the default file type is PDF. Is there any way to change the default to something else, for example PNG?

- asked by Simon Woods (12 votes), answered by Mike Honeychurch (13 votes)

[How to obtain the ViewPoint] <http://mathematica.stackexchange.com/questions/132228/how-to-obtain-the-viewpoint>

Normally, I used ViewPoint in the code in Plot3D. Most of the time, I will use mouse to rotate the 3D object to get a better view point. The problem is, when I find the best view point for me, is ...

- asked by Qi Zhong (12 votes), answered by Jack LaVigne (14 votes)

[Wonky Solutions to Schrödinger Equation with Box Barrier] <http://mathematica.stackexchange.com/questions/131854/wonky-solutions-to-schr%C3%B6dinger-equation-with-box-barrier>

I'm trying to solve the Schrödinger equation using NDSolve in a case where there is a potential box barrier. The initial condition is a cosine wave, and for boundary conditions I require that the ...

- asked by Buddhapus (8 votes), answered by xzczd (4 votes)

=====
 Greatest hits from previous weeks: =====

[Can Mathematica do symbolic linear algebra?] <http://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra>

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, Simplify[Transpose[Transpose[A].Transpose[B]]]" and Mathematica would simplify it to B.A? ...

- asked by niki (35 votes), answered by helen (18 votes)

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc] <http://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations by running them through Mathematica. Expectation values and stuff like that. When I say, for example,

```
u[x_] := Sqrt[2/L] * Sin[Pi * n * x / ...
```

- asked by Matthew Brunetti (9 votes), answered by SquareOne (7 votes)

=====
 Can you answer these? =====

[Is it possible to change the text cursor's shape and color?] <http://mathematica.stackexchange.com/questions/132322/is-it-possible-to-change-the-text-cursors-shape-and-color>

I find it visually pleasant to reverse the background and foreground colors when working on a notebook; as shown below, in fact, it's almost a requirement after working long hours on the same ...

- asked by Jerome Ibanes (1 vote)

[FindClusters doesn't accept custom DistanceFunction] <http://mathematica.stackexchange.com/questions/132287/findclusters-doesnt-accept-custom-distancefunction>

I have a problem with using custom DistanceFunction in FindClusters. To make the issue as simple as possible, consider clustering odd & even numbers in the following way:

...

- asked by ahrvoje (6 votes)

[FrameLabel is Broken for ArrayPlot and MatrixPlot] <http://mathematica.stackexchange.com/questions/132008/framelabel-is-broken-for-arrayplot-and-matrixplot>

In version 11.0.1 the documentation for FrameLabel states its format is
left, right, bottom, top

However, it appears that this is not the case for MatrixPlot.

...

- asked by Edmund (5 votes)

5.6 Tuesday, November 22, 2016

=====

Top new questions this week:

=====

[Create the source image for this cool animated illusion] <http://mathematica.stackexchange.com/questions/131644/create-the-source-image-for-this-cool-animated-illusion>

Have a look at this very awesome video:

<https://www.youtube.com/watch?v=lvvcRdwNhGM>

You have a vertically discretized image, which is composed of 5 or 6 images, which are shifted by an increment, as ...

- asked by DoHe (22 votes), answered by corey979 (25 votes)

[Restarting Mathematica automatically] <http://mathematica.stackexchange.com/questions/131573/restarting-mathematica-automatically>

I run a large computation in a loop. At each cycle of the loop I produce large arrays that I save on a disk. At each cycle I would like to Quit Mathematica and then restart automatically, loading ...

- asked by Vadim (15 votes), answered by Szabolcs (14 votes)

[How to handle package dependencies?] <http://mathematica.stackexchange.com/questions/131567/how-to-handle-package-dependencies>

When an application written in C++ depends on some libraries, the libraries are usually shipped together with the application. Two applications that depend on the same library will not share the same ...

- asked by Szabolcs (11 votes), answered by Kuba (3 votes)

[How to sample many points below a curve?] <http://mathematica.stackexchange.com/questions/131755/how-to-sample-many-points-below-a-curve>

I have plotted the curve, and I wanted to take 1000 points in the shaded area uniformly. How can I make it?

```
Plot[1/ Cos[]^2, {, 0, 2 }, Filling -&gt; Bottom]
```

- asked by ZHANG Juenjie (10 votes), answered by bbgodfrey (11 votes)

[how to style multi-value interpolation function plot?] <http://mathematica.stackexchange.com/questions/131516/how-to-style-multi-value-interpolation-function-plot>

Is there a cleaner way to apply different styles to the different channels of a multi value interpolation function?

here is a 2-output interpolation function:

```
f = Interpolation[Table[ {x, N@{Sin[x], ...
```

- asked by george2079 (10 votes), answered by Michael E2 (7 votes)

[Backtesting a Probability of Default (PD) model] <http://mathematica.stackexchange.com/questions/131347/backtesting-a-probability-of-default-pd-model>

Background

PD models

Financial institutions use Probability of Default (PD) models for various purposes such as client acceptance, provisioning and regulatory capital calculation as required by the ...

- asked by Sjoerd C. de Vries (10 votes), answered by Sjoerd C. de Vries (14 votes)

[Display bug in Dataset's UnitConvert handling] <http://mathematica.stackexchange.com/questions/131332/display-bug-in-datasets-unitconvert-handling>

Bug introduced in 11.0.1 (or possibly 11.0.0)

Is this yet another annoying regression in v11 Dataset type handling? The display form seems to be a formatting bug:

The numerator and denominator of ...

- asked by alancalvitti (10 votes), answered by WReach (4 votes)

=====
Greatest hits from previous weeks: =====

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[\[Theta]], r Sin[\[Theta]], ...
```

- asked by Matthew Leingang (85 votes), answered by Heike (74 votes)

[How to create a new "person curve"?] <http://mathematica.stackexchange.com/questions/17704/how-to-create-a-new-person-curve>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter WolframAlpha["person curve"] into a Mathematica notebook, or person curve into ...

- asked by Simon (61 votes), answered by Vitaliy Kaurov (30 votes)

=====
Can you answer these? =====

[Unix-like reference to parent and root Association?] <http://mathematica.stackexchange.com/questions/131337/unix-like-reference-to-parent-and-root-association>

Is there a syntax or function to reference parent and root when querying nested Associations similar to Unix'

".." and "/", eg "cd ../../mydir". ?

Here's a typical application of the root ...

- asked by alancalvitti (3 votes)

[Strange behaviour of FullSimplify when checking an equality of SparseArray's] <http://mathematica.stackexchange.com/questions/131400/strange-behaviour-of-fullsimplify-when-checking-an-equality-of-sparsearrays>

I stumbled upon the following strange behaviour. Disclaimer: I present the simplest instance that I could find in which some behaviour occurs that I first noticed in a different, more complicated ...

- asked by Jules Lamers (1 vote)

[ListPlot PlotRange Ignored with all Missing or empty data] <http://mathematica.stackexchange.com/questions/131321/listplot-plotrange-ignored-with-all-missing-or-empty-data>

I have a function that uses ListPlot to draw a custom plot. When a data value is not applicable I pass in Missing to prevent ListPlot and its Prolog option from displaying the point the function will ...

- asked by Edmund (3 votes)

5.7 Tuesday, November 15, 2016

=====
 Top new questions this week:
 =====

[Why (and when) does pattern matching with f[__] perform MUCH more quickly than _f?] <http://mathematica.stackexchange.com/questions/130984/why-and-when-does-pattern-matching-with-f-perform-much-more-quickly-than>

Consider this expression in Mathematica 10.3 (and above) on MacOS X:

```
expr = a b c d e f g h i j k l m n o p q r s t myG[u] myF[a, b]
```

Now compare the time it takes to apply the following ...

- asked by QuantumDot (22 votes), answered by WReach (17 votes)

[Getting wrong limit with Bessel] <http://mathematica.stackexchange.com/questions/130741/getting-wrong-limit-with-bessel>

I computed a following limit (related to the asymptotic expansion of the sequence A000009 - number of partitions of n into distinct parts)

`Expand[Limit[(((BesselI[1, (Sqrt[1/24 + n] ...`

- asked by Vaclav Kotesovec (11 votes), answered by Akku14 (9 votes)

[Join lists by observing x-value] <http://mathematica.stackexchange.com/questions/130903/join-lists-by-observing-x-value>

Hi everybody I have as a small test with two datasets (normally I have 100 datasets with 4100 brackets):

`Dataset1={{20,1},{30, 1.3}, {40, 0.4}, {50, 0.9}}`

`Dataset2={{30, 1.2}, {40, 1}, {50, 0.4}, ...`

- asked by Jaccy (10 votes), answered by ubpdqn (13 votes)

[How to distribute Mathematica packages as paclets?] <http://mathematica.stackexchange.com/questions/131101/how-to-distribute-mathematica-packages-as-paclets>

Mathematica does have a nice package manager. Packages are called paclets, and they can be managed using the functions from the `PacletManager` context.

How can I package up my own packages as ...

- asked by Szabolcs (9 votes), answered by Szabolcs (7 votes)

[Does function call via @ ignore HoldFirst attribute?] <http://mathematica.stackexchange.com/questions/130889/does-function-call-via-ignore-holdfirst-attribute>

I was trying to test whether using `func[x,y]` is the same as `func[#,y]&@x`:

`SetAttributes[test, HoldFirst]`

`test[1 + 2 - 3, 5 - 5]`

`test[#, 5 - 5] &@(1 + 2 - 3)`

`test[1 + 2 - 3, 0]`

...

- asked by Ruslan (8 votes), answered by m_goldberg (9 votes)

[Graph visualization: Leave gap between vertex and endpoint of edge] <http://mathematica.stackexchange.com/questions/130821/graph-visualization-leave-gap-between-vertex-and-endpoint-of-edge>

This is a nice graph:

```
g = CycleGraph[4];
```

```
Graph[g, VertexCoordinates -&gt; {{0, 0}, {0, 1}, {1, 1}, {1, 0}},
  VertexLabels -&gt; Placed["Name", Center], VertexSize -&gt; Medium,
  EdgeShapeFunction ...
```

- asked by cyrille.piatecki (8 votes), answered by kglr (12 votes)

[Help finding the centre of a faint, incomplete circle?] <http://mathematica.stackexchange.com/questions/130787/help-finding-the-centre-of-a-faint-incomplete-circle>

so I found a program in the answers to this question that I thought was brilliant, so here it is applied to my situation: I have the image

and here's the code:

...

- asked by Mason (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How can Mathematica be used to create images like these?] <http://mathematica.stackexchange.com/questions/118992/how-can-mathematica-be-used-to-create-images-like-these>

Here are two examples of artistic image interpolation using just black lines:

TRIANGULATION: ANGULAR CELEBRITIES DRAWN WITH A PEN Interpolation for Triangulation-represented Digital Image

The ...

- asked by R Hall (28 votes), answered by MarcoB (29 votes)

[How do you make a Neural Net?] <http://mathematica.stackexchange.com/questions/123458/how-do-you-make-a-neural-net>

In the new Mathematica release (v11), NeuralNetworks is one of the new main features. However, the documentation isn't that clear on what function should be used in a Net.

The documentation on ...

- asked by JHM (22 votes), answered by Searke (24 votes)

=====
 ===== Can you answer these?
 =====

[Understanding the structure of an InterpolatingFunction] <http://mathematica.stackexchange.com/questions/131063/understanding-the-structure-of-an-interpolatingfunction>

```
FunctionInterpolation[x^2, {x, 0, 9}] // InputForm
```

returns:

```
InterpolatingFunction[0., 9., 5, 3, 0, 13, 4, 0, 0, 0, 0, Automatic, , , False, 0., 0.75, 1.5, 2.25, 3., 3.75, ...
```

- asked by anderstood (1 vote)

[Is it possible to create .stp 3D model from Graphics3D?] <http://mathematica.stackexchange.com/questions/130883/is-it-possible-to-create-stp-3d-model-from-graphics3d>

I want to create some 3D solid model by Mathematica, and then export it into stp (step) format for further finite element or finite volume analysis in Fluent/ANSYS or Abaqus.

But so far to me, it ...

- asked by user6043040 (3 votes)

[Time constrained loop unit] <http://mathematica.stackexchange.com/questions/131159/time-constrained-loop-unit>

I have a particularly difficult loop, in that it consists of two variables looping and sowing the result if a criteria is met. Overall it works for me, but some certain values for my variables take ...

- asked by Castle (2 votes)

5.8 Tuesday, November 8, 2016

=====

Top new questions this week:

=====

[For a better animation of the solution from NDSolve] <http://mathematica.stackexchange.com/questions/130502/for-a-better-animation-of-the-solution-from-ndsolve>

I obtained a numerical solution from the following code with NDSolve

```
L = 20;
tmax = 27;
\[Sigma] = 2;
myfun = First[h /. NDSolve[{D[h[x, y, t], t] +
Div[h[x, y, t]^3*Grad[Laplacian[h[x, y, t], {x, ...
```

- asked by jsxs (12 votes), answered by Nasser (14 votes)

[A puzzling result of "FullSimplify"] <http://mathematica.stackexchange.com/questions/130606/a-puzzling-result-of-fullsimplify>

When I input:

```
FullSimplify[(1 - a^2)/b^2, a^2 + b^2 == 1]
```

the result is the ideal answer 1

However if I input:

```
FullSimplify[(1 - b^2)/a^2, a^2 + b^2 == 1]
```

the result is $(1 - b^2)/a^2 \dots$

- asked by dabuyang (11 votes), answered by Bob Hanlon (7 votes)

[ImageFeatureTrack or ImageDisplacements to measure average object velocities in images] <http://mathematica.stackexchange.com/questions/130391/imagefeaturetrack-or-imagedisplacements-to-measure-average-object-velocities-in>

I have as example a set of 30 gray scale images (8bit, 568*478 pixels, they are available here: <http://tinyurl.com/zckyv9w> where bright objects on dark background move from image to image mainly ...

- asked by mrz (9 votes), answered by Simon Woods (10 votes)

[Documentation Tools: Don't put web URL in user package docs] <http://mathematica.stackexchange.com/questions/130515/documentation-tools-dont-put-web-url-in-user-package-docs>

I am exploring the Workbench documentation tools for the first time and one of the difficulties I encountered was that every generated (compiled) documentation page includes weblinks. These point to ...

- asked by Szabolcs (9 votes)

[How to make plots 'blacker'?] <http://mathematica.stackexchange.com/questions/130471/how-to-make-plots-blacker>

I need to make a contour plot for publication, but even if I set `ContourStyle->Black`, the 'black' plots and the axes are very faint. When I export the figure in svg and open it in some ...

- asked by Physicist (9 votes), answered by Michael E2 (10 votes)

[How to specify algebraic relations between objects?] <http://mathematica.stackexchange.com/questions/130258/how-to-specify-algebraic-relations-between-objects>

so I'm wanting to screw around a bit with Geometric Algebra in Mathematica. To start, I want to create some basis objects: e_1 , e_2 , e_3 and then specify the relations between them which are

- asked by Mason (9 votes), answered by march (9 votes)

[Crack it If you Can? BUT in the BEST way] <http://mathematica.stackexchange.com/questions/130566/crack-it-if-you-can-but-in-the-best-way>

From the Wolfram Community:

Hello everyone,

A little while ago I was asked to solve this "safe cracker" puzzle, a sweet example of a coffee table puzzle. The basic gist of this puzzle is that it ...

- asked by Youphyso (8 votes), answered by george2079 (4 votes)

=====
 Greatest hits from previous weeks: =====

[Writing a word with straight lines] <http://mathematica.stackexchange.com/questions/113403/writing-a-word-with-straight-lines>

Here is an interesting way to write a word: (it is from a poster for the International Museum Day 2006; I believe it even won an award at an international design competition)

by Boris Ljubicic. ...

- asked by VividD (72 votes), answered by Anton Antonov (34 votes)

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (441 votes), answered by faysou (396 votes)

=====
 Can you answer these?
 =====

[Passing boolean parameters to a .NET Method using NETLink] <http://mathematica.stackexchange.com/questions/130658/passing-boolean-parameters-to-a-net-method-using-netlink>

According to the NETLink documentation, NETLink automatically handles type conversions from Mathematica to a .NET dll. One of the issues I have is that the .NET method I want to use expects a Boolean ...

- asked by user39464 (1 vote)

[ParametricPlot3D Self Intersection] <http://mathematica.stackexchange.com/questions/130460/parametricplot3d-self-intersection>

I would like to know where my ParametricPlot3D intersects itself and to extract all intersections (points, lines, surfaces...) to animate them by changing P:

`ParametricPlot3D[{fX[u,v,P], fY[u,v,P], ...`

- asked by chkone (3 votes)

[Faster solution to combinatorial problem of two-part contractions] <http://mathematica.stackexchange.com/questions/130598/faster-solution-to-combinatorial-problem-of-two-part-contractions>

Given a list of elements I need all possible pairings of elements with a leading factor that describes the number of permutations. A (ugly but) working version would be:

```
list = {a, b, c, d};
res = ...
```

- asked by pbx (2 votes)

5.9 Tuesday, November 1, 2016

=====
 Top new questions this week:
 =====

[Huge bug involving MultinormalDistribution?] <http://mathematica.stackexchange.com/questions/129916/huge-bug-involving-multinormaldistribution>

Bug introduced in 8.0 or earlier and persisting through 11.0.1

I found a strange behavior regarding the CDF of the bivariate Normal distribution

...

- asked by fwgb (21 votes), answered by Eric Towers (19 votes)

[GeoDistance - higher spatial resolution / precision?] <http://mathematica.stackexchange.com/questions/130044/geodistance-higher-spatial-resolution-precision>

I'm having a small problem with GeoDistance.

I've chosen a target city – San Francisco – and I've computed distances from SF to five other cities. Then I draw circles around each city, with radius ...

- asked by ConvexMartian (9 votes), answered by jose (4 votes)

[How to extract the first dimension in TimeSeries?] <http://mathematica.stackexchange.com/questions/129836/how-to-extract-the-first-dimension-in-timeseries>

I want to extract the first dimension in TimeSeriesfor example:

So I use this code:

```
data = Normal@AudioLocalMeasurements[ExampleData[{"Audio", "PianoScale"}], "MFCC"];
Thread[{data[[All, 1]], ...
```

- asked by partida (9 votes), answered by kglr (6 votes)

[How to recover Pauli matrices properties in Mathematica?] <http://mathematica.stackexchange.com/questions/129799/how-to-recover-pauli-matrices-properties-in-mathematica>

I want to do a cross or dot product involving a vector of Pauli matrices $=(1,2,3)$; for example, $x=2i$ or $.=3I$.

Is there a simple way to do these operations?

- asked by user3654016 (8 votes), answered by corey979 (10 votes)

[Flatten sublists within a bigger list] <http://mathematica.stackexchange.com/questions/130011/flatten-sublists-within-a-bigger-list>

Really sorry if this question is a duplicate. I couldn't find exactly what I was looking for.

Here is a list I have:

```
{{{0. + 0.1875 I, 0. + 0.105469 I, 0. + 0.03125 I, 0. + 0.00390625 I,
  0. + ...
```

- asked by jrekier (7 votes), answered by Edmund (6 votes)

[7-dimensional cross product] <http://mathematica.stackexchange.com/questions/129863/7-dimensional-cross-product>

How to define a 7-dimensional cross product?

```
$$\begin{aligned}\mathbf{x} \times \mathbf{y} = (x_2y_4 - x_4y_2) + x_3y_7 - x_7y_3 - x_4y_5 + x_5y_4 + x_7y_5 - x_5y_7
```

- asked by corey979 (7 votes), answered by Sumit (4 votes)

[How to draw a clock-diagram?] <http://mathematica.stackexchange.com/questions/129960/how-to-draw-a-clock-diagram>

I found a clock-diagram in a paper, so I would like to draw it in Mathematica. The main trouble for me is the corresponding line segments on the circle.

I would let the data lie the outside on the ...

- asked by user123 (7 votes), answered by Feyre (7 votes)

=====
Greatest hits from previous weeks: =====

[How can Mathematica be used to create images like these?] <http://mathematica.stackexchange.com/questions/118992/how-can-mathematica-be-used-to-create-images-like-these>

Here are two examples of artistic image interpolation using just black lines:

TRIANGULATION: ANGULAR CELEBRITIES DRAWN WITH A PEN Interpolation for Triangulation-represented Digital Image

The ...

- asked by R Hall (28 votes), answered by MarcoB (29 votes)

[How to tell Mathematica that certain variables are real/imaginary, integer-valued, etc] <http://mathematica.stackexchange.com/questions/66273/how-to-tell-mathematica-that-certain-variables-are-real-imaginary-integer-value>

I'm trying to expedite some quantum mechanical calculations by running them through Mathematica. Expectation values and stuff like that. When I say, for example,

$u[x_] := \text{Sqrt}[2/L] * \text{Sin}[\text{Pi} * n * x / \dots]$

- asked by Matthew Brunetti (8 votes), answered by SquareOne (6 votes)

=====
Can you answer these? =====

[How to Inset a legend in GeoGraphics with Scaled LegendMarkerSize?] <http://mathematica.stackexchange.com/questions/130060/how-to-inset-a-legend-in-geographics-with-scaled-legendmarkersize>

I have a GeoGraphics where I am using Scaled in PointSize to include size information. I want to Inset a PointLegend that describes the sizes of the points.

Outside of GeoGraphics I can do this by ...

- asked by Edmund (2 votes)

[NumberLinePlot with Exponential] <http://mathematica.stackexchange.com/questions/129938/numberlineplot-with-exponential>

I have:

```
Clear[f, x]
f[x_] = Exp[1/x]
```

Now, the question is "where is the derivative negative?" I managed to get the Reduce command to work by adding Reals.

```
Reduce[f'[x] < 0, x, Reals]
```

Which ...

- asked by David (3 votes)

[Detect numbers on the image] <http://mathematica.stackexchange.com/questions/129821/detect-numbers-on-the-image>

How to detect numbers on the following image

I tried:

```
img=Import["http://imgur.com/TDbn7sB.png"]
```

```
set = ImagePartition[img, Scaled[{1/20, 1/5}]] // Flatten
```

then I tried Classify[] but it ...

- asked by vito (3 votes)

5.10 Tuesday, October 25, 2016

=====

Top new questions this week:

=====

[How to improve this plot?] <http://mathematica.stackexchange.com/questions/129426/how-to-improve-this-plot>

In general, the quality of Mathematica graphics is beyond praise. However, the output of Plot3D command is somewhat unexpected in the following code. Let's solve the Dirichlet problem for the ...

- asked by user64494 (11 votes), answered by Simon Woods (16 votes)

[Neural Networks: Does Mathematica (v11) experimental code support state-of-art Models?] <http://mathematica.stackexchange.com/questions/129469/neural-networks-does-mathematica-v11-experimental-code-support-state-of-art-m>

Mathematica made a big step implementing Neural Networks. I checked some examples for deep learning (ChainNet), also the related link. I see that model structures such as LaNet can be developed. ...

- asked by s.s.o (10 votes), answered by Alexey Golyshev (8 votes)

[Converting Game of Life images to lists] <http://mathematica.stackexchange.com/questions/129135/converting-game-of-life-images-to-lists>

I want to convert images of GoL configurations into binary matrices to run in Mathematica's CellularAutomaton. I know that there's a collection of GoL patterns in <http://conwaylife.com> and other ...

- asked by andandandand (10 votes), answered by C. E. (5 votes)

[JDBC-to-ODBC bridge gone. How to connect to SQL Server now in case of Windows Authentication?] <http://mathematica.stackexchange.com/questions/129160/jdbc-to-odbc-bridge-gone-how-to-connect-to-sql-server-now-in-case-of-windows-au>

Connecting to our corporate SQL servers using JDBC never worked for me, perhaps related to the Windows Authentication method that is necessary in our network. However, I found out that configuring the ...

- asked by Sjoerd C. de Vries (8 votes), answered by Sjoerd C. de Vries (6 votes)

[How to speed up calculations on big symbolic matrices?] <http://mathematica.stackexchange.com/questions/129465/how-to-speed-up-calculations-on-big-symbolic-matrices>

this is my first time posting something on a community of the StackExchange platform, so please feel free to correct me if I'm doing something wrong. :) Additionally you should probably know that I'm ...

- asked by TSwift (8 votes)

[How do I 'Join' two Structured Datasets?] <http://mathematica.stackexchange.com/questions/129116/how-do-i-join-two-structured-datasets>

Consider the following Datasets

dsCompetitions with fields "id","name","eventTypeId"

dsEventTypes with fields "id", "name"

I want to join the datasets as follows using SQL pseudocode:

SELECT ...

- asked by nilo de roock (8 votes), answered by rcollyer (7 votes)

[Why isn't Orderless an Attribute of And?] <http://mathematica.stackexchange.com/questions/129415/why-isnt-orderless-an-attribute-of-and>

In standard logic And is a commutative operator. Still, in Mathematica, And doesn't have the Orderless attribute:

Attributes[And]

(* {Flat, HoldAll, OneIdentity, Protected} *)

This may have not been ...

- asked by Soldalma (7 votes), answered by JHM (6 votes)

=====
 ===== Greatest hits from previ-
 ous weeks: =====

[Programming the fiver game] <http://mathematica.stackexchange.com/questions/120959/programming-the-fiver-game>

Obviously, even if I ask a lot of question I am, obviously, still a dummy!!!!

I want to program the fiver game. It's a very simple game played solitary on a 5×5 the rule is elementary : if ...

- asked by cyrille.piatecki (12 votes), answered by Mr.Wizard (19 votes)

[How to make an inkblot?] <http://mathematica.stackexchange.com/questions/3345/how-to-make-an-inkblot>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

RandomBlot[num_, opts___] := ...

- asked by István Zachar (83 votes), answered by Sjoerd C. de Vries (46 votes)

=====
 ===== Can you answer these?
 =====

[Counting the occurrences of entries in a dataset columnwise] <http://mathematica.stackexchange.com/questions/129459/counting-the-occurrences-of-entries-in-a-dataset-columnwise>

Consider a dataset with some rows and considerably less columns (eg something like 10x3). Assume that the contents of the dataset cells are integers from some conveniently chosen range (eg 1 through ...

- asked by user42582 (1 vote)

[List, Association, and Dataset, according to what principles to choose which one to use?] <http://mathematica.stackexchange.com/questions/129081/list-association-and-dataset-according-to-what-principles-to-choose-which-one>

List, Association and Dataset are three 'objects' that can be used to store data in MMA. So when or under what conditions for one to decide to use each of them?

- asked by Alexander Zeng (2 votes)

[How to ArrayFlatten some matrix which have repeated element] <http://mathematica.stackexchange.com/questions/129153/how-to-arrayflatten-some-matrix-which-have-repeated-element>

I have many such matrices(whose dimension are all 3*3.) like:

```
list1={{0,3,0},{4,1,2},{0,5,0}};
list2={{0,6,0},{1,2,8},{0,7,0}};
list3={{0,1,0},{9,5,7},{0,11,0}};
list4={{0,2,0},{5,7,10},{0,12,0}};
```

...

- asked by yode (3 votes)

5.11 Tuesday, October 18, 2016

=====

Top new questions this week:

=====

[Why removing a function and defining it on the same line does not work?] <http://mathematica.stackexchange.com/questions/128818/why-removing-a-function-and-defining-it-on-the-same-line-does-not-work>

Why do the two pieces of code below yield rather different results? The only difference is that in the first one the function definition is in the same line as the Remove command while in the second ...

- asked by Fernando Saldanha (17 votes), answered by dan7geo (16 votes)

[House of Santa Claus] <http://mathematica.stackexchange.com/questions/128741/house-of-santa-claus>

The house of Santa Claus is an old German drawing game for small children. You have to draw a house in one line. You must not lift your pencil while drawing.

`$\color{red}{\text{You must not repeat a ...}}$`

- asked by mrz (15 votes), answered by Dr. Wolfgang Hintze (9 votes)

[how to get cell boundaries in the image] <http://mathematica.stackexchange.com/questions/128596/how-to-get-cell-boundaries-in-the-image>

I have a microscope image of some animal tissue and wish to get the contours for all the cells that are present in the image. the cells are connected to the neighbouring cells via these contours. At ...

- asked by Ali Hashmi (10 votes), answered by corey979 (13 votes)

[Numerically solve the initial value problem for the 1-D wave equation] <http://mathematica.stackexchange.com/questions/128516/numerically-solve-the-initial-value-problem-for-the-1-d-wave-equation>

I want to solve the standard 1-dimensional wave equation $y_{xx} = y_{tt}$ using NDSolve (for $y(x, t)$) with the following conditions:

`cond1 = Piecewise[{{1 - Abs[x - 1], Abs[x - 1] < 1}, {0, Abs[x ...`

- asked by arcbloom (8 votes), answered by xzczd (7 votes)

[Dataset Processing: efficient ways to clean and merge sets for Life Sciences] <http://mathematica.stackexchange.com/questions/128519/dataset-processing-efficient-ways-to-clean-and-merge-sets-for-life-sciences>

Dataset Processing (for Life Sciences)

Note: a related, but distinct task is posted here ID Swapping: Efficient use of a reference table to convert ID values.

A common task, at least for me, ...

- asked by SumNeuron (8 votes), answered by SumNeuron (5 votes)

[Rotations of a number] <http://mathematica.stackexchange.com/questions/128666/rotations-of-a-number>

If we start with a number like 1234 and produce the following sum $1234 + 123 + 12 + 1 = 1370$.

If we are given the 1370 can I retrieve the 1234? A similar question was migrated over to the Math.SE ...

- asked by bobbym (8 votes), answered by J. M. (6 votes)

[What's wrong with the Sum function?] <http://mathematica.stackexchange.com/questions/128534/whats-wrong-with-the-sum-function>

Here are the codes:

```
f[n_]:=Sum[1,{K,0,n},{M,0,n-K},{La,0,K},{Lb,0,n-K-M},{Lc,0,M}]/Simplify
```

```
g[n_]:=Sum[1,{La,0,n},{Lb,0,n-La},{Lc,0,n-La-Lb},{K,La,n-Lb},{M,Lc,n-K-Lb}]/Simplify
```

```
f[x]/.x->5
```

...

- asked by lamberto (7 votes), answered by Bob Hanlon (3 votes)

=====
Greatest hits from previous weeks: =====

[Creating legends for plots with multiple lines?] <http://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . . }
```

If I then do `ListLinePlot[Table[{{#1,Log[b,#2]}&@@@data, {b,1,10,2}}]` I have no way to generate a legend ...

- asked by Eiyriou von Kauyf (59 votes), answered by Jens (88 votes)

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[\[Theta]], r Sin[\[Theta]], ...
```

- asked by Matthew Leingang (85 votes), answered by Heike (74 votes)

=====
 ===== Can you answer these?
 =====

[Parallelizing code, any tips?] <http://mathematica.stackexchange.com/questions/128905/parallelizing-code-any-tips>

I have access to a Linux cluster and I'm trying to use Parallelize to run the above bellow faster, but whenever I try to place Parallelize in any other parts, besides the loop, where I think it may ...

- asked by Sergio Parreiras (2 votes)

[Does Reduce have problems with greek symbols that lead to wrong results?] <http://mathematica.stackexchange.com/questions/128965/does-reduce-have-problems-with-greek-symbols-that-lead-to-wrong-results>

I call Reduce on the following simple system of inequalities

```
e = ((-4 + Sqrt[(-2 + )^2] + 3 ) Log[p] + 4 Log[])/(2 );
```

```
Reduce[e > 0 && 1 > 0 && 1 > 0 && 1 > p > 0 ...
```

- asked by klm (3 votes)

[Full screen image in slideshow?] <http://mathematica.stackexchange.com/questions/128875/full-screen-image-in-slideshow>

Is it possible to make an image fill up and entire slide in a slideshow notebook so that there are no cell brackets or any white space around it at all (when viewed in presentation mode of course)?

- asked by M.R. (1 vote)

5.12 Tuesday, October 11, 2016

=====

Top new questions this week:

=====

[How to programmatically play an Audio object?] <http://mathematica.stackexchange.com/questions/128147/how-to-programmatically-play-an-audio-object>

A Sound object can be programmatically played using EmitSound. Example:

```
snd = ExampleData[{"Sound", "AltoFlute"}];
```

```
Button["Play!", EmitSound[snd]]
```

What about an Audio object?

- asked by Szabolcs (14 votes), answered by Szabolcs (9 votes)

[TreePlot does not give a "binary-looking" tree for a binary tree] <http://mathematica.stackexchange.com/questions/128323/treeplot-does-not-give-a-binary-looking-tree-for-a-binary-tree>

I use the following code to generate a binary tree with root 1.

```
TreePlot[{1 -&gt; 2, 1 -&gt; 3, 2 -&gt; 4, 2 -&gt; 5, 3 -&gt; 6, 3 -&gt; 7, 4 -&gt; 8,
  4 -&gt; 9, 5 -&gt; 10, 5 -&gt; 11, 6 -&gt; ...
```

- asked by Tony (13 votes), answered by WReach (19 votes)

[Partition array without unpacking] <http://mathematica.stackexchange.com/questions/128133/partition-array-without-unpacking>

What is the simplest way to partition a list into equal-length sublists, allow the last sublist to be shorter of necessary, and avoid unpacking?

Partition doesn't usually unpack:

```
arr = RandomReal[1, ...
```

- asked by Szabolcs (13 votes), answered by Szabolcs (7 votes)

[Creating a simple Dock Cell that Fades In when Cursor Hover Over It] <http://mathematica.stackexchange.com/questions/128025/creating-a-simple-dock-cell-that-fades-in-when-cursor-hover-over-it>

I like to create dock cells, that enhance the look of my notebooks. Do you know of a simple way to get the functionality in iBooks shown below in the video. I want the dock cell in Mathematica to ...

- asked by Michael McCain (13 votes), answered by Karsten 7. (14 votes)

[Why are $\text{Exp}[3]$ and 2 treated differently within Complex?] <http://mathematica.stackexchange.com/questions/128211/why-are-exp3-and-2-treated-differently-within-complex>

Why doesn't the last command below split the complex number into its real and imaginary parts?

```
Complex[2,2]
(* 2 + 2 I *)
Complex[N[Exp[3]], N[Exp[3]]]
(* 20.0855 + 20.0855 I *)
...
```

- asked by Fernando Saldanha (12 votes), answered by Szabolcs (18 votes)

[KeyDrop does not respect Key in V11] <http://mathematica.stackexchange.com/questions/128171/keydrop-does-not-respect-key-in-v11>

```
KeyDrop[&lt;|a -&gt; 1|&gt;, Key[a]]
```

```
&lt;|a -&gt; 1|&gt;
```

```
KeyTake[&lt;|a -&gt; 1|&gt;, Key[a]]
```

```
&lt;||&gt;
```

closely related but not the same: Unexpected behavior of KeyTake

Are there any ...

- asked by Kuba (11 votes), answered by Xavier (5 votes)

[Strategies for creating 3D text] <http://mathematica.stackexchange.com/questions/128412/strategies-for-creating-3d-text>

I am interested in using Mathematica to create 3D text for printing. I stumbled upon this answer which works very well in a slightly modified form:

```
text3D[text_String, mult_] := ListPlot3D[
  ...
```

- asked by bobthechemist (10 votes), answered by J. M. (14 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Is it possible to export the equations from Mathematica to MATLAB?] <http://mathematica.stackexchange.com/questions/14035/is-it-possible-to-export-the-equations-from-mathematica-to-matlab>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

- asked by Seyhmus Güngören (24 votes), answered by R. M. (32 votes)

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (47 votes), answered by Artes (37 votes)

=====
 ===== Can you answer these? =====

[Help: Reclassify] <http://mathematica.stackexchange.com/questions/128194/help-reclassify>

Is it possible to improve the current ClassifierFunction with more training data without running the previous training again?

In this way i will be able to deal with very large datasets in chunks.

- asked by user13892 (5 votes)

[Pattern matching problem in version 11.01] <http://mathematica.stackexchange.com/questions/128247/pattern-matching-problem-in-version-11-01>

Consider this simple example:

```
p1 = ListPlot3D[
  Table[Sin[j^2 + i], {i, 0, Pi, Pi/5}, {j, 0, Pi, Pi/5}],
  Mesh -&gt; None, Axes -&gt; False, Boxed -&gt; False, ColorFunction -&gt; Hue];
p2 = ...
```

- asked by xslittlegrass (8 votes)

[CUDADot runs slowly and writes "CUDA Link experienced a kernel launch failure" with matrix size > 3300] <http://mathematica.stackexchange.com/questions/128124/cudadot-runs-slowly-and-writes-cudalink-experienced-a-kernel-launch-failure-wi>

I am trying to learn CUDA and start from the help examples.

It turns out that CPU calculation is much faster for

matrix sizes < 3200 than CUDA, while CUDADot gives the error for sizes > 3300. I

- asked by luu (4 votes)

5.13 Tuesday, October 4, 2016

=====

Top new questions this week:

=====

[UI performance with large image data] <http://mathematica.stackexchange.com/questions/127523/ui-performance-with-large-image-data>

Some days ago, I built a small program for some of my colleagues to analyse cell images. One minor part of the user interface was the selection of the region of interest. The images are large and need ...

- asked by halirutan (25 votes), answered by Kuba (21 votes)

[Transform sphere to an ellipse in R^2] <http://mathematica.stackexchange.com/questions/127645/transform-sphere-to-an-ellipse-in-r2>

In Lay's Linear Algebra and Its Applications textbook, he defines the matrix

$$A = \begin{bmatrix} 4 & \text{amp}; 11 & \text{amp}; 14 \\ 8 & \text{amp}; 7 & \text{amp}; -2 \end{bmatrix}$$

and claims that the transformation $T(x) = Ax \dots$

- asked by David (15 votes), answered by yarchik (17 votes)

[Did Fibonacci slow down?] <http://mathematica.stackexchange.com/questions/127876/did-fibonacci-slow-down>

For Fibonacci numbers we have a nice formula:

$$\frac{(1 + \sqrt{5})^n - (1 - \sqrt{5})^n}{2^n \sqrt{5}}$$

We can implement that in Mathematica:

`a[n_]:= ...`

- asked by Fred Simons (13 votes), answered by Szabolcs (20 votes)

[I would like to create a fractal by copying, scaling and rotating the initial element] <http://mathematica.stackexchange.com/questions/127458/i-would-like-to-create-a-fractal-by-copying-scaling-and-rotating-the-initial-el>

I want to create a fractal, which looks like this:

This is rule 150R, which can be found in NKS, page 439.

However, instead of using a cellular automaton, I want to create this fractal from a ...

- asked by Yuriy S (13 votes), answered by wxffles (13 votes)

[Mathematica + Pythonika on the Raspberry pi] <http://mathematica.stackexchange.com/questions/127802/mathematica-pythonika-on-the-raspberry-pi>

Due to the high availability of python code for the rpi, I'm trying to call python functions from Mathematica. I know that pythonika works well on OS X, but I can't compile it on the Raspberry pi.

...

- asked by elbOlita (12 votes), answered by elbOlita (13 votes)

[How to map and sum a list fast?] <http://mathematica.stackexchange.com/questions/127658/how-to-map-and-sum-a-list-fast>

The following takes a lot of memory and is slow:

```
Timing[Total[Map[#^2 & , Range[1, 10000000]]]]
```

I suspect this is because it first calculates and stores the whole list of squared numbers and ...

- asked by Yrogirg (12 votes), answered by BlacKow (19 votes)

[Implementing the BihamMiddletonLevine traffic model as CellularAutomaton] <http://mathematica.stackexchange.com/questions/127821/implementing-the-biham-middleton-levine-traffic-model-as-cellularautomaton>

In an attempt to understand how to make rules for CellularAutomaton[], I set out to try to implement the BihamMiddletonLevine traffic model.

It is a 2D, k=3 model with a 3x3 neighborhood, so the ...

- asked by HJensen (10 votes), answered by C. E. (5 votes)

=====
 ===== Greatest hits from previous weeks: =====

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by Dr. belisarius (341 votes), answered by Michael E2 (197 votes)

[How to make this beautiful animation] <http://mathematica.stackexchange.com/questions/112700/how-to-make-this-beautiful-animation>

How to make an animation of following gif in Mathematica?

Edit: The animation shown above was created by Charlie Deck in processing.

And how to make 3D analog?

I tried first few steps

line = ...

- asked by vito (47 votes), answered by C. E. (50 votes)

=====
 ===== Can you answer these?
 =====

[VectorPlot3D broken in Mathematica 11.0.1?] <http://mathematica.stackexchange.com/questions/127724/vectorplot3d-broken-in-mathematica-11-0-1>

Here is what I get when simply evaluating the example in the documentation:

This is on Win7 x64. I can see some vectors if I do something like

```
VectorPlot3D[{1, 1, 1}, {x, -1, 1}, {y, -1, 1}, {z, ...
```

- asked by Pirx (5 votes)

[Least squares approximation] <http://mathematica.stackexchange.com/question/s/127806/least-squares-approximation>

I have data points which is mydata = 0, 0, 1, 1, 2, 0;

From this data, I need to do the least squares approximation by using Bernstein polynomials to produce a set of Bezier points. Before ...

- asked by NKamaru (2 votes)

[Matching key-value pair without converting to List in KeyValueCollection] <http://mathematica.stackexchange.com/questions/127860/matching-key-value-pair-without-converting-to-list-in-keyvaluecollection>

I frequently use this method with KeyValueCollection in order to match and refer to named parts (ie, "myKey", "myValue")

EDIT: to refer to named parts in the function f without an external function ...

- asked by alancalvitti (1 vote)

5.14 Tuesday, September 27, 2016

=====

Top new questions this week:

=====

[Should I always be using Module in functions unless I explicitly want global variables?] <http://mathematica.stackexchange.com/questions/126877/should-i-always-be-using-module-in-functions-unless-i-explicitly-want-global-var>

I define functions a ton. In the past, I've mostly just defined my functions like:

```
myFunc[var1_] := (
  var2=var1^2;
  Return@var2;
)
```

And I haven't run into too much trouble. If I wanted to be really ...

- asked by YungHummma (15 votes), answered by WReach (18 votes)

[Why this real integral yields imaginary results?] <http://mathematica.stackexchange.com/questions/127301/why-this-real-integral-yields-imaginary-results>

```
Integrate[(y - y^2 + x - x^2 + 2*x*y)/(1 - x - y),{x,0,1},{y, 0, 1}]
```

The above integral yields $-1-4I/3$ in Mathematica. Since the integrand is real (although divergent at some points), how does ...

- asked by Chong Wang (12 votes), answered by bbgodfrey (12 votes)

[Would it be a good idea to use Failure and FailureQ in own code] <http://mathematica.stackexchange.com/questions/126908/would-it-be-a-good-idea-to-use-failure-and-failureq-in-own-code>

Since version 10 (at least 10.0.2 but I think 10.0.0) there is Failure and since version 10.2 there is also FailureQ. As often the documentation is somewhat vague and says "Failure is generated by ...

- asked by Albert Retey (12 votes), answered by Leonid Shifrin (9 votes)

[Display grayscale image as 3d plot] <http://mathematica.stackexchange.com/questions/127210/display-grayscale-image-as-3d-plot>

How to build 3d plot of grayscale image where x,y - pixel coordinates, z - pixel intensity?

I tried `ListPlot3D[ImageData[image]]`, but `ImageData` gives just intensities. I suppose a possible solution ...

- asked by redlynx (10 votes), answered by Kuba (11 votes)

[Automatically draw ellipsoids around groups of select points] <http://mathematica.stackexchange.com/questions/126899/automatically-draw-ellipsoids-around-groups-of-select-points>

Suppose you have a `ListPlot`, and there are certain points you wish to emphasize belong to particular group. I would like to make a function that automatically draws an ellipsoid around a select group ...

- asked by SumNeuron (10 votes), answered by Szabolcs (11 votes)

[Enter colors directly into notebook?] <http://mathematica.stackexchange.com/questions/127245/enter-colors-directly-into-notebook>

In Mathematica notebook interface, you can evaluate:

```
In[1]:= Black
```

and you get a colored squared representing the color. Then I can copy and paste this color square and use it as input, like so:

...

- asked by becko (9 votes), answered by WReach (10 votes)

[Large Dataset query fails if column contains Missing] <http://mathematica.stackexchange.com/questions/126851/large-dataset-query-fails-if-column-contains-missing>

In version 11.0 (Win 8.1 Pro) a query on a large Dataset for a column that contains Missing fails most unceremoniously.

With

```
dsTest = AssociationThread[{"a", "b"},
  If[Last@# == 10000, ...
```

- asked by Edmund (9 votes), answered by JasonB (7 votes)

=====
 Greatest hits from previous weeks: =====

[Is there an open source implementation of Mathematica-the-language?] <http://mathematica.stackexchange.com/questions/4454/is-there-an-open-source-implementation-of-mathematica-the-language>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

- asked by sblom (81 votes), answered by Simon (63 votes)

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by Dr. belisarius (341 votes), answered by Michael E2 (195 votes)

=====
 Can you answer these?
 =====

[Enable file completion by default?] <http://mathematica.stackexchange.com/questions/127203/enable-file-completion-by-default>

File completions work for Import and Get but not with << syntax as you can see:

Is there some way to enable this?

- asked by M.R. (2 votes)

[Trouble with NIntegrate strategy "DoubleExponentialOscillatory" when trying to ListPlot the results] <http://mathematica.stackexchange.com/questions/126832/trouble-with-nintegrate-strategy-doubleexponentialoscillatory-when-trying-to-1>

Can someone point me in the right direction? I've been puzzling with this for weeks...

I have a huge function (of the form $f(y)\sin(x)$) to integrate in region (0, Infinity) and I use ...

- asked by George13 (1 vote)

[Using an umlaut for a keyboard shortcut] <http://mathematica.stackexchange.com/questions/126909/using-an-umlaut-for-a-keyboard-shortcut>

How can I define a keyboard shortcut based on an umlaut like ü?

KeyEvent in KeyEventTranslations.tr doesn't seem to register umlaut based keyboard inputs. For example, after adding

...

- asked by Karsten 7. (3 votes)

5.15 Tuesday, September 20, 2016

=====

Top new questions this week:

=====

[The paradigm behind Dynamic and related functionality] <http://mathematica.stackexchange.com/questions/126471/the-paradigm-behind-dynamic-and-related-functionality>

Dynamic and the related functionality strikes me as a very unique way to build quick and dirty personal GUIs which are great for experimentation.

I suspect that this is only because of my lack of ...

- asked by Szabolcs (24 votes), answered by Leonid Shifrin (21 votes)

[Bug with iterated With: Referring to function arguments invalidates previous definitions] <http://mathematica.stackexchange.com/questions/126425/bug-with-iterated-with-referring-to-function-arguments-invalidates-previous-def>

```
G[x_] := With[{a = 0}, With[{b = x}, a]]
G @ 0
F[x_] := With[{a = 0}, {b = x}, a]
F @ 0
```

gives

```
0
a
```

I would expect both to behave exactly the same.

It seems that referring to the parameter ...

- asked by masterxilo (20 votes), answered by Kuba (20 votes)

[How to quickly find all grid cells covered by a geometric region?] <http://mathematica.stackexchange.com/questions/126346/how-to-quickly-find-all-grid-cells-covered-by-a-geometric-region>

I'm trying to compute a complete set of unit grid cells ("pixels") which a geometric region covers at least partially. I have constructed a method that produces correct results:

With[{reg = ...

- asked by kirma (14 votes), answered by george2079 (9 votes)

[Cone Trees: map a graph onto geometric shape] <http://mathematica.stackexchange.com/questions/126657/cone-trees-map-a-graph-onto-geometric-shape>

Question

Is it possible to map a Graph onto a geometric object such as a Cone?

Motivation

Visualizing large trees can be tedious, especially when limited to the confines of the printed page. One ...

- asked by SumNeuron (13 votes), answered by Szabolcs (18 votes)

[Evaluate expressions within Vim] <http://mathematica.stackexchange.com/questions/126449/evaluate-expressions-within-vim>

I want to be able to type a quick Mathematica expression, such as

$550/3$. (e.g. common math),

`Sum[i, {i, 0, n}]/TeXForm//ToString` (e.g. writing LaTeX document), or

`{55, 1, 10, 40, 9}/Total` (e.g. ...

- asked by Andrew MacFie (11 votes), answered by Andrew MacFie (11 votes)

[Non newtonian calculus] <http://mathematica.stackexchange.com/questions/126730/non-newtonian-calculus>

I would like to define a new operator say

$$\text{stard}[f[x]] = \lim_{h \rightarrow 0} \left(\frac{f[x+h]}{f[x]} \right)^{\frac{1}{h}}$$

I think it must be done with an upvalue but I do not know how to ...

- asked by cyrille.piatecki (10 votes), answered by Szabolcs (18 votes)

[How could I perform Region or Polygon Clipping in mathematica?] <http://mathematica.stackexchange.com/questions/126463/how-could-i-perform-region-or-polygon-clipping-in-mathematica>

I need to clip several regions reg: like Rectangle, Polygon, Ellipse... My goal isn't to plot the clipping but to have a representation of each new region.

I searched if there was any package or ...

- asked by A.M. (10 votes), answered by george2079 (4 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Beautiful dance of the Earth and Venus around the sun] <http://mathematica.stackexchange.com/questions/115358/beautiful-dance-of-the-earth-and-venus-around-the-sun>

I have seen very nice dynamic graphics created by users of Ma. I would like to get help whether the following graphics can be created using Ma. I was not able to create the dynamic picture here. ...

- asked by ramesh (12 votes), answered by ubpdqn (6 votes)

[How can this image (optical illusion) be created with Mathematica?] <http://mathematica.stackexchange.com/questions/24148/how-can-this-image-optical-illusion-be-created-with-mathematica>

I came across this image the other day:

and liked the sensation of it pulsing. I was wondering if anyone would know how to create something similar with Mathematica (without the Pink Floyd Dark ...

- asked by Mike Honeychurch (53 votes), answered by halirutan (66 votes)

=====
 ===== Can you answer these? =====

[Smart Subscript] <http://mathematica.stackexchange.com/questions/126736/smart-subscript>

I have a question about subscript policy. For some reason I have some variables called `Subscript[q, 1]`, `Subscript[q, 2]`, `Subscript[q, 3]` and `Subscript[q, 4]`. I know that I could have called them in ...

- asked by MaPo (1 vote)

[Difficult R installation] <http://mathematica.stackexchange.com/questions/126501/difficult-r-installation>

In RLink and R v3.0.1?, there is an update which say that the problem of the lack of compatibility between the expected version and the last version of R has been settled for version 10.0.1 of ...

- asked by cyrille.piatecki (2 votes)

[Does Overflow[] poison session for N?] <http://mathematica.stackexchange.com/questions/126337/does-overflow-poison-session-for-n>

Summary: once Mathematica hits an overflow error, `N[]` appears to break for even simple calculations.

```
RealDigits[N[Sqrt[2]-1,10^8]];
```

I was impressed that Mathematica ran the code above (first 100 ...

- asked by barrycarter (9 votes)

5.16 Tuesday, September 13, 2016

```
=====
Top new questions this week:
=====
```

[Drawing picture with straight line (Petros Vrellis's Art)] <http://mathematica.stackexchange.com/questions/126161/drawing-picture-with-straight-line-petros-vrelliss-art>

I am trying to extend Writing a word with straight lines for any picture/image. I guess the basic idea is to find a set of points in the image region and then draw random lines through them. Let's ...

- asked by Sumit (16 votes), answered by Rahul (6 votes)

[How do I count the most used functions across a set of notebooks?] <http://mathematica.stackexchange.com/questions/125960/how-do-i-count-the-most-used-functions-across-a-set-of-notebooks>

WolframLanguageData allows us to view the most used functions across several code bases like Wolfram Alpha, the documentation, or Stack Exchange. I was curious about the results for my own collection ...

- asked by Michael Hale (15 votes), answered by Michael Hale (11 votes)

[How to ReplaceAll except within specified heads] <http://mathematica.stackexchange.com/questions/125918/how-to-replaceall-except-within-specified-heads>

ReplaceAll[expr, rule] and ReplaceRepeated[expr, rule] search through all subexpressions of expr applying rule where they match.

Are there built-in Mathematica functions that do the same thing, ...

- asked by QuantumDot (15 votes), answered by JHM (15 votes)

[Is this a bug in Replace?] <http://mathematica.stackexchange.com/questions/125771/is-this-a-bug-in-replace>

Consider the following minimal examples. This one works as expected, replacing trees starting from the inside with a numerical value.

```
ClearAll[tree];  
x = tree["A", {tree["B", {1, 2}], 3}];  
Replace[x, ...
```

- asked by István Zachar (14 votes), answered by Leonid Shifrin (17 votes)

[How do I test if a variable represents a sequence?] <http://mathematica.stackexchange.com/questions/126193/how-do-i-test-if-a-variable-represents-a-sequence>

I created a variable that represents a sequence:

```
mySeq = Sequence[1, 2, 3];
```

I wanted to use that variable as an argument for some functions. But I got in trouble. For example,

FreeQ[mySeq, 1]

...

- asked by Fernando Saldanha (12 votes), answered by Edmund (8 votes)

[How to calculate the numerical integral more efficiently?] <http://mathematica.stackexchange.com/questions/126001/how-to-calculate-the-numerical-integral-more-efficiently>

Recently, I encountered the following numerical integral:

```
\begin{cases}
\mathbf{I}_1=\displaystyle \int_{\mathbf{N}'}^{\mathbf{N}'}\{\text{T}\}\{\text{d}\}t\backslash
\mathbf{I}_2=\displaystyle \int_{\mathbf{N}''}
```

- asked by Shutao Tang (11 votes), answered by Anton Antonov (8 votes)

[Optional argument that can be completely omitted?] <http://mathematica.stackexchange.com/questions/125929/optional-argument-that-can-be-completely-omitted>

I am writing a simple function return similar words.

```
Clear[similarWords]
similarWords[string_]:=Nearest[WordList[],string]
```

I want to add another argument n which is optional. When it presents, it ...

- asked by matheorem (11 votes), answered by Szabolcs (12 votes)

=====
 Greatest hits from previous weeks: =====

[Writing a word with straight lines] <http://mathematica.stackexchange.com/questions/113403/writing-a-word-with-straight-lines>

Here is an interesting way to write a word: (it is from a poster for the International Museum Day 2006; I believe it even won an award at an international design competition)

by Boris Ljubcic. ...

- asked by VividD (71 votes), answered by Anton Antonov (32 votes)

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[\[Theta]], r Sin[\[Theta]], ...
```

- asked by Matthew Leingang (85 votes), answered by Heike (73 votes)

==== Can you answer these?
====

[Finding covariation between datasets] <http://mathematica.stackexchange.com/questions/125963/finding-covariation-between-datasets>

For me this is a very fascinating problem, which I however lack the ability to deal with as well as the nomenclature to describe properly. (Please feel free to edit the title).

The conditions are the ...

- asked by MathLind (2 votes)

[Wolfram math on windows using PBSPro cluster] <http://mathematica.stackexchange.com/questions/125861/wolfram-math-on-windows-using-pbspro-cluster>

A user wishes to use math application running on our PBSPpro cluster.

Our cluster is accessible to linux users, running qsub to submit their jobs.

We have math10.4 for our cluster users, with ...

- asked by Dvory (2 votes)

[Unexpected view of a vectorial triad in a combination of a Plot3D with Graphics3D] <http://mathematica.stackexchange.com/questions/126168/unexpected-view-of-a-vectorial-triad-in-a-combination-of-a-plot3d-with-graphics3>

I am preparing an illustration for the lecture on differential geometry. In this demonstration I am illustrating the Monge parameterization of the surface:

```
R = {xx, yy, 55 + xx^2 - xx^3 - 2*yy^2}; (* ...
```

- asked by Alexei Boulbitch (2 votes)

5.17 Tuesday, September 6, 2016

=====

Top new questions this week:

=====

[The Game of Hex in Mathematica] <http://mathematica.stackexchange.com/questions/125460/the-game-of-hex-in-mathematica>

The Game of Hex is a game originally developed by Nash, and it's rules are very simple. You start out with a hexagonal tiling of some size:

There are two players. The game is in turns, and every ...

- asked by TreFox (31 votes), answered by C. E. (26 votes)

[Visualize fraction] <http://mathematica.stackexchange.com/questions/125209/visualize-fraction>

I would like to visualize a fraction like the square root of 2 with Mathematica. I found this visualization of Pi in the internet and wonder how this would be done with Mathematica. The image shows ...

- asked by Arjihad (22 votes), answered by Kuba (20 votes)

[Monad-like structures in Mathematica] <http://mathematica.stackexchange.com/questions/125537/monad-like-structures-in-mathematica>

I have been trying to code monad-like structures in Mathematica. However, I am facing some issues and I was wondering if anyone can help. I will give some background in the hope it can be useful to ...

- asked by Diogo Gomes (16 votes), answered by m_goldberg (6 votes)

[paclets updating awareness and tracking] <http://mathematica.stackexchange.com/questions/125199/paclets-updating-awareness-and-tracking>

It turns out that some silent updating may be done in our computers with paclets. See for example here. How are we aware that something has been changed ? Can we track updating/versions of paclets ?

...

- asked by andre (16 votes)

[Is it important that the front-end has a built-in parser?] <http://mathematica.stackexchange.com/questions/125180/is-it-important-that-the-front-end-has-a-built-in-parser>

The Notebook interface has a parser that seems aware of all operator-precedences, allowing us to step through the expressions (rather: Box-) hierarchy with Ctrl+.

This is extremely convenient, saving ...

- asked by masterxilo (15 votes), answered by John Fultz (18 votes)

[Package organization] <http://mathematica.stackexchange.com/questions/125579/package-organization>

When writing a Mathematica package Foo, with functions f1, f2 and f3, one can use the template:

```
BeginPackage["Foo`"];

f1::usage = "f1[] ....";

f2::usage = "f2[] ....";

Begin["`Private`"];

f1[] := ...
```

- asked by Pixor (14 votes), answered by Szabolcs (17 votes)

[ClearAll::clloc - "Cannot clear local variable x" in Block[x, ...] - why?] <http://mathematica.stackexchange.com/questions/125251/clearallclloc-cannot-clear-local-variable-x-in-blockx-why>

```
Block[{x}, ClearAll@x]
```

```
ClearAll::clloc: Cannot clear local variable x.
```

The documentation just says

An error occurs because ClearAll cannot be used with a local variable in Block:

and

...

- asked by masterxilo (14 votes)

=====
Greatest hits from previous weeks: =====

[Beautiful dance of the Earth and Venus around the sun] <http://mathematica.stackexchange.com/questions/115358/beautiful-dance-of-the-earth-and-venus-around-the-sun>

I have seen very nice dynamic graphics created by users of Ma. I would like to get help whether the following graphics can be created using Ma. I was not able to create the dynamic picture here. ...

- asked by ramesh (11 votes), answered by ubpdqn (6 votes)

[How can I draw the Olympic rings with Mathematica?] <http://mathematica.stackexchange.com/questions/8885/how-can-i-draw-the-olympic-rings-with-mathematica>

How can I draw the 5 interlocking Olympic rings with Mathematica?

(SVG version)

Edit

Hard choice, but some pretty cool answers here. I didn't have 3D answers in mind when I posted the question, ...

- asked by Mike Honeychurch (41 votes), answered by cormullion (18 votes)

=====
Can you answer these?
=====

[Creating notebooks with specific options being editable but not saveable] <http://mathematica.stackexchange.com/questions/125676/creating-notebooks-with-specific-options-being-editable-but-not-saveable>

The goal

is to create a notebook whose options, when the notebook is opened, are fixed regardless of edits done to the notebook.

E.g. `WindowSize -> Automatic` and `WindowMargins -> 30` should be ...

- asked by Kuba (8 votes)

[Possible bug with Dataset formatting for incompatible shapes and Missing] <http://mathematica.stackexchange.com/questions/125689/possible-bug-with-dataset-formatting-for-incompatible-shapes-and-missing>

Bug introduced in 11.0.0

The problem:

```
{&lt;"a" -&gt; Range[5]&gt;, &lt;"a" -&gt; Missing["KeyAbsent", "a"]&gt;} // Dataset
```

More detailed example shows that 5 is the magic number and ...

- asked by Kuba (10 votes)

[TensorContract applied twice] <http://mathematica.stackexchange.com/questions/125588/tensorcontract-applied-twice>

I have a very simple question about TensorContract command: I'm declaring

```
$Assumptions = {T \[Element] Arrays[{4, 4, 4, 4}], a \[Element] Arrays[{4, 4}], b \[Element] Arrays[{4, 4}]}
```

so T is a ...

- asked by MaPo (3 votes)

5.18 Tuesday, August 30, 2016

=====

Top new questions this week:

=====

[How to make a Spherical Cow?] <http://mathematica.stackexchange.com/questions/125043/how-to-make-a-spherical-cow>

Being a theoretical physicist, I always have a great respect for Spherical Cow. So I thought about making one myself. I am not sure how can I create (something considered to be the simplest!) this ...

- asked by Sumit (29 votes), answered by andre (41 votes)

[Unit Discovery: Is this some sort of a sick joke?] <http://mathematica.stackexchange.com/questions/124745/unit-discovery-is-this-some-sort-of-a-sick-joke>

Alright, let's have some fun here. I am essentially following the documentation by Wolfram, just looking at different quantities.

`N[UnitConvert[Quantity["earth's gravity"]]]`

9.80665m/(s)²

Hmm, ...

- asked by Pirx (26 votes), answered by Xavier (27 votes)

[Remove noise from data] <http://mathematica.stackexchange.com/questions/124928/remove-noise-from-data>

Hi, as you can see above I have some experimental data which has a large offset and shows clear noise fluctuations around the tendency of the curve. I wanted to ask if someone could suggest me a ...

- asked by Filipe (23 votes), answered by niki (22 votes)

[Q&A Mathematica v.11 Neural Networks: A comprehensive look at Layers, Net Functions, and pioneering into this [[experimental]] code] <http://mathematica.stackexchange.com/questions/124977/qa-mathematica-v-11-neural-networks-a-comprehensive-look-at-layers-net-functi>

Motivation

As Mathematica v.11 was released earlier this month with a host of new [[experimental]] functions and a limited number of examples on curated data that do not cover all layers, options, ...

- asked by SumNeuron (20 votes), answered by Sebastian (12 votes)

[Custom OpenerView with lazy evaluation] <http://mathematica.stackexchange.com/questions/124892/custom-openerview-with-lazy-evaluation>

OpenerView can be nested to create a hierarchical structure such as this:

One great aspect is that it remembers which lists are open and which are closed even after the parent has been closed and ...

- asked by C. E. (16 votes), answered by C. E. (7 votes)

[RNN in Mathematica?] <http://mathematica.stackexchange.com/questions/124988/rnn-in-mathematica>

Recurrent neural network is an important part of machine learning and its improved version: LSTM network is widely applied, but Mathematica seemingly is in lack of these two features and in my ...

- asked by Wjx (15 votes), answered by Taliesin Beynon (19 votes)

[Pentagonal spiral in Mathematica] <http://mathematica.stackexchange.com/questions/125007/pentagonal-spiral-in-mathematica>

I would like to plot an image of what I call a pentagonal spiral with Mathematica. A sample image of what I'd like to obtain is this (sorry for low-quality):

My initial idea was to get some kind of ...

- asked by bharb (14 votes), answered by Wjx (11 votes)

==== Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (44 votes), answered by Artes (37 votes)

[How to make this beautiful animation] <http://mathematica.stackexchange.com/questions/112700/how-to-make-this-beautiful-animation>

How to make an animation of following gif in Mathematica?

Edit: The animation shown above was created by Charlie Deck in processing.

And how to make 3D analog?

I tried first few steps

line = ...

- asked by vito (45 votes), answered by C. E. (48 votes)

==== Can you answer these? =====

[WolframScript never exits (v11 only)] <http://mathematica.stackexchange.com/questions/124667/wolframscript-never-exits-v11-only>

after updating to version 11, I came across a problem with the execution of package files via bash.

The WolframScript program runs the entire code, but frequently it does not exit properly and as a ...

- asked by fabio.hipolito (5 votes)

[Representing inequalities with proper boundaries] <http://mathematica.stackexchange.com/questions/124747/representing-inequalities-with-proper-boundaries>

I have a very simple problem: given an inequality, I'd like to represent it in a regional plot marking the boundary differently depending whether it belongs to the region or not. For example I'd like ...

- asked by Geon (3 votes)

[StringTemplate performance issue] <http://mathematica.stackexchange.com/questions/125087/stringtemplate-performance-issue>

StringTemplate introduced in version 10 is very convenient in constructing formatted data. However, it seems to have a huge performance issue.

Consider this example:

```
data = RandomInteger[1, 100, ...
```

- asked by xslittlegrass (5 votes)

5.19 Tuesday, August 23, 2016

=====

Top new questions this week:

=====

[GeoPosition coordinates from Shape file (.SHP) with unknown Datum] <http://mathematica.stackexchange.com/questions/124121/geoposition-coordinates-from-shape-file-shp-with-unknown-datum>

The City of Amsterdam supports an Open Data policy. Much information can be retrieved at the level of boroughs (stadsdelen). Unfortunately, GeoGraphics does not provide outlines of these smaller ...

- asked by Romke Bontekoe (12 votes), answered by JasonB (8 votes)

[Detecting collisions in FEM] <http://mathematica.stackexchange.com/questions/124324/detecting-collisions-in-fem>

Say I want to study the deformation of a pitchfork when you have it fixed on the bottom and push one side.

```
&lt;&lt; NDSolve[FEM'
=
  RegionDifference[Cuboid[{0, -5}, {1, 0}],
  Cuboid[{0.45, ...
```

- asked by tsuresuregusa (12 votes)

[Discovering crosswords] <http://mathematica.stackexchange.com/questions/124552/discovering-crosswords>

I am trying to create a code that can identify the following terms: MATHEMATICA, STACK, EXCHANGE and USERS.

```
list1={"M","S","T","A","S","I","S","X","X","T","R","X"};
list2={"A ","T ","H ","X ","R ","X ...
```

- asked by Leandro Maciel de Carvalho (11 votes), answered by C. E. (15 votes)

[29 Differential equations hang/not solved in version 11 compared to 10.4, looking for cause] <http://mathematica.stackexchange.com/questions/124573/29-differential-equations-hang-not-solved-in-version-11-compared-to-10-4-lookin>

I run Kamke differential equations in version 11 and compared the result to version 10.4. Found 29 differential equations that are no longer solved in version 11. Actually v11 hangs on these, eating ...

- asked by Nasser (11 votes)

[Using predefined expressions as free variables in a pure function] <http://mathematica.stackexchange.com/questions/124530/using-predefined-expressions-as-free-variables-in-a-pure-function>

I want to have a function value of an expression where some variables are solutions to some set of equations, with some values of parameters. I had an idea to use pure functions for that.

However, ...

- asked by Picek (10 votes), answered by Alexey Popkov (4 votes)

[How to delete unnecessary resistances in a resistance network] <http://mathematica.stackexchange.com/questions/124475/how-to-delete-unnecessary-resistances-in-a-resistance-network>

I'm still dealing with resistance network processing and got one problem left: how to delete unnecessary resistances?

Background

Let's assume we are junior high students and know nothing about ...

- asked by Wjx (10 votes), answered by Sascha (5 votes)

[Object detection in a low contrast image] <http://mathematica.stackexchange.com/questions/124060/object-detection-in-a-low-contrast-image>

I have a small dark object in the upper left corner of an image.

How can I separate it from the noisy rest and determine its IntensityCentroid?

The problem is that the objects intensity is not ...

- asked by mrz (10 votes), answered by Svyatoslav Korneev (12 votes)

=====
 Greatest hits from previous weeks: =====

[Make a beautiful Moiré effect] <http://mathematica.stackexchange.com/questions/112998/make-a-beautiful-moir%C3%A9-effect>

How do I make the following Moiré pattern?

I tried:

```
A = Plot[Table[n, {n, 1, 30}], {x, 0, 31},
GridLines -&gt; {Table[n, {n, 1, 30}], None},
GridLinesStyle -&gt; AbsoluteThickness[1.2], ...
```

- asked by vito (23 votes), answered by gpap (34 votes)

[Beautiful dance of the Earth and Venus around the sun] <http://mathematica.stackexchange.com/questions/115358/beautiful-dance-of-the-earth-and-venus-around-the-sun>

I have seen very nice dynamic graphics created by users of Ma. I would like to get help whether the following graphics can be created using Ma. I was not able to create the dynamic picture here. ...

- asked by ramesh (11 votes), answered by ubpdqn (6 votes)

=====
 ===== Can you answer these?
 =====

[CapForm bugged in V11?] <http://mathematica.stackexchange.com/questions/124591/capform-bugged-in-v11>

It appears on my system (OSX 10.10.5) that CapForm isn't behaving itself in V11. Initially I thought it was a problem with the combination of CapForm and VertexColors but it seems even weirder than ...

- asked by Quantum_Oli (6 votes)

[Linear tangent steering law and orbital insertion altitude] <http://mathematica.stackexchange.com/questions/124489/linear-tangent-steering-law-and-orbital-insertion-altitude>

I've been trying to figure out how to build a rocket launch simulation that allows the user to specify the desired altitude at which a payload will be inserted into a stable circular orbit, but have ...

- asked by AlexR (2 votes)

[What is a "generic case"?] <http://mathematica.stackexchange.com/questions/124347/what-is-a-generic-case>

Introduction

With this question I am coming back to a long-standing issue I have with Mma's concept of a "generically correct" result. The basic idea seems to be, vaguely, that if a result is true in ...

- asked by Pirx (6 votes)

5.20 Tuesday, August 16, 2016

=====

Top new questions this week:

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[Can Mathematica put these puzzle pieces together?] <http://mathematica.stackexchange.com/questions/123993/can-mathematica-put-these-puzzle-pieces-together>

I have five DXF files with various geometric figures.

Are squares with a different geometric shape in each DXF file...

Four DXF files have a square with a different geometric shape on one side ...

- asked by Leandro Maciel de Carvalho (17 votes), answered by kirma (11 votes)

[How to monitor the process of Neural Network Learning] <http://mathematica.stackexchange.com/questions/123684/how-to-monitor-the-process-of-neural-network-learning>

Main Problem

I'm exploring the neural network in v11 and I would like to monitor the training progress in my own way instead of Mathematica's default way. So my question is, how to do this ...

- asked by Wjx (17 votes), answered by Taliesin Beynon (13 votes)

[Changes to Coefficient function in v10.2] <http://mathematica.stackexchange.com/questions/123565/changes-to-coefficient-function-in-v10-2>

In the version Mathematica 10.4, I am very surprised that the core function Coefficient has changed, e.g.,

`Coefficient[3 x x + 8 y y - 24 x y, 2 x y]`

0

In previous versions (e.g. v9.0.1, ...

- asked by Orders (17 votes)

[Unexpected behaviour from Table[]] <http://mathematica.stackexchange.com/questions/124046/unexpected-behaviour-from-table>

The following code in Mathematica 11:

```
iList = {i, -10, 10, 2};  
Table[i, iList]
```

produces this result:

```
{i, i, i, i}
```

Where in version 10 (and presumably earlier versions) it produced an error:

...

- asked by Bruce Crawford (16 votes), answered by Szabolcs (15 votes)

[Can Mathematica act like a web server?] <http://mathematica.stackexchange.com/questions/123805/can-mathematica-act-like-a-web-server>

I have a Mathematica program that modifies images that I would like to make available for other people to use through the web. The input is only one parameter. So, for example, I could run it as a ...

- asked by Tyler Durden (16 votes)

[How to generate all possible orderless partitions of a list according to another list?] <http://mathematica.stackexchange.com/questions/123835/how-to-generate-a-ll-possible-orderless-partitions-of-a-list-according-to-another>

This question is hard to describe in plain text. So I will post an example and a working code (brute force) to illustrate.

For example I have a list: {1, 2, 3, 4, 5} and a partition list {2, 2, 1}. I ...

- asked by happy fish (15 votes), answered by Mr.Wizard (11 votes)

[RandomPoint crashes kernel] <http://mathematica.stackexchange.com/questions/123735/randompoint-crashes-kernel>

Bug introduced in Version 11.0

Reported as CASE:3686963, 12 Aug 2016

I attempted to determine whether the problem with RandomPoint identified in my answer to question 89384 had been fixed in

...

- asked by bbgodfrey (12 votes), answered by ilian (6 votes)

=====
Greatest hits from previous weeks: =====

[How to Plot an Infinite Series] <http://mathematica.stackexchange.com/question/14083/how-to-plot-an-infinite-series>

I want to sketch the graphs of

$$u(t, x) = \frac{1}{2} + \sum_{n \geq 1} \frac{1}{n\pi} ((-1)^n - 1) e^{-n^2 t} \sin(nx)$$

for $t = 0, 0.01, 0.1, 0.5, 1, 10$ on the same axes.

For $t = 0$, I input

Plot[{1/2 + ...

- asked by Vladimir (2 votes), answered by chris (9 votes)

[How to make this beautiful animation] <http://mathematica.stackexchange.com/questions/112700/how-to-make-this-beautiful-animation>

How to make an animation of following gif in Mathematica?

Edit: The animation shown above was created by Charlie Deck in processing.

And how to make 3D analog?

I tried first few steps

line = ...

- asked by vito (45 votes), answered by C. E. (48 votes)

=====
Can you answer these? =====

[Holidays output] <http://mathematica.stackexchange.com/questions/123763/holidays-output>

I wanted to print out the holidays in Germany in 2016:

```
DayRange[DateObject[{2016, 1, 1}],
DateObject[{2016, 12, 31}], "Holiday",
HolidayCalendar -&gt; {"Germany", "Bavaria"}]
```

The result list ...

- asked by mrz (2 votes)

[How to crawl some website needed username and password] <http://mathematica.stackexchange.com/questions/123771/how-to-crawl-some-website-needed-username-and-password>

In version 11,if we want to crawl public website like wiki,we can do it like this:

```
URLRead["https://en.wikipedia.org/wiki/Wiki", "Body"]
```

But I don't know how to crawl some website needed ...

- asked by yode (4 votes)

[NFourierTransform of an interpolating function] <http://mathematica.stackexchange.com/questions/123800/nfouriertransform-of-an-interpolating-function>

I have an interpolating function called rs22 - a solution from NDSolve - which is defined from 0 to about 1 ms. rs22 is a function that reaches a non-zero equilibrium value. (only shown here up to ...

- asked by Shiki (3 votes)

5.21 Tuesday, August 9, 2016

=====
Top new questions this week:
=====

[PostScript-like drawing in Mathematica?] <http://mathematica.stackexchange.com/questions/123289/postscript-like-drawing-in-mathematica>

To illustrate by example, construct an equilateral triangle in PostScript:

```
0 0 moveto          %moveto origin
6 0 lineto          %construct first line segment
6 0 translate      %translate ...
```

- asked by Alan (14 votes), answered by WReach (21 votes)

[Efficiently exchange elements between two lists] <http://mathematica.stackexchange.com/questions/123221/efficiently-exchange-elements-between-two-lists>

I have two lists with equal length, and I want to exchange the elements on every even positions. For example,

```
{{1, 2, 3, 4, 5}, {6, 7, 8, 9, 10}}
```

will return

```
{{1, 7, 3, 9, 5}, {6, 2, 8, 4, 10}}
```

...

- asked by happy fish (13 votes), answered by Kuba (12 votes)

[Finite element simulation of Airy waves] <http://mathematica.stackexchange.com/questions/122063/finite-element-simulation-of-airy-waves>

I am attempting to solve for waves on a water surface starting with a two dimensional solution. The equations are that the water must satisfy Laplace's equation everywhere with a time dependent ...

- asked by Hugh (13 votes), answered by user21 (10 votes)

[How do you make a Neural Net?] <http://mathematica.stackexchange.com/questions/123458/how-do-you-make-a-neural-net>

In the new Mathematica release (v11), NeuralNetworks is one of the new main features. However, the documentation isn't that clear on what function should be used in a Net.

The documentation on ...

- asked by JHM (12 votes), answered by Searke (13 votes)

[How to plot data by counties?] <http://mathematica.stackexchange.com/questions/123324/how-to-plot-data-by-counties>

I'd like to plot county data as in this D3 example:

Is there a way to do this with GeoGraphics, or at least to get path polygons per county and then plot them with different colors?

The first ...

- asked by M.R. (11 votes), answered by C. E. (9 votes)

[Why are delayed definitions in scoping functions NOT documented?] <http://mathematica.stackexchange.com/questions/122061/why-are-delayed-definitions-in-scoping-functions-not-documented>

As outlined here, `:=` may be used in scoping constructs like `With` to give delayed definitions, but this is undocumented.

This has been in the language since at least Mathematica 4.0. It is very ...

- asked by Mr.Wizard (11 votes)

[Shading under a curve with dots]<http://mathematica.stackexchange.com/questions/123422/shading-under-a-curve-with-dots>

I plotted the function $y = x^2$ using the `Plot` command

```
Plot[x^2, {x, -5, 5}]
```

I need to shade the area under the curve using a pattern (dots pattern), not using a solid color or a hue. Is it possible? ...

- asked by James (10 votes), answered by JasonB (14 votes)

=====
Greatest hits from previous weeks: =====

[General strategies to write big code in Mathematica?] <http://mathematica.stackexchange.com/questions/109888/general-strategies-to-write-big-code-in-mathematica>

I think after six months of exposure to Mathematica and the Wolfram Language I am fairly OK with writing short codes and snippets. However, what are some general strategies to use in order to write ...

- asked by Ali Hashmi (94 votes), answered by Leonid Shifrin (75 votes)

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (430 votes), answered by faysou (388 votes)

=====
 ===== Can you answer these?
 =====

[Can I use Mathematica as a constraint solver?] <http://mathematica.stackexchange.com/questions/123487/can-i-use-mathematica-as-a-constraint-solver>

I have been using SMT solvers for program analysis. Basically the idea is to translate x86 assembly code to SMT formulas and use the solver for automatic input test generation. There is a Microsoft ...

- asked by Edgar (1 vote)

[Why is this function slower after a simple change?] <http://mathematica.stackexchange.com/questions/122109/why-is-this-function-slower-after-a-simple-change>

I have a function that calculates the rank of a restricted growth string defined like so,

```
rankKRGs[{}] = 0;
rankKRGs[string_] :=
  With[{n = Length@string, k = Max@string + 1, alone = ...
```

- asked by Jordy Dickinson (3 votes)

[Is there an efficient way to monitor the progress of a task remotely?] <http://mathematica.stackexchange.com/questions/123181/is-there-an-efficient-way-to-monitor-the-progress-of-a-task-remotely>

Recently, I've been running Mathematica packages on a remote cluster using SSH (using, e.g. the command

```
nohup nice math -noprompt -run "&lt;&lt;myPackage.m" &gt; myOutput &amp;
```

so that the output ...

- asked by Nikhil Anand (2 votes)

5.22 Tuesday, August 2, 2016

=====

Top new questions this week:

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[How can I detect locations of Go (aka Baduk, Weiqi) stones on a board?] <http://mathematica.stackexchange.com/questions/121835/how-can-i-detect-locations-of-go-aka-baduk-weiqi-stones-on-a-board>

The Goal

There are a couple apps that score a Go board from a photo. I was wondering if something like that would be possible with Mathematica. The key step is to detect the positions of the stones ...

- asked by Mark S. (19 votes), answered by halirutan (2 votes)

[What are all the "magic" Symbols in the Mathematica language?] <http://mathematica.stackexchange.com/questions/121981/what-are-all-the-magic-symbols-in-the-mathematica-language>

Leonid Shifrin once wrote (excerpted):

(Unevaluated) is one of a very few "magic symbols", along with Sequence and Evaluate - these are deeply wired into the system and can not be easily ...

- asked by Mr.Wizard (16 votes), answered by Mr.Wizard (9 votes)

[What has changed in pattern matching functions with the Orderless attribute?] <http://mathematica.stackexchange.com/questions/121564/what-has-changed-in-pattern-matching-functions-with-the-orderless-attribute>

In making an attempt to answer this question, we ran into a version-dependent pattern-matching issue. An extended discussion in the comments transpired, and some inconsistencies arose. Consider the ...

- asked by march (16 votes)

[Converting a Sierpinski tetrahedron to a Graph] <http://mathematica.stackexchange.com/questions/121553/converting-a-sierpinski-tetrahedron-to-a-graph>

I need a representation of a 3D Sierpinski gasket as a graph to perform some simulations on. The 2D version is included in `GraphData[]`, but the 3D one is nowhere to be found, so I was wondering if ...

- asked by FEARxxx (13 votes), answered by J. M. (2 votes)

[Working with `DynamicModule`: `SetDelayed` + `OwnValues`] <http://mathematica.stackexchange.com/questions/121584/working-with-dynamicmodule-setdelayed-ownvalues>

Shortly, definitions in form of e.g. `x:= RandomReal[]` have to be avoided inside `DynamicModule[{x}, ...]`. Why?, this Prints immediately:

```
DynamicModule[{x}, x := Print[1]; {}]
```

It hit us hard in the ...

- asked by Kuba (12 votes), answered by Kuba (13 votes)

[How to speed up pattern matching] <http://mathematica.stackexchange.com/questions/121911/how-to-speed-up-pattern-matching>

Main Problem

Mr.Wizard posed this question when discussing another problem.

I reproduce the main part of Mr.Wizard's problem here:

```
MatchQ[{1, 2, 3, 4, 5}, {x_?((Echo[##]; False) &), y_}]
```

On ...

- asked by Wjx (11 votes), answered by Michael E2 (5 votes)

[How to efficiently implement k-FN (k-Furthest Neighbors)?] <http://mathematica.stackexchange.com/questions/121541/how-to-efficiently-implement-k-fn-k-furthest-neighbors>

I'd like to pick k points from a set of points in n-dimensions that are approximately "maximally apart" (sum of pairwise distances is almost maxed). What is an efficient way to do this in MMA? Using ...

- asked by M.R. (10 votes), answered by C. Woods (2 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Writing a word with straight lines] <http://mathematica.stackexchange.com/questions/113403/writing-a-word-with-straight-lines>

Here is an interesting way to write a word: (it is from a poster for the International Museum Day 2006; I believe it even won an award at an international design competition)

by Boris Ljubcic. ...

- asked by VividD (70 votes), answered by Anton Antonov (32 votes)

[Make a beautiful Moiré effect] <http://mathematica.stackexchange.com/question/s/112998/make-a-beautiful-moir%c3%a9-effect>

How do I make the following Moiré pattern?

I tried:

```
A = Plot[Table[n, {n, 1, 30}], {x, 0, 31},
GridLines -&gt; {Table[n, {n, 1, 30}], None},
GridLinesStyle -&gt; AbsoluteThickness[1.2], ...
```

- asked by vito (23 votes), answered by gpap (34 votes)

==== Can you answer these?
====

[Looking for a package for finite mappings] <http://mathematica.stackexchange.com/questions/121776/looking-for-a-package-for-finite-mappings>

I am looking for a package for dealing with "mappings" $f: A \rightarrow B$ where A and B are finite subsets of the set of all possible (inert) expressions.

I need operations like:

Computing $f(a)$...

- asked by masterxilo (3 votes)

[Using Palettes in Mathematica Online] <http://mathematica.stackexchange.com/questions/121935/using-palettes-in-mathematica-online>

my student is using the online version of Mathematica for my class; it appears to not have a palette feature for typing formatted input? This was kind of shocking to me; why wouldn't there be a ...

- asked by Jake Mirra (1 vote)

[Derivation of an interpolation function with multiple arguments] <http://mathematica.stackexchange.com/questions/121599/derivation-of-an-interpolation-function-with-multiple-arguments>

I have the following interpolation function:

```
f[x_,a_,b_] := 70 s[a,b][[1,1,2]][x]
```

where $s[a,b]$ is the solution of a differential equation.

```
s[a_, b_] := NDSolve[{
  H2[x] == Rx[x]^2 + G[x, a, b],
  ...
```

- asked by Maria (2 votes)

5.23 Tuesday, July 26, 2016

=====

Top new questions this week:

=====

[Generate a certain colorful triangle] <http://mathematica.stackexchange.com/questions/121353/generate-a-certain-colorful-triangle>

I want to get a colorful triangle like this:

I hope to get a triangle with any number of layers. This is my current method. Actually, I'm not very content with these graph theory functions, since ...

- asked by yode (13 votes), answered by Mr.Wizard (7 votes)

[Bad interaction between Join and ListPlot (or Plot)] <http://mathematica.stackexchange.com/questions/121289/bad-interaction-between-join-and-listplot-or-plot>

When you write this code:

```
tab = {{1, 1}}; tab = Join[tab, {{2,2}}];
```

you expect to get the following table:

```
{{1, 1}, {2, 2}}
```

but, if you write the following code instead:

```
tab = {{1, 1}}; tab = ...
```

- asked by Francisco (11 votes), answered by C. E. (8 votes)

[Handwriting recognition with Mathematica] <http://mathematica.stackexchange.com/questions/121051/handwriting-recognition-with-mathematica>

I am trying to teach Mathematica to read my handwriting. Since I don't want to ruin my reputation by showing my own handwriting, I am going to use a font called blackjack.

Lets say this is a ...

- asked by Sumit (11 votes)

[Can one effectively edit a Front End Resource that is already loaded?] <http://mathematica.stackexchange.com/questions/121059/can-one-effectively-edit-a-front-end-resource-that-is-already-loaded>

A number of special definitions are loaded from .tr files on Front End initialization and are accessible via FrontEndResource. These are used among other things for various menus and toolbars, e.g.:

- asked by Mr.Wizard (11 votes)

[Bug with Compile and Log2?] <http://mathematica.stackexchange.com/questions/121336/bug-with-compile-and-log2>

It seems that Log2 in Compile gives numerical errors (CompiledFunction::cfn) if the input is not a power of 2.

For instance:

```
test1 = Compile[{{in, _Integer}}, Log2[in]];
test1[3]
```

gives an error ...

- asked by JHM (10 votes), answered by Michael E2 (4 votes)

[What is the effect of giving ColorFunctionScaling a numerical argument?] <http://mathematica.stackexchange.com/questions/121231/what-is-the-effect-of-giving-colorfunctionscaling-a-numerical-argument>

(by making a mistake) I realised that ColorFunctionScaling can take a list of numerical arguments rather than just booleans. The following is true for ContourPlot and DensityPlot but not Plot3D and ...

- asked by gpap (10 votes), answered by Mr.Wizard (4 votes)

[Reproducing the xkcd "Self-Description" comic] <http://mathematica.stackexchange.com/questions/121160/reproducing-the-xkcd-self-description-comic>

Trying to brush up on my programming, I wanted to see if I can reproduce at least the first two panels of the following comic in Mathematica:

I have some code for trying to reproduce the first ...

- asked by Mayumi It (10 votes), answered by Alexey Popkov (7 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Exporting graphics to PDF - huge file] <http://mathematica.stackexchange.com/questions/1542/exporting-graphics-to-pdf-huge-file>

I want to draw some basic surfaces, export them to PDF and include them in a LaTeX file. I create a simple 3D graphics object, for instance with

```
ParametricPlot3D[{r Cos[\[Theta]], r Sin[\[Theta]], ...
```

- asked by Matthew Leingang (84 votes), answered by Heike (71 votes)

[Calculate the 2D Fourier transform of an Image] <http://mathematica.stackexchange.com/questions/29203/calculate-the-2d-fourier-transform-of-an-image>

I am new to Mathematica, and using version 8.0.

I would like to calculate the 2D Fourier Transform of an Image with Mathematica and plot the magnitude and phase spectrum, as well as reconstruct the ...

- asked by user8727 (2 votes), answered by Nasser (22 votes)

5.24 Tuesday, July 19, 2016

=====

Top new questions this week:

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[How can I better mimic the graphics at earth.nullschool.net?] <http://mathematica.stackexchange.com/questions/120842/how-can-i-better-mimic-the-graphics-at-earth-nullschool-net>

I'd like to be able to better mimic the graphics at earth.nullschool.net using Mathematica and I'm looking for suggestions for either improving my code or getting directed to some other approach.

...

- asked by Jim Baldwin (14 votes), answered by Simon Woods (15 votes)

[how to permute list of number 1,2,3,...,n, while preserve the order of first m terms as well as the last n-m terms?] <http://mathematica.stackexchange.com/questions/120690/how-to-permute-list-of-number-1-2-3-n-while-preserve-the-order-of-first-m-terms>

For example, starting from 1,2,3,4, I want to generate all permutations like 1,3,2,4,1,3,4,2,3,4,1,2 which preserve the order of e.g. first two terms 1,2 and the order of e.g. last two terms

...

- asked by user41614 (12 votes), answered by Kuba (8 votes)

[Create a polynomial of a given degree] <http://mathematica.stackexchange.com/questions/120841/create-a-polynomial-of-a-given-degree>

In Mathematica, how can I create a polynomial function in given variables of a given degree with unknown coefficients?

That is, I am looking for a function `Poly[vars, degree]` that generates, for ...

- asked by Posch79 (11 votes), answered by march (6 votes)

[Fractal basins of attraction in a Magnetic Pendulum] <http://mathematica.stackexchange.com/questions/120946/fractal-basins-of-attraction-in-a-magnetic-pendulum>

I am trying to write a Mathematica program that realizes a graphical approximation of the basins of attraction in a Magnetic pendulum subject to friction and gravity, in which the three magnets are ...

- asked by bharb (10 votes), answered by C. E. (9 votes)

[Draw half empty rectangle] <http://mathematica.stackexchange.com/questions/120781/draw-half-empty-rectangle>

How can I draw an half or a third filled rectangle? I want to make one rectangle frame with a unity width and then filled it according to a value between 0 and 1.

- asked by Miguel (9 votes), answered by Feyre (9 votes)

[How to access "Choose Color Scheme" Programmatically] <http://mathematica.stackexchange.com/questions/120999/how-to-access-choose-color-scheme-programmatically>

I am designing an App and I want to use the "Choose Color Scheme" tools inside Button.

I am looking to have this tool in popup window when the Button is clicked but I can't find the command to get ...

- asked by Algoi (8 votes), answered by Karsten 7. (9 votes)

[Programming the fiver game] <http://mathematica.stackexchange.com/questions/120959/programming-the-fiver-game>

Obviously, even if I ask a lot of question I am, obviously, still a dummy!!!!

I want to program the fiver game. It's a very simple game played solitary on a 5×5 the rule is elementary : if ...

- asked by cyrille.piatecki (8 votes), answered by Mr.Wizard (15 votes)

==== Greatest hits from previous weeks: =====

[Creating 3D dice] <http://mathematica.stackexchange.com/questions/110295/creating-3d-dice>

How to create an image of a 3D die from the 2D images?

There is an example in the Documentation Center

I tried

but it doesn't work.

- asked by vito (13 votes), answered by Martin Ender (21 votes)

[xkcd-style graphs] <http://mathematica.stackexchange.com/questions/11350/xkcd-style-graphs>

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amatya (518 votes), answered by Simon Woods (371 votes)

=====
 ===== Can you answer these?
 =====

[How to increase the image resolution of a map?] <http://mathematica.stackexchange.com/questions/120572/how-to-increase-the-image-resolution-of-a-map>

I'd like to obtain higher-resolution geographic maps retrieved from Wolfram geo server, since the standard resolution seems poor.

I tried to increase the "TileSize" parameter, like this:

...

- asked by Fred (2 votes)

[Hidden Markov Model: emissions probabilities dependent on observable parameter] <http://mathematica.stackexchange.com/questions/120700/hidden-markov-model-emissions-probabilities-dependent-on-observable-parameter>

I need to fit an HMM where the emission probabilities (ep) are discrete and dependent on a known variable quantity. E.g.:

Imagine a daily time series of binary emissions ("1" or "2"). I suppose an ...

- asked by CupiDio (1 vote)

[Why are there these jagged "shards" in my RegionPlot3D?] [http://mathematica.stackexchange.com/questions/120712/why-are-these-jagged-shards-in-my-regionplot3d](http://mathematica.stackexchange.com/questions/120712/why-are-there-these-jagged-shards-in-my-regionplot3d)

I'm creating a region out of two component regions. Before anyone suggests it (because a lot of similar questions are about it), I don't think the problem is increasing PlotPoints. I've increased it ...

- asked by YungHummma (1 vote)

5.25 Tuesday, July 12, 2016

=====

Top new questions this week:

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[How to extract the list of all matrices from a Block Diagonal Matrix?] <http://mathematica.stackexchange.com/questions/120433/how-to-extract-the-list-of-all-matrices-from-a-block-diagonal-matrix>

I am working on a function to do the opposite operation of How to form a block-diagonal Matrix from a list of matrices?

Here is my current algorithm: For i starting at 1, scan the elements of index ...

- asked by happy fish (11 votes), answered by yode (6 votes)

[Collect all inputs from Documentation Center] <http://mathematica.stackexchange.com/questions/120334/collect-all-inputs-from-documentation-center>

Is it possible to collect all inputs programmatically from every function in the Documentation Center in a list and wrap them in a HoldComplete?

My case: With some fundamental functions modified, I ...

- asked by happy fish (9 votes), answered by Edmund (12 votes)

[How to avoid procedural loops in this example?] <http://mathematica.stackexchange.com/questions/120533/how-to-avoid-procedural-loops-in-this-example>

I want to iterate over a list, and return the index as long as I found the first element satisfying my condition. Written in a for loop:

```
f[x_] := 2x
```

```
For[i=1, i<=10, i++,
  If[f[i]==10, Return[i]]
]
```

...

- asked by Nick (8 votes), answered by Gerli (5 votes)

[Why does this LibraryLink function crash?] <http://mathematica.stackexchange.com/questions/120384/why-does-this-librarylink-function-crash>

Recently, I have rewritten pure Wolfram Language implementation CAGDBSplineSurface[] with C. Below is main LibraryLink code:

LibraryLink Code

```
#include "WolframLibrary.h"
```

```
...
```

- asked by Shutao TANG (8 votes), answered by happy fish (11 votes)

[How can I combine a list of Line[]'s into one continuous Line?] <http://mathematica.stackexchange.com/questions/120285/how-can-i-combine-a-list-of-lines-into-one-continuous-line>

I have a huge list of Lines. Take this one as an example:

```
linelist1 = {Line[{{0.15042300130733277',
    0.09918669845167598'}, {0.15124668865085406',
    0.09522452324491057' }]}],
    ...
```

- asked by YungHummma (8 votes), answered by Michael E2 (12 votes)

[NIntegrate appears to give incorrect results] <http://mathematica.stackexchange.com/questions/120118/nintegrate-appears-to-give-incorrect-results>

I am trying to specify a bivariate probability density function in Mathematica. As a check, I would like to confirm that it integrates to one. Here is the function:

```
f[x1_, x2_, u1_, u2_, v11_, v22_, ...
```

- asked by Miguel (8 votes), answered by Anton Antonov (11 votes)

[Which fonts are supported in Wolfram Cloud?] <http://mathematica.stackexchange.com/questions/120102/which-fonts-are-supported-in-wolfram-cloud>

I recently suggested creating dynamic community ads with Wolfram Cloud. @C.E. made a proof of concept ad to show that it works well.

Fonts are an important part of graphics design. It is useful to ...

- asked by Szabolcs (8 votes), answered by Szabolcs (5 votes)

=====
Greatest hits from previous weeks: =====

[What is the best Mathematica tutorial for young people?] <http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people>

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (44 votes), answered by Vitaliy Kaurov (23 votes)

[Mathematica Minecraft] <http://mathematica.stackexchange.com/questions/19669/mathematica-minecraft>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

- asked by faleichik (140 votes), answered by faleichik (192 votes)

=====
Can you answer these? =====

[integrate giving wrong result] <http://mathematica.stackexchange.com/questions/120495/integrate-giving-wrong-result>

A question with the same title has been asked many times, but I can't find the solution of my problem in their answers. The integral I am trying to calculate is

`Integrate[Sin[q]^2 / Sinh[q]^2, {q, ...`

- asked by Felix (7 votes)

[Why FinancialDerivative fails for the Spread case?] <http://mathematica.stackexchange.com/questions/120277/why-financialderivative-fails-for-the-spread-case>

According to the documentation center for FinancialDerivative in version 10.4, when there are multi assets, we still may use FinancialDerivative with the corresponding correlation matrix to find the ...

- asked by M.J.2 (2 votes)

[What does the GraphLayout -> "SpectralEmbedding" option do (mean) when displaying a graph?] <http://mathematica.stackexchange.com/questions/120139/what-does-the-graphlayout-spectralembedding-option-do-mean-when-displayin>

I have some relational data represented as a graph. As such some of the relational properties can be recognized. When I use the GraphLayout -> "SpectralEmbedding" option a very nice and sharply ...

- asked by Phillip Dukes (5 votes)

5.26 Tuesday, July 5, 2016

=====

Top new questions this week:

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[Which Object-oriented paradigm approach to use in Mathematica?] <http://mathematica.stackexchange.com/questions/119991/which-object-oriented-paradigm-approach-to-use-in-mathematica>

Which Object-Oriented Paradigm (OOP) approach to use in Mathematica for: general implementation, or a particular project?

There are a lot of related questions and answers in MSE on doing OOP that ...

- asked by Anton Antonov (14 votes)

[How can I use Mathematica to sort the US Congressional Districts by PerimeterœArea] <http://mathematica.stackexchange.com/questions/119944/how-can-i-use-mathematica-to-sort-the-us-congressional-districts-by-perimeter%c3%b7ar>

The United States is divided into 435 congressional districts. Some of their shapes can be really strange due to gerrymandering. I think that I can find very gerrymandered congressional districts if ...

- asked by QuantumDot (13 votes), answered by Emilio Pisanty (6 votes)

[Gillespie Stochastic Simulation Algorithm] <http://mathematica.stackexchange.com/questions/119786/gillespie-stochastic-simulation-algorithm>

The Gillespie SSA is a Monte Carlo stochastic simulation algorithm to find the trajectory a dynamic system described by a reaction (or interaction) network, e.g. chemical reactions or ecological ...

- asked by István Zachar (13 votes), answered by István Zachar (15 votes)

[How to create a fascinating QR code like this?] <http://mathematica.stackexchange.com/questions/120041/how-to-create-a-fascinating-qr-code-like-this>

Check the facinating QRCode in my profile page here

You can find that this QRCode is some sort of intriguing as the QRCode is a IMAGE ITSELF!!!

So my question is, how to create such a QRCode ...

- asked by Wjx (11 votes), answered by Wjx (11 votes)

[Data extraction from a picture of a graph] <http://mathematica.stackexchange.com/questions/119666/data-extraction-from-a-picture-of-a-graph>

How can I extract data from this picture of a graph?

```
i = Import["http://i.stack.imgur.com/Ac8m0.png"];
```

The caption of the picture reads: " Two-dimensional histogram values measured . Tick labels ...

- asked by psimeson (10 votes), answered by Simon Woods (16 votes)

[Evaluating summations involving Fibonacci numbers in terms of Fibonacci numbers] <http://mathematica.stackexchange.com/questions/119822/evaluating-summations-involving-fibonacci-numbers-in-terms-of-fibonacci-numbers>

There are many summations involving Fibonacci numbers which Mathematica 10.4 is able to evaluate directly in terms of Fibonacci numbers. For example, Mathematica evaluates the summation given below as ...

- asked by John M. Campbell (9 votes), answered by yarchik (4 votes)

[TreeForm outputs different results for the same inputs but why?] <http://mathematica.stackexchange.com/questions/119745/treeform-outputs-different-results-for-the-same-inputs-but-why>

First of all, please look at the below inputs and outputs:

```
In[1]:= $a = Array[# Range[#] & , {5}]
```

```
Out[1]= {{1}, {2, 4}, {3, 6, 9}, {4, 8, 12, 16}, {5, 10, 15, 20, 25}}
```

```
In[2]:= $af = Flatten[$a, ...
```

- asked by Taiki Bessho (8 votes), answered by JasonB (11 votes)

=====
Greatest hits from previous weeks: =====

[How to plot an ellipse?] <http://mathematica.stackexchange.com/questions/20100/how-to-plot-an-ellipse>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using

```
Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]
```

but I'm getting some errors. Is there something wrong ...

- asked by Sriram (6 votes), answered by Jens (15 votes)

[Is it possible to draw this figure using Mathematica?] <http://mathematica.stackexchange.com/questions/110848/is-it-possible-to-draw-this-figure-using-mathematica>

The figure is

See the how-to video or a speeded-up GIF.

I believe it should be possible to draw this figure programmatically using some Random function, but I'm rather new to Mathematica, so I ...

- asked by AccidentalFourierTransform (50 votes), answered by M.R. (75 votes)

=====
Can you answer these? =====

[Hide Notebook scrollbars] <http://mathematica.stackexchange.com/questions/119665/hide-notebook-scrollbars>

Is it possible to hide the scrollbars from the notebook windows while still being able to use the mousewheel to scroll? Since I never click on the bars themselves they're just a waste of space. It's ...

- asked by Ray (3 votes)

[Hold Values of DensityPlot to use for an other DensityPlot] <http://mathematica.stackexchange.com/questions/120022/hold-values-of-densityplot-to-use-for-an-other-densityplot>

I have two surface functions, $f[x,y]$ and $g[x,y]$. Assuming that the DensityPlot of f and g takes a while, is there a way to hold the values of DensityPlot, to efficiently DensityPlot $f[x,y]-g[x,y]$?

...

- asked by Pierre L. (1 vote)

[How to place window on second screen?] <http://mathematica.stackexchange.com/questions/119835/how-to-place-window-on-second-screen>

I am trying to open a window on a second screen (a thunderbolt display attached to a macbook pro) that is the full size of the second screen. Here is the command I use:

ThunderboltDimensions = 2560, ...

- asked by abwatson (1 vote)

5.27 Tuesday, June 28, 2016

=====

Top new questions this week:

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[Is the renaming mechanism of 'With' flawed?] <http://mathematica.stackexchange.com/questions/119403/is-the-renaming-mechanism-of-with-flawed>

I'm confused about the renaming mechanism of With:

```
With[{x = a}, Hold[With[{a = b}, a + 2 x]]]
(*=>Hold[With[{a$ = b}, a$ + 2 a]]*)
```

```
With[{x = a$}, Hold[With[{a = b}, a + 2 x]]]
```

...

- asked by luyuwuli (21 votes), answered by Leonid Shifrin (22 votes)

[How do I increase the readability of this code?] <http://mathematica.stackexchange.com/questions/119074/how-do-i-increase-the-readability-of-this-code>

Below is some code I am working on; being a beginner. How can I increase the readability of the part behind Manipulate?

I can't read my own code anymore, because it is simply too long and unordered. ...

- asked by Imre Vegh (20 votes), answered by E.Doroskevic (16 votes)

[Mysterious behaviour of Pick] <http://mathematica.stackexchange.com/questions/119223/mysterious-behaviour-of-pick>

As everyone knows, Pick can do amazing things, The most facinating phenomenon is that it can pick though all sorts of lists:

The basic & pattern matching:

```
Pick[{4, 5, 6}, {1, 2, 1}, 1]
(*{4,6}*)
```

...

- asked by Wjx (18 votes), answered by WReach (25 votes)

[How to debug the C code for LibraryLink?] <http://mathematica.stackexchange.com/questions/119053/how-to-debug-the-c-code-for-librarylink>

Recently, I use the C to rewrite a Mathematica function NonzeroBasis[], please see here for fully descriptions.

Here, NonzeroBasis[i,p,u,U] calculates the values of ...

- asked by Shutao TANG (11 votes), answered by Szabolcs (16 votes)

[Is it possible to attach a debugger to a dynamically linked library on the supported OS?] <http://mathematica.stackexchange.com/questions/119083/is-it-possible-to-attach-a-debugger-to-a-dynamically-linked-library-on-the-suppo>

Recently, I discovered that LibraryLink technique is a very useful tool to improve the performance of function. Firstly, I need to use LibraryLink template to write C/C++ program. Then compiling the ...

- asked by Shutao TANG (10 votes), answered by user21 (3 votes)

[Nothing not behaving as expected?] <http://mathematica.stackexchange.com/questions/119239/nothing-not-behaving-as-expected>

I was thinking that Nothing was doing the same job as the vanishing sequence `##&[]`

Yet this exemple shows it doesn't.

```
Association[If[True,Nothing]] (*returns Association[Nothing]*)
```

```
...
```

- asked by faysou (10 votes), answered by Szabolcs (12 votes)

[Random walk on a Sierpinski gasket] <http://mathematica.stackexchange.com/questions/119036/random-walk-on-a-sierpinski-gasket>

I am trying to simulate a random walk on a Sierpinski gasket. The best strategy i could come up with is to use Nearest point function to determine the next possible step of my walker. But this creates ...

- asked by FEARxxx (9 votes), answered by Wjx (11 votes)

==== Greatest hits from previous weeks: =====

[Creating legends for plots with multiple lines?] <http://mathematica.stackexchange.com/questions/4025/creating-legends-for-plots-with-multiple-lines>

So I have a graph with multiple lists, for e.g.

```
data = {{1,2}, {3,4}, {3,5}, {2,3} . . .}
```

If I then do `ListLinePlot[Table[{{#1,Log[b,#2]}&@@@data, {b,1,10,2}}]` I have no way

- asked by Eiyriou von Kauyf (58 votes), answered by Jens (88 votes)

[How can this image (optical illusion) be created with Mathematica?] <http://mathematica.stackexchange.com/questions/24148/how-can-this-image-optical-illusion-be-created-with-mathematica>

5.28 Tuesday, June 21, 2016

=====

Top new questions this week:

=====

[3D graphic of soccer ball] <http://mathematica.stackexchange.com/questions/118604/3d-graphic-of-soccer-ball>

How to make a soccer ball 3D graphic?

The following image is from Wikipedia, Spherical polyhedron:

Truncated icosahedron (left) and standard soccer ball (right)

...

- asked by vito (23 votes), answered by Michael E2 (23 votes)

[The character sequence " . d" triggers line break in strings] <http://mathematica.stackexchange.com/questions/118801/the-character-sequence-d-triggers-line-break-in-strings>

Bug introduced in 7.0 or earlier and persists through 10.4.1

Bug isn't present in version 5.2

Update: Sjoerd pointed out that this happens with any string and it is not related to StringForm. Just ...

- asked by Szabolcs (14 votes), answered by Sjoerd C. de Vries (12 votes)

[Inconsistent handling of Dynamic option values; intended, omission, or bug?] <http://mathematica.stackexchange.com/questions/118646/inconsistent-handling-of-dynamic-option-values-intended-omission-or-bug>

In answering Dynamic ClipPlanes calculated from current ViewPoint Kuba and I got into a brief exchange regarding how Option values wrapped in Dynamic should be handled. For background John Fultz ...

- asked by Mr.Wizard (14 votes)

[How can I plot this spirally surface?] <http://mathematica.stackexchange.com/questions/118887/how-can-i-plot-this-spirally-surface>

I would like to plot a surface that looks something like this sand spiral.

But I really have no idea how. Ideally I would like to be able to express this as a function in cartesian coordinates. I'm ...

- asked by user41147 (12 votes), answered by Thies Heidecke (28 votes)

[Any manual on cell grouping management?] <http://mathematica.stackexchange.com/questions/118649/any-manual-on-cell-grouping-management>

Recently I come back to the problem of cell grouping and performed extensive search on this site and on MathGroup archive for information on how to use the possible values of the CellGroupingRules ...

- asked by Alexey Popkov (12 votes)

[How can Mathematica be used to create Images like these?] <http://mathematica.stackexchange.com/questions/118992/how-can-mathematica-be-used-to-create-images-like-these>

Here are two examples of artistic image interpolation using just black lines. The first link shows the desired result created by an artist and the second done with C#.

TRIANGULATION: ANGULAR ...

- asked by R Hall (11 votes), answered by MarcoB (10 votes)

[How to implement custom NIntegrate integration strategies?] <http://mathematica.stackexchange.com/questions/118920/how-to-implement-custom-nintegrate-integration-strategies>

How can new integration strategies algorithms be used with NIntegrate?

This is a different type of extension than the extensions with new integration rules, as described in the answer for the ...

- asked by Anton Antonov (10 votes), answered by Anton Antonov (10 votes)

==== Greatest hits from previous weeks: =====

[Fit image of mountain to gaussian] <http://mathematica.stackexchange.com/questions/109946/fit-image-of-mountain-to-gaussian>

I want to detect the edges of an image of a mountain and then fit that to a gaussian.

I am unsure about how to only get the mountain edge, rather than every single edge in the image.

How do I ...

- asked by olliepower (13 votes), answered by Dr. belisarius (14 votes)

[How to find the position of elements in a list satisfying criteria] <http://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria>

Say I have a list $x=\{2,4,6,8,10\}$ and I want to find out the positions of the elements

Select[x, #>7&] gives the elements themselves, and Position[x,8] gives the ...

- asked by PeterR (32 votes), answered by J. M. (29 votes)

=====
 ===== Can you answer these?
 =====

[Softmax Regression Classification Algorithm] <http://mathematica.stackexchange.com/questions/118958/softmax-regression-classification-algorithm>

I'm following the Stanford Machine Learning course while simultaneously developing my Mathematica abilities. I'm having issues with my Softmax Classifier implementation (for ref, have a look at these ...

- asked by Frederik Brinck Jensen (4 votes)

[Protected Variable Error with Workbench 3.0] <http://mathematica.stackexchange.com/questions/118919/protected-variable-error-with-workbench-3-0>

I have Wolfram Workbench 3.0, build 78, with Mathematica 10.4 as the front end. I am using Windows 10. I am trying to run a simple test source code test.m:

```
fun[x_] := x^2;
```

I have an empty notebook ...

- asked by S2167 (2 votes)

[Putting the elements of a list inside another list] <http://mathematica.stackexchange.com/questions/118837/putting-the-elements-of-a-list-inside-another-list>

I have the list `list1 = 1, 3, 4, 5, 6` and want to put the elements of this list inside a list of 0's, `list2 = 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0`, where each element of `list1` will be in the ...

- asked by user41129 (1 vote)

5.29 Tuesday, June 14, 2016

=====

Top new questions this week:

=====

[Are you interested in a Wolfram Workbench Update?] <http://mathematica.stackexchange.com/questions/118154/are-you-interested-in-a-wolfram-workbench-update>

I also posted this on the Wolfram Community site (link below)

Last week I attended the Wolfram Tour (which was great). I asked whenever we could expect a new version of Workbench, as the current ...

- asked by Frank Martin (18 votes), answered by Anton Antonov (14 votes)

[Is manual adjustment of AccuracyGoal and PrecisionGoal useless?] <http://mathematica.stackexchange.com/questions/118249/is-manual-adjustment-of-accuracygoal-and-precisiongoal-useless>

This is a problem confusing me for years.

AccuracyGoal and PrecisionGoal are two options that I never truly understand and, to be honest, always avoid touching. Let's first look at the descriptions ...

- asked by xzczd (15 votes)

[Can Mathematica recompose an image?] <http://mathematica.stackexchange.com/questions/117892/can-mathematica-recompose-an-image>

The OP in this post on superuser.com asks how to recompose an image; quoting:

I have a set of images, which are parts of a bigger image.

I would like the images to assembled as automated as ...

- asked by mattiav27 (15 votes), answered by C. E. (13 votes)

[How to implement custom integration rules for use by NIntegrate] <http://mathematica.stackexchange.com/questions/118324/how-to-implement-custom-integration-rules-for-use-by-nintegrate>

How can NIntegrate be extended with custom implementation of integration rules?

This answer of the question "Monte Carlo integration with random numbers generated from a Gaussian distribution" shows ...

- asked by Anton Antonov (14 votes), answered by Anton Antonov (15 votes)

[Unexpected behavior of Sequence – using Sequence to delete parts of an expression] <http://mathematica.stackexchange.com/questions/118108/unexpected-behavior-of-sequence-using-sequence-to-delete-parts-of-an-expressi>

I thought that assigning Sequence[] to the part of an expression was an effective way to remove it. For example, the following code yields 2,3,4,5:

```
xx = Range[5]; xx[[1]] = Sequence[]; xx
```

Thus, I ...

- asked by Hector (10 votes), answered by Leonid Shifrin (6 votes)

[Why NIntegrate is badly-behaved on $J_{\frac{9}{2}}(x)$ by default?] <http://mathematica.stackexchange.com/questions/117888/why-nintegrate-is-badly-behaved-on-j-frac92x-by-default>

A friend of mine showed me this example:

```
Plot[BesselJ[9/2, x], {x, 0, 1},
  PlotLabel -> Style["The integrand seems to be simple", 14]]
```

```
Integrate[BesselJ[9/2, x], {x, 0, 1}] // N
(* ...
```

- asked by xzczd (10 votes), answered by Anton Antonov (6 votes)

[How do I insert OwnValues inside a held expression without evaluating it?] <http://mathematica.stackexchange.com/questions/118030/how-do-i-insert-ownvalues-inside-a-held-expression-without-evaluating-it>

Here is a very long and complicated expression, which we abbreviate as a. I store it using SetDelayed because I want to perform algebraic manipulations on it:

```
ClearAll[a];
a := 1 + 1
```

Here is a ...

- asked by QuantumDot (9 votes), answered by Kuba (9 votes)

=====
Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (419 votes), answered by faysou (377 votes)

[++ is dangerous for C programmers] <http://mathematica.stackexchange.com/questions/107619/is-dangerous-for-c-programmers>

I noticed this fact, that may be misleading for programmers used to C language.

In Mathematica, if you have a function `f[]` and an array `v`, and you write

```
v[[ f[] ]]++
```

the function `f` is called ...

- asked by Giovanni Resta (32 votes), answered by Mr.Wizard (24 votes)

=====
Can you answer these? =====

[Solve and design "water flow"] <http://mathematica.stackexchange.com/questions/118183/solve-and-design-water-flow>

In some strategy game I play, I'll have to change the terrain to make the water flow in some specific way to fulfill my goal. The water flow changes with terrain so if I can change the terrain wisely ...

- asked by Wjx (5 votes)

[Is there a way to figure out the "upper limit" of my PC's computational ability in Mathematica?] <http://mathematica.stackexchange.com/questions/117852/is-t>

here-a-way-to-figure-out-the-upper-limit-of-my-pcs-computational-ability

I am doing some simulations with Finite Element Analysis (FEA) and part of it is forming a mesh in 3D and then using NDSolveValue to solve a differential equation on that mesh.

For some meshes, my ...

- asked by YungHummma (2 votes)

[Numerical testing of Hardy's inequality] <http://mathematica.stackexchange.com/questions/118061/numerical-testing-of-hardys-inequality>

I want to check the following Hardy's most fundamental inequality by using Mathematica:

$$\sum_{n=1}^{\infty} \left(\frac{A_n}{n} \right)^p < \left(\frac{p}{p-1} \right)^p \sum_{n=1}^{\infty} a_n^p$$

...

- asked by vito (2 votes)

5.30 Tuesday, June 7, 2016

=====

Top new questions this week:

=====

[Bug with MapAt, Span, and Association?] <http://mathematica.stackexchange.com/questions/116561/bug-with-mapat-span-and-association>

Bug introduced in 10.0 and persisting through 10.4.1 or later

Related to Mapping (Query) a function at multiple locations in nested data via All, Span, it seems to me that the behavior of MapAt ...

- asked by Mr.Wizard (19 votes)

[Joining points into 3D surface] <http://mathematica.stackexchange.com/questions/117736/joining-points-into-3d-surface>

This seems like a simple problem, but I can't find any questions like it here so I'm making a new one. Apologies if I missed one.

I have a list of points contained in a file which can be visualized ...

- asked by Crepo (12 votes), answered by george2079 (6 votes)

[How to check the validity of an option value] <http://mathematica.stackexchange.com/questions/116623/how-to-check-the-validity-of-an-option-value>

I have a user-defined function, func, which takes the following form:

```
func[arg1, arg2, options]
```

Here is the actual code

```
Options[func] =
  {opt1 -> Automatic, opt2 -> False, opt3 -> {1, ...
```

- asked by Shutao TANG (12 votes), answered by Leonid Shifrin (10 votes)

[Why does the GeoGraphics Frame show different Latitude than GeoPosition?] <http://mathematica.stackexchange.com/questions/116507/why-does-the-geographics-frame-show-different-latitude-than-geoposition>

The map looks right, but the Latitude in the Frame looks wrong.

Am I making a mistake or is this a bug?

- asked by vonkohorn (12 votes), answered by jose (8 votes)

[Rotate Geographic map] <http://mathematica.stackexchange.com/questions/117744/rotate-geographic-map>

I want the map to be rotated by -45 Degree. I want to coast to be horizontal (perfect -45 degree). I already have:

```
loc = GeoPosition[{52.57243, 5.51780}];
loc1 = GeoPosition[{52.57718, 5.52193}];
...
```

- asked by Dennis (11 votes)

[How to learn the LibraryLink technique for the newcomer?] <http://mathematica.stackexchange.com/questions/116451/how-to-learn-the-librarylink-technique-for-the-newcomer>

Description

For the built-in programming language(or called Wolfram Language) of Wolfram Mathematica, I think it is much easier and simpler to learn than other computer language(such as C/C++ or ...

- asked by Shutao TANG (11 votes), answered by Szabolcs (12 votes)

[Nested association values validation. POJsO handling] <http://mathematica.stackexchange.com/questions/116571/nested-association-values-validation-pojso-handling>

Sometimes it is convenient to work in your package/app with "objects" like:

```
childObject = &lt;|
  "id" -&gt; 284,
  "text" -&gt; "texttext",
  "property" -&gt; &lt;|
    "type" -&gt; "String",
  ...
```

- asked by Kuba (9 votes), answered by Leonid Shifrin (5 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (417 votes), answered by faysou (376 votes)

[How to create word clouds?] <http://mathematica.stackexchange.com/questions/2334/how-to-create-word-clouds>

Word clouds are rather useless fancy and visually appealing plots, where words are plotted with different sizes according to their frequency in a corpus. Many applications exist out there (Wordle, ...

- asked by Istvan Zachar (126 votes), answered by Heike (105 votes)

=====
 ===== Can you answer these?
 =====

[What is the difference between getting a boundary mesh from ToBoundaryMesh vs doing it with ToElementMesh?] <http://mathematica.stackexchange.com/questions/116559/what-is-the-difference-between-getting-a-boundary-mesh-from-toboundarymesh-vs-do>

I am trying to figure out how to define and use meshes for FEM and NDSolve. I've figured out that if I want more resolution near my boundaries, I can use ToBoundaryMesh to first create the boundary ...

- asked by YungHummma (4 votes)

[Solving Differential Equation for derivative] <http://mathematica.stackexchange.com/questions/117689/solving-differential-equation-for-derivative>

I am new to mathematica and am trying to solve a differential equation. Actually, I am not entirely sure if the system can be called differential equation.

I am interested in finding out the second ...

- asked by JKJ (1 vote)

[ShortestTour Problem with Constraints] <http://mathematica.stackexchange.com/questions/116505/shortesttour-problem-with-constraints>

I can solve a travelling salesman problem with FindShortestTour[], but couldn't find any function to solve a shorest tour problem with additional constraints like cost, fuel capacity etc. How cam I ...

- asked by user40405 (3 votes)

5.31 Tuesday, May 31, 2016

=====

Top new questions this week:

=====

[Determine whether points lie within a cow] <http://mathematica.stackexchange.com/questions/116160/determine-whether-points-lie-within-a-cow>

I would like to determine whether randomly-generated points

```

lX = RandomVariate[UniformDistribution[{-0.4, 0.4}], {1000}];
lY = RandomVariate[UniformDistribution[{-0.2, 0.2}], {1000}];
lZ = ...

```

- asked by ben18785 (18 votes), answered by Daniel Lichtblau (12 votes)

[FindMinimum doesn't increase step size when necessary] <http://mathematica.stackexchange.com/questions/116295/findminimum-doesnt-increase-step-size-when-necessary>

I've spent much time finding a minimal example demonstrating this problem with FindMinimum. Normally one faces this problem when fitting very large and complicated functions which cannot be posted ...

- asked by Alexey Popkov (13 votes)

[Internal DynamicModule steals scope of external DynamicModule] <http://mathematica.stackexchange.com/questions/116167/internal-dynamicmodule-steals-scope-of-external-dynamicmodule>

I have two dynamic objects, one nested in the other. Both have their own functions defined, as follows. I have simplified them to the point where they don't make much sense, but can still illustrate ...

- asked by Istvan Zachar (13 votes), answered by John Fultz (6 votes)

[Opposite of Alternatives in a Rule] <http://mathematica.stackexchange.com/questions/116302/opposite-of-alternatives-in-a-rule>

Mathematica provides Alternatives, to match one of several patterns. In a rule, this is used as `p1|p2|p3;>replacement`. I would like to have the opposite logic: `p1&p2&p3;>replacement` ...

- asked by Bruno Le Floch (10 votes), answered by Bruno Le Floch (8 votes)

[Symbolic and numeric limit disagreeing on branch cut of ArcTan] <http://mathematica.stackexchange.com/questions/116183/symbolic-and-numeric-limit-disagreeing-on-branch-cut-of-arctan>

Bug introduced after v8.0.4 and before v9.0.1, and persisting through v10.4.1.

Investigating comments to my previous question lead me to the following problem:

`N[Limit[ArcTan[Sqrt[-4 E^(I a)]], ...`

- asked by Axel Boldt (9 votes), answered by bbgodfrey (9 votes)

[Why does the global variable exist here, where it was declared only in Module?] <http://mathematica.stackexchange.com/questions/116140/why-does-the-global-variable-exist-here-where-it-was-declared-only-in-module>

Why does Mathematica choose the mechanism that makes the global variable a here while parsing?

In

```
f := Module[{a}, a;]
```

In

?a

Out

Global 'a

I don't understand why Mathematica goes in the way ...

- asked by Smart Humanism (8 votes), answered by Leonid Shifrin (15 votes)

[Integrate and NIntegrate disagreeing over branch cut of Sqrt?] <http://mathematica.stackexchange.com/questions/116041/integrate-and-nintegrate-disagreeing-over-branch-cut-of-sqrt>

Bug introduced after v8.0.4 and before v9.0.1, and persisting through v10.4.1.

In Mathematica 10.2 I'm trying to integrate this piecewise continuous function, but Integrate and NIntegrate seem to ...

- asked by Axel Boldt (8 votes), answered by bbgodfrey (6 votes)

=====
 Greatest hits from previous weeks: =====

[Generating a Sierpinski carpet] <http://mathematica.stackexchange.com/questions/22052/generating-a-sierpinski-carpet>

I am trying to draw a `Sierpinski_carpet`. I have code that works, but I think there is a more elegant way to do than my way. Maybe I could use Tuples or Permutations or some similar function to ...

- asked by chyaong (43 votes), answered by Mr.Wizard (67 votes)

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[#], Sin[#]} &[Pi - (ArcCot[1])]},
  Polygon @ {0, ...
```

- asked by mathe (22 votes), answered by Bob Hanlon (18 votes)

=====
 ===== Can you answer these?
 =====

[Problem with Parallelization when using Packages] <http://mathematica.stackexchange.com/questions/115862/problem-with-parallelization-when-using-packages>

I tried to find a solution to my problem in several answers posted in MSE but due to lack of my knowledge on parallelization territory, I couldn't figure out solution to my problem.

I have a big code ...

- asked by AlgoHi (4 votes)

[Fourier transform of $\text{Exp}[x]/x$] <http://mathematica.stackexchange.com/questions/116157/fourier-transform-of-exp-x>

Could you please explain why Mathematica gives the following expression when taking Fourier transform of $\exp(\lambda z)/\lambda$?

$$\frac{-\log(-z) + \log(z)}{\sqrt{2\pi}}$$

Why the answer does not ...

- asked by Ivan Gankevich (4 votes)

[Inconsistent behavior from RegionMeasure on the RegionIntersection between a Polygon and a Line] <http://mathematica.stackexchange.com/questions/116083/inconsistent-behavior-from-regionmeasure-on-the-regionintersection-between-a-polygon-and-a-line>

Consider a Polygon with lines drawn between two of its vertices,

```
pgon = Get[
  "https://gist.githubusercontent.com/jasondbiggs/\
59cb7d4aa802bde68c9f6a5203ef698f/raw/\
  ...
```

- asked by Jason is no longer a postdoc (1 vote)

5.32 Tuesday, May 24, 2016

=====
 Top new questions this week:
 =====

[Pulsed NMR animation] <http://mathematica.stackexchange.com/questions/115675/pulsed-nmr-animation>

I'm new here and have never interacted with the community so excuse me if this has been asked before or if I format incorrectly or anything like that.

Anyway, I'm trying to make an animation for a ...

- asked by D. Sessions (13 votes), answered by Jack LaVigne (16 votes)

[Plot 3D model of DNA in Mathematica] <http://mathematica.stackexchange.com/questions/115491/plot-3d-model-of-dna-in-mathematica>

My friend asked me if we can plot a 3D model of DNA (deoxyribonucleic acid) in Mathematica. However, I am not really familiar with this and I don't know if Mathematica can do this. Could you answer ...

- asked by BlueSky (12 votes), answered by JasonB (23 votes)

[Exclude overlapping lists while keeping disjoint- and sub-lists?] <http://mathematica.stackexchange.com/questions/115545/exclude-overlapping-lists-while-keeping-disjoint-and-sub-lists>

Consider a function `f[l1_List, l2_List]` which is given lists of integers. Whenever two of the lists contain completely disjoint sets of integers OR one of the lists is completely contained in the ...

- asked by Kagaratsch (12 votes), answered by ciao (15 votes)

[Beautiful dance of the Earth and Venus around the sun] <http://mathematica.stackexchange.com/questions/115358/beautiful-dance-of-the-earth-and-venus-around-the-sun>

I have seen very nice dynamic graphics created by users of Ma. I would like to get help whether the following graphics can be created using Ma. I was not able to create the dynamic picture here. ...

- asked by ramesh (11 votes), answered by ubpdqn (6 votes)

[Second argument of `BeginPackage` with nested package loading] <http://mathematica.stackexchange.com/questions/115502/second-argument-of-beginpackage-with-nested-package-loading>

I naively thought that the second argument of `BeginPackage` can simply be used to ensure the loading and availability in the `$ContextPath` of additional packages.

Example:

```
(* Pack1.m *) ...
```

- asked by Szabolcs (11 votes), answered by Leonid Shifrin (7 votes)

[How to correctly implement in a new function the scoping behavior of `Table`, `Sum` and other commands that use `Block` to localize iterators?] <http://mathematica.stackexchange.com/questions/115722/how-to-correctly-implement-in-a-new-function-the-scoping-behavior-of-table-sum>

It is documented that "`Block` is automatically used to localize values of iterators in iteration constructs such as `Do`, `Sum`, and `Table`." Therefore the dummy index (iterator) in a `Sum` is shielded ...

- asked by MaTECmatica (9 votes), answered by Leonid Shifrin (6 votes)

[Parallelization works, but does not use all CPU power] <http://mathematica.stackexchange.com/questions/115436/parallelization-works-but-does-not-use-all-cpu-power>

I've written code which involves `Parallelize@Cases`. When I evaluate, I find that all 16 cores are being used, but not fully; in other words all cores are active, but the total CPU usage is only 50

...

- asked by Luther (8 votes), answered by Szabolcs (17 votes)

=====
Greatest hits from previous weeks: =====

[How was Mathematica built?] <http://mathematica.stackexchange.com/questions/106020/how-was-mathematica-built>

I've been wondering this for a while now: How was Mathematica built?

Is it written in Haskell? C++? I'd love to get a taste of the wizardry behind this incredible software.

- asked by Chet (17 votes), answered by Sjoerd C. de Vries (23 votes)

[How do I clear all user defined symbols?] <http://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to `Evaluation -> Quit kernel` and firing a new one up?

- asked by niklasfi (42 votes), answered by Artes (36 votes)

=====
Can you answer these? =====

[How can I define `MakeBoxes` for Inactive forms user-defined heads?] <http://mathematica.stackexchange.com/questions/115638/how-can-i-define-makeboxes-for-inactive-forms-user-defined-heads>

Here I define a `MakeBoxes` for `Times`:

```
MakeBoxes[p : Inactive[Times][args___], form_] :=
  MakeBoxes[Interpretation[HoldForm@myHead[args], p], form]
```

And it works as expected:

```
Inactivate[Times[3, ...
```

- asked by QuantumDot (2 votes)

[Quits Kernel during evaluation of CreateTopologies] <http://mathematica.stackexchange.com/questions/115660/quits-kernel-during-evaluation-of-createtopologies>

I am using Feynarts 3.9 and FeynCalc 9.0.1 with Mathematica 10. Every time I load FeynArts with FeynCalc and execute

```
t = CreateTopologies[1, 1 -&gt; 2];
```

mathematica quits the kernel after a few ...

- asked by Heerak Banerjee (1 vote)

[Inconsistent performance of code] <http://mathematica.stackexchange.com/questions/115634/inconsistent-performance-of-code>

I'm trying to do some optimizations to my code to make it run faster, but it seems that there are inconsistencies in the performance of the code. Namely, the codes have different performance in ...

- asked by xslittlegrass (5 votes)

5.33 Tuesday, May 17, 2016

=====

Top new questions this week:

=====

[Speedup matrix number multiplication] <http://mathematica.stackexchange.com/questions/115087/speedup-matrix-number-multiplication>

Consider this simple matrix number multiplication:

```
lth = 200;
```

```
mtx = RandomReal[{0, 1}, {lth, lth}];
```

```
ls = RandomReal[{0, 1}, {lth}];
```

```
Et = Function[{t}, Sin[(Pi t)/20] Sin[2 t]];
Etc = Compile[{{t}, ...
```

- asked by xslittlegrass (15 votes), answered by xslittlegrass (5 votes)

[Fit a function with an unusual side condition] <http://mathematica.stackexchange.com/questions/114864/fit-a-function-with-an-unusual-side-condition>

I have a set of measurement data and I try to fit there a function (a $\text{Exp}[b x] + c \text{Exp}[d x] - o$). I have two problems:

The fit function does not converge nor after 500 iterations. The fit function ...

- asked by Lutscher (12 votes), answered by Anton Antonov (15 votes)

[Tips to move from functional programming to GUI-based applications] <http://mathematica.stackexchange.com/questions/114984/tips-to-move-from-functional-programming-to-gui-based-applications>

Even though this forum has some questions related to Mathematica programming tips I think that we still don't have specific help for those who want to learn to efficiently create GUIs in Mathematica. ...

- asked by Ariel Sepulveda (11 votes), answered by Brian G (0 votes)

[Longest common substring for multiple strings?] <http://mathematica.stackexchange.com/questions/114979/longest-common-substring-for-multiple-strings>

I'm looking for a way to get the longest common substring for multiple strings such as

`{home/dir1/dir2/jmoasd.txt,home/dir1/dir2/ivbnoxcihv.txt,home/dir1/dir2/siuhgiuchv.t`

should yield

...

- asked by nqduy (10 votes), answered by xslittlegrass (9 votes)

[How does a Pringle lose its curvature?] <http://mathematica.stackexchange.com/questions/115231/how-does-a-pringle-lose-its-curvature>

Nom!

As part of a bigger project, I've was writing some code to calculate the scalar curvature of surfaces of the form $z = f(x, y)$. This uses a general calculation of the scalar curvature to produce ...

- asked by Lucas (9 votes), answered by KraZug (9 votes)

[How to make datasets display correctly?] <http://mathematica.stackexchange.com/questions/115246/how-to-make-datasets-display-correctly>

NB: The problem illustrated below is truly ubiquitous. I hope the examples given below are sufficiently different to demonstrate this fact, and to discourage answers that hinge on the details of the ...

- asked by kjo (9 votes), answered by Stefan R (9 votes)

[How do I translate a list of English words into another language using an online translation service with Mathematica?] <http://mathematica.stackexchange.com/questions/115141/how-do-i-translate-a-list-of-english-words-into-another-language-using-an-online>

As far as I know, there are two posts on this topic: Can I use Mathematica to translate a English word to a Chinese characters? and *How can I use Mathematica to get the translated result from the ...

- asked by matheorem (9 votes), answered by Rashid (11 votes)

=====
 Greatest hits from previous weeks: =====

[What is the best Mathematica tutorial for young people?] <http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people>

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (43 votes), answered by Vitaliy Kaurov (23 votes)

[How to make use of Associations?] <http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (110 votes), answered by Leonid Shifrin (128 votes)

=====
 Can you answer these?
 =====

[PearsonChiSquareTest for count/frequency data?] <http://mathematica.stackexchange.com/questions/114905/pearsonchisquaretest-for-count-frequency-data>

I read with interest a previous question on the PearsonChiSquareTest from a few years ago, and one answer was very helpful:

Performing a chi-square goodness of fit test

Have there been any updates ...

- asked by Jim (3 votes)

[ParallelDo issue with SQLExecute (SQLite)] <http://mathematica.stackexchange.com/questions/115263/paralleldo-issue-with-sqlexecute-sqlite>

This code run as expected if I use Do[...], but if I use instead ParallelDo[...], as in the code bellow, the SQL INSERT statements seems to be completely ignored.

In both cases, the filename is ...

- asked by jss (2 votes)

[Why does Kernels[] produce this error?] <http://mathematica.stackexchange.com/questions/115100/why-does-kernels-produce-this-error>

Most of times, on my PC, when Kernel[] is launched for the first time, produces this error:

Executed again returns .

Is it a clue of malfunctioning or is, for reason I'm unaware of, the way it ...

- asked by mitochondrial (3 votes)

5.34 Tuesday, May 10, 2016

=====

Top new questions this week:

=====

[Understanding evaluation and typesetting] <http://mathematica.stackexchange.com/questions/114305/understanding-evaluation-and-typesetting>

Background

So, one could be surprised by the fact that:

Hold @ Grid[{{1, 2}}

(*or*)

Hold @ Graphics @ Disk[]

This issue and methods of prevention are discussed in Prevent graphics render ...

- asked by Kuba (16 votes), answered by Alexey Popkov (7 votes)

[Empty WhenEvent action crashes kernel] <http://mathematica.stackexchange.com/questions/114314/empty-whenevent-action-crashes-kernel>

Bug introduced in 9.0 and persisting through 10.4.1 WhenEvent is new in 9.0.

This is an example from the docs, slightly modified (action is wrapped in `Hold`), working as expected.

```
NDSolve[x'[t] == ...
```

- asked by Istvan Zachar (12 votes), answered by Istvan Zachar (3 votes)

[Difference between = and Ctrl + =] <http://mathematica.stackexchange.com/questions/114357/difference-between-and-ctrl>

What is a difference between =, and Ctrl + =?

For instance

there are some examples, but result is same.

and

- asked by vito (11 votes), answered by WReach (19 votes)

[Is there a way to make links to functions in a notebook?] <http://mathematica.stackexchange.com/questions/114342/is-there-a-way-to-make-links-to-functions-in-a-notebook>

Frequently I'm working on a function that's at the top of my notebook in a "functions" section, but I'm looking at the output of it in a lower "body" section of the notebook. When I want to edit the ...

- asked by YungHummma (11 votes), answered by Mr.Wizard (11 votes)

[Strategies to compensate for lack of multi-document interface?] <http://mathematica.stackexchange.com/questions/114515/strategies-to-compensate-for-lack-of-multi-document-interface>

I use Mathematica (Home Edition) to manage notes which live in a large number of different notebooks. In my case the notebooks (hundreds) are just organized using document names and file system ...

- asked by billc (10 votes), answered by Leonid Shifrin (10 votes)

[Definition of Mod and Quotient with complex arguments] <http://mathematica.stackexchange.com/questions/114361/definition-of-mod-and-quotient-with-complex-arguments>

How are Mod and Quotient defined for three real/complex arguments? I wasn't able to find the definition.

My main surprise so far when investigating their behavior is a discontinuity between real and ...

- asked by Bruno Le Floch (10 votes), answered by Chip Hurst (10 votes)

[HighlightGraph Problem] <http://mathematica.stackexchange.com/questions/114725/highlightgraph-problem>

Bug introduced in 9.0 or earlier and persisting through 10.4.1

HighlightGraph does not work.

HighlightGraph[Graph[{{0, 0}, {0, 1}, {1, 0}, {1, 1}}, {{0, 0} \[UndirectedEdge] {0, 1}}

- asked by ZYX (8 votes), answered by Szabolcs (5 votes)

==== Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (42 votes), answered by Artes (36 votes)

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[#], Sin[#]} &[Pi - (ArcCot[1])]},
  Polygon @ {{0, ...
```

- asked by mathe (22 votes), answered by Bob Hanlon (17 votes)

=====
 ===== Can you answer these?
 =====

[FrobeniusSolve: how does it work?] <http://mathematica.stackexchange.com/questions/114308/frobeniussolve-how-does-it-work>

Can someone suggest any reference to read? I would like to understand how the algorithm works.

- asked by Mirko Aveta (3 votes)

[How to delete lines containing specific values from a matrix?] <http://mathematica.stackexchange.com/questions/114709/how-to-delete-lines-containing-specific-values-from-a-matrix>

I am doing some numerical computations and a few iterations return values that are obviously incorrect (some numerical integration problem, I suppose). I have managed to set these values to zero but ...

- asked by Gabu (2 votes)

[ImageSize not working correctly with Placed directive] <http://mathematica.stackexchange.com/questions/114580/imagesize-not-working-correctly-with-placed-directive>

It seems that having Placed inside Plot breaks the ImageSize specification:

```
cm = 72/2.54;
plt =
  LogLogPlot[Exp[x], {x, 1, 3},
    ImageSize -> 12 cm,
    AspectRatio -> 0.73,
    Frame -> ...
```

- asked by leosenko (2 votes)

5.35 Tuesday, May 3, 2016

=====

Top new questions this week:

=====

[Find duplicates in list of InfiniteLine] <http://mathematica.stackexchange.com/questions/114046/find-duplicates-in-list-of-infiniteline>

MMA 10 introduced a new function, which can be very convenient: InfiniteLine.

Of course, two infinite lines can be described by different arguments: for example InfiniteLine[0,0,1,0] and ...

- asked by anderstood (14 votes), answered by kglr (12 votes)

[Is there any harm or benefit to Removing unneeded private symbols in packages?] <http://mathematica.stackexchange.com/questions/114106/is-there-any-harm-or-benefit-to-removing-unneeded-private-symbols-in-packages>

One of the things I noticed is that in typical medium-to-large sized packages, a huge number of symbols are created in the myPackagePrivate context. You can see a list of them by running

? ...

- asked by QuantumDot (12 votes), answered by R. M. (18 votes)

[Can Mathematica solve functional equations with nested variable?] <http://mathematica.stackexchange.com/questions/114210/can-mathematica-solve-functional-equations-with-nested-variable>

First, inline free form input can solve these equations:

But it seems no native Mathematica function can solve these, there is even an error page for equations of this form (nestdv).

Now my ...

- asked by happy fish (10 votes)

[How to describe the convex hull of a set of points as an implicit region for optimization?] <http://mathematica.stackexchange.com/questions/113689/how-to-describe-the-convex-hull-of-a-set-of-points-as-an-implicit-region-for-opt>

Last edit: 2016-05-03

A.G.'s answer was the one helped me the most, see explanation at the end of this question.

Original question

In Mathematica you can create out of a set of points in 2D and 3D ...

- asked by Mauricio Lobos (10 votes), answered by A.G. (2 votes)

[NDEigensystem returns incorrect eigenvalues for 2D coulomb problem, eigenfunctions contain discontinuity] <http://mathematica.stackexchange.com/questions/113898/ndeigensystem-returns-incorrect-eigenvalues-for-2d-coulomb-problem-eigenfunctio>

I posted a similar question a short time ago regarding the 3D Coulomb problem. Jens' excellent answer to this thread allowed me to obtain the correct eigenvalues and eigenenergies for that system.

I ...

- asked by Matthew Brunetti (10 votes), answered by Jens (12 votes)

[RandomInteger: speed with long lists] <http://mathematica.stackexchange.com/questions/114047/randominteger-speed-with-long-lists>

I noticed an interesting effect with RandomInteger when looking at the time to create 10^8 random integers. The following code lines all take about 0.5 seconds on a i7 Windows 64bit Laptop:

...

- asked by Eisbar (9 votes), answered by Daniel Lichtblau (8 votes)

[Creating Saveable->False notebooks] <http://mathematica.stackexchange.com/questions/113858/creating-saveable-false-notebooks>

Bug introduced in 10.3 or earlier and persisting through 10.4.1

Reproduced on Windows 7, 10

I'm having difficulties with programmatic creation of non saveable notebooks on Windows with V10.4.1.

...

- asked by Kuba (9 votes), answered by Kuba (7 votes)

=====
 Greatest hits from previous weeks: =====

[How to make use of Associations?] <http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (109 votes), answered by Leonid Shifrin (127 votes)

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by Dr. belisarius (308 votes), answered by Michael E2 (177 votes)

=====
 Can you answer these?
 =====

[Integrate producing bad result] <http://mathematica.stackexchange.com/questions/113791/integrate-producing-bad-result>

I noticed a bug in Mathematica. It computes incorrectly a definite integral

```
Integrate[y* Sqrt[(11^2 - y^2) (12^2 - y^2)]/(a^2 - y^2), {y, 0, 11},
  Assumptions -> {l2 > a > l1 > 0}]
```

and ...

- asked by user1765636 (3 votes)

[FindPeaks error " Expecting an image or graphics instead of"] <http://mathematica.stackexchange.com/questions/113884/findpeaks-error-expecting-an-image-or-graphics-instead-of>

I'm running Mathematica 10.3.1.0 on windows 7 Professional Sp.1 when I try to use FindPeaks I keep getting the following error, even when trying the example in the documentation.

I have done the ...

- asked by Phymonkey (2 votes)

[How can I set notebook's options without opening it?] <http://mathematica.stackexchange.com/questions/113816/how-can-i-set-notebooks-options-without-opening-it>

At present moment, to batch apply a change in a set of notebook I use a "brute force", rough, method:

```
(* simple example *)
setBackgroundBlue[notebookFileName_] := Module[
  {tempNb},
  tempNb = ...
```

- asked by mitochondrial (3 votes)

5.36 Tuesday, April 26, 2016

=====

Top new questions this week:

=====

[Writing a word with straight lines] <http://mathematica.stackexchange.com/questions/113403/writing-a-word-with-straight-lines>

Here is an interesting way to write a word: (it is from a poster for the International Museum Day 2006; I believe it even won an award at an international design competition)

by Boris Ljubcic. ...

- asked by VividD (59 votes), answered by Martin Buttner (54 votes)

[Numerical inverse Laplace-Hankel transform for a highly oscillatory function] <http://mathematica.stackexchange.com/questions/113240/numerical-inverse-laplace-hankel-transform-for-a-highly-oscillatory-function>

When trying to reproduce the result of this paper about numerical solution of Lamb's problem, I encountered the double integral (to be more precise, the 0-order inverse Hankel-Laplace transform) of a ...

- asked by xzczd (11 votes)

[Fitting Stradivari's scroll] <http://mathematica.stackexchange.com/questions/113273/fitting-stradivaris-scroll>

How can I find the simplest curve that gives me a scroll like this?

This is where I am at the moment and doing it by hand is becoming more and more cumbersome.

First, take a drawing of the scroll ...

- asked by tsuresuregusa (11 votes), answered by niki (13 votes)

[NDEigensystem cannot solve numerically the 3D Coulomb problem, while DSolve returns the right answer] <http://mathematica.stackexchange.com/questions/113520/ndeigensystem-cannot-solve-numerically-the-3d-coulomb-problem-while-dsolve-retu>

After having derived by hand the eigenvalues and eigenfunctions for the 3D and 2D hydrogen atom, I want to solve the systems numerically using Mathematica. I need to do this because my next step is to ...

- asked by Matthew Brunetti (9 votes), answered by user21 (4 votes)

[Make the moon's 3D gif] <http://mathematica.stackexchange.com/questions/113217/make-the-moons-3d-gif>

How do I make the following gif

I tried:

```
moon = Import[
  "https://upload.wikimedia.org/wikipedia/commons/f/f0/Full_Moon_as_Seen_From_Denmark.jpg"]
```

```
{r, g, b} = ColorSeparate[ImageResize[moon, ...]]
```

- asked by vito (9 votes), answered by Kuba (13 votes)

[How to generate this structure of a list without 'While' and the like?] <http://mathematica.stackexchange.com/questions/113307/how-to-generate-this-structure-of-a-list-without-while-and-the-like>

I need to create a list that holds, for given integer d , the elements $1, \dots, d, d + 2, \dots, 2d, 2d + 3, \dots, 3d, 3d + 4, \dots, d^2$ where ... is just denoting increment by 1 until the next written ...

- asked by Lukas (8 votes), answered by ciao (3 votes)

[Join a list with 6, 6, 2 dimensions with a list 6, 6 dimensions] <http://mathematica.stackexchange.com/questions/113630/join-a-list-with-6-6-2-dimensions-with-a-list-6-6-dimensions>

```
listA = {{a1, a2, a3, a4, a5, a6},
{b1, b2, b3, b4, b5, b6},
{c1, c2, c3, c4, c5, c6},
{d1, d2, d3, d4, d5, d6},
{e1, e2, e3, e4, e5, e6},
{f1, f2, f3, f4, f5, f6}}
```

```
listB = {{n1, p1}, {n2, p2}, ...
```

- asked by SPIL (7 votes), answered by Kuba (6 votes)

=====
 Greatest hits from previous weeks: =====

[How to plot an ellipse?] <http://mathematica.stackexchange.com/questions/20100/how-to-plot-an-ellipse>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using `Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]` but I'm getting some errors. Is there something wrong ...

- asked by Sriram (5 votes), answered by Jens (15 votes)

[Multivariable Taylor expansion does not work as expected] <http://mathematica.stackexchange.com/questions/15023/multivariable-taylor-expansion-does-not-work-as-expected>

The basic multivariable Taylor expansion formula around a point is as follows:

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla)f(\mathbf{r}) + \frac{1}{2!}(\mathbf{a} \cdot \dots$$

- asked by matheorem (24 votes), answered by Jens (29 votes)

=====
 Can you answer these?
 =====

[JournalArticle does not react on the PointSize option] <http://mathematica.stackexchange.com/questions/113547/journalarticle-does-not-react-on-the-pointsize-option>

The Default StyleSheet recognizes the PointSize option for ListPlot:

```
ListPlot[Table[Table[{i, j*i}, {i, 1, 10}], {j, 1, 3}],
PlotStyle -&gt; {{Red, PointSize[0.1]}, {Blue, PointSize[0.05]}}, ...
```

- asked by Alexei Boulbitch (2 votes)

[How to trace the stylesheet directives responsible for the selected text's appearance?] <http://mathematica.stackexchange.com/questions/113495/how-to-trace-the-stylesheet-directives-responsible-for-the-selected-texts-appea>

By way of example, in a typical Mathematica interactive session, one sees text content as shown below:

Three different text styles can be seen in this figure: input, output, and the style for the ...

- asked by kjo (5 votes)

[How do I get my ZWO ASI120MM astro-camera to work in MMA?] <http://mathematica.stackexchange.com/questions/113481/how-do-i-get-my-zwo-asi120mm-astro-camera-to-work-in-mma>

I am using Windows 10 + MMA 10.4.1. I bought a ZWO ASI120MM astro camera which I want to use as a guiding camera during astrophotography. From this site (<http://astronomy-imaging-camera.com/software/>) ...

- asked by Max (2 votes)

5.37 Tuesday, April 19, 2016

=====

Top new questions this week:

=====

[How to make this beautiful animation] <http://mathematica.stackexchange.com/questions/112700/how-to-make-this-beautiful-animation>

How to make an animation of following gif in Mathematica?

Edit: The animation shown above was created by Charlie Deck in processing.

And how to make 3D analog?

I tried first few steps

line = ...

- asked by vito (36 votes), answered by C. E. (38 votes)

[Can you plot pure function without specifying variable?] <http://mathematica.stackexchange.com/questions/112478/can-you-plot-pure-function-without-specifying-variable>

Given a pure function, e.g. `f=Sin[#]&` it is possible to plot it with introducing an arbitrary local variable, e.g.,

```
Plot[f[x],x,0,1]
```

However, the introduction of a variable `x` seems ...

- asked by JeffDror (15 votes), answered by Jens (12 votes)

[Vizualization of percolation paths] <http://mathematica.stackexchange.com/questions/112878/vizualization-of-percolation-paths>

I did a simple demonstration to illustrate the percolation theory for my students. The content is a conductive square network possessing electrodes at its top and bottom edges. Some randomly chosen ...

- asked by Alexei Boulbitch (13 votes), answered by Kuba (8 votes)

[How to access FEM shape functions] <http://mathematica.stackexchange.com/questions/112907/how-to-access-fem-shape-functions>

A couple of days ago I asked here about surface meshes and plotting on surfaces.

Now I have another question: How can I access the surface or boundary element shape functions?

I would like to ...

- asked by AxelF (9 votes), answered by user21 (7 votes)

[Finding peaks of curve with small values] <http://mathematica.stackexchange.com/questions/112993/finding-peaks-of-curve-with-small-values>

I have 2d data of which I want to find the peaks.

```
data &lt;&lt; "http://pastebin.com/raw/EQFz1KFn";
peaks = FindPeaks[data[[All, 2]], 0, 0, -Infinity] // N
```

The magnitudes of the found peaks are ...

- asked by mrz (8 votes), answered by JasonB (11 votes)

[Is there research about the Mathematica programming paradigm?] <http://mathematica.stackexchange.com/questions/112920/is-there-research-about-the-mathematica-programming-paradigm>

There seem to be lots of papers discussing the functional programming paradigm terminology for Haskell, such as monad, category theory, lambda calculus, *morphism, etc. People study concepts and ...

- asked by Eric (8 votes)

[Constructing a graph from a distance matrix] <http://mathematica.stackexchange.com/questions/112745/constructing-a-graph-from-a-distance-matrix>

I have a set S of n 2-dimensional points. We can compute a distance matrix (Euclidean distance) for S using say this answer. I wish to form an n -vertex graph having the points S as vertices, ...

- asked by Juho (8 votes), answered by Martin Buttner (9 votes)

==== Greatest hits from previous weeks: =====

[Labeling individual curves in Mathematica] <http://mathematica.stackexchange.com/questions/4444/labeling-individual-curves-in-mathematica>

I need to create a plot for export and inclusion in a report. Is there a better way to label curves than PlotLegends? From what I've read and my personal experience, PlotLegends is pretty bad.

Is ...

- asked by Tianxiang Xiong (42 votes), answered by Artes (36 votes)

[What is the best Mathematica tutorial for young people?] <http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people>

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (43 votes), answered by Vitaliy Kaurov (23 votes)

=====
 ===== Can you answer these?
 =====

[Possible reduced GUI performance in 10.4] <http://mathematica.stackexchange.com/questions/112526/possible-reduced-gui-performance-in-10-4>

I have observed significantly reduced performance in GUI in Mathematica v10.4. This is especially visible in autocomplete feature delays. This is very evident when I turn some power saving features ...

- asked by leosenko (3 votes)

[Why does Eigenvalues work for a matrix $\{M\}$ but not $\{\{M\}\}$?] <http://mathematica.stackexchange.com/questions/112619/why-does-eigenvalues-work-for-a-matrix-m-but-not-m>

Suppose I have a matrix

$\{\{1, 2\}, \{3, 4\}\}$

which I'll call mat. In a blur of human error, I computed the eigenvalues of mat with an extra set of curly braces surrounding it. To my surprise, this ...

- asked by user170231 (3 votes)

[Calculate the ESP Grid based on Density Grid] <http://mathematica.stackexchange.com/questions/112872/calculate-the-esp-grid-based-on-density-grid>

I want to build a fast way to convert a density grid file into a grid file of the respective electrostatic potential (ESP; also known as MEP, the molecular electrostatic potential).

This ...

- asked by pH13 - Yet another Philipp (3 votes)

5.38 Tuesday, April 12, 2016

=====

Top new questions this week:

=====

[How to model wooden joints with mathematica's FEM?] <http://mathematica.stackexchange.com/questions/111960/how-to-model-wooden-joints-with-mathematicas-fem>

This is a dovetail joint:

and I'd like to see the stresses and deformation on the joint. I haven't seen any modeling of disconnected regions with FEM, only connected regions, so I'm curious if you ...

- asked by tsuresuregusa (16 votes), answered by user21 (6 votes) _____

[Possible Bug in ArrayMesh] <http://mathematica.stackexchange.com/questions/111945/possible-bug-in-arraymesh>

Suppose we have the following array from which we intend to create an ArrayMesh:

```
arr = {{{1, 1, 1}, {1, 0, 1}, {1, 1, 0}}, {{1, 1, 1}, {0, 1, 1}, {1, 1, 0}}, {{0, 1, 0}, {0, 1, 1}, {0, 0, 1}}};
```

...

- asked by RunnyKine (15 votes), answered by ilian (9 votes)

[How to draw all paths from (1,1) to (n,n) by move (+1, 0) or (0, +1)?] <http://mathematica.stackexchange.com/questions/112395/how-to-draw-all-paths-from-1-1-to-n-n-by-move-1-0-or-0-1>

Now I can draw some grid:

But what I want(I'm sorry for the weird line. I have no image processing software in my mac...):

Please notice:

```
f(1, 1) = f(2, 1) = f(3, 1) = 1
f(1, 1) = f(1, 2) = ...
```

- asked by Sayakiss (14 votes), answered by wxffles (14 votes)

[All the food WolframAlpha knows about] <http://mathematica.stackexchange.com/questions/112104/all-the-food-wolframalpha-knows-about>

I want to plot some nutritional values and do some computation with it.

Is there an analogue of `CountryData[]` to get a list of all the foods for which WA has information?

- asked by Andrea Di Biagio (12 votes), answered by C. E. (12 votes)

[`RegionNearest` and neighborhoods] <http://mathematica.stackexchange.com/questions/112264/regionnearest-and-neighborhoods>

In this previous question we see that `RegionNearest` isn't quite as 'capable' as `Nearest` for some things.

Similarly, I need to be able to find a given neighborhood of points on a `MeshRegion`. With ...

- asked by flip (11 votes), answered by Simon Woods (10 votes)

[How do I extract a matrix of only positive numbers given a set of assumptions?] <http://mathematica.stackexchange.com/questions/111989/how-do-i-extract-a-matrix-of-only-positive-numbers-given-a-set-of-assumptions>

I want to divide a matrix:

```
mat = {{a, 0, -b}, {d, a, 0}, {0, 0, -a}}
```

with the following assumptions:

```
a >= 0, b >= 0, d >= 0
```

Into two matrices, one containing the positive elements, and one ...

- asked by Luis Fernando (11 votes), answered by b.gatessucks (14 votes)

[How to type text with an underbrace underneath it like: $\underbrace{g\dots g}_n$?] <http://mathematica.stackexchange.com/questions/111970/how-to-type-text-with-an-underbrace-underneath-it-like-underbraceg-g-n-t>

I want to use the underbrace "esc u esc" but have it placed underneath text. Like

$$\underbrace{g\dots g}_n$$

in a mathematica text cell. Is it possible? Thanks

- asked by Craig (11 votes), answered by JasonB (16 votes)

=====
Greatest hits from previous weeks: =====

[How to plot an ellipse?] <http://mathematica.stackexchange.com/questions/20100/how-to-plot-an-ellipse>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using
`Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]`

but I'm getting some errors. Is there something wrong ...

- asked by Sriram (5 votes), answered by Jens (15 votes)

[How to manipulate 2D plots?] <http://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots>

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by Istvan Zachar (94 votes), answered by Istvan Zachar (105 votes)

=====
Can you answer these? =====

[Possible Bug in LinearSolveFunction with Sparse Vectors] <http://mathematica.stackexchange.com/questions/112313/possible-bug-in-linearsolvefunction-with-sparse-vectors>

Bug introduced in 5.0 and persists through 10.4

LinearSolveFunction is new in 5.0

Consider the following set of equations and corresponding variables:

`eqns1 = {2 x == 2 - 4 y, 3 y == 4 z, 2 z + 4 ...`

- asked by RunnyKine (8 votes)

[Why FoldList 5 times faster than Apply for matrix multiplication?] <http://mathematica.stackexchange.com/questions/112125/why-foldlist-5-times-faster-than-apply-for-matrix-multiplication>

Consider this list of 2×2 matrices:

`list=RandomReal[{-2,2},{500,2,2}];`

Now compare timings of Apply and FoldList for matrix multiplication:

```
t1=FoldList[Dot,list];//AbsoluteTiming
(* 0.000324, ...
```

- asked by Lukas (6 votes)

[Generating OpenCL C code] <http://mathematica.stackexchange.com/questions/112127/generating-opencl-c-code>

I'm trying to make an interactive complex function plotter using OpenCl. So far I can only plot functions that I hardcode into the kernel by hand. I'd like to be able to use ComplexExpand@#&f@(x + ...

- asked by ra91 (6 votes)

5.39 Tuesday, April 5, 2016

=====

Top new questions this week:

=====

[Rounding the Corners of a Shape] <http://mathematica.stackexchange.com/questions/111479/rounding-the-corners-of-a-shape>

I was wondering whether there is an option in Mathematica that enables me to smooth the corners of a shape. The example I want to start with is the pentagon.

This can be crudely specified as

...

- asked by Mr S 100 (23 votes), answered by MarcoB (21 votes)

[Writing functions with "Method" options] <http://mathematica.stackexchange.com/questions/111666/writing-functions-with-method-options>

I'd like to implement several behaviors for a particular function using a Method option added to the function definition:

```
Options[saveData] = {Method -&gt; "Addition"};
saveData[vars_, opts : ...
```

- asked by dionys (14 votes), answered by Shutao TANG (7 votes)

[Interpretation of the result of ?@] <http://mathematica.stackexchange.com/questions/111394/interpretation-of-the-result-of>

This might be a very trivial question but as a beginner, I don't know the answer. I was exploring ? and after running a cell containing ?@, I got an interesting result:

However, I'm not sure about ...

- asked by MathX (13 votes), answered by m_goldberg (15 votes)

[Ticks in v10 - a bug or undocumented change] <http://mathematica.stackexchange.com/questions/111663/ticks-in-v10-a-bug-or-undocumented-change>

Bug introduced in 10.0 and fixed in 10.4

In this post @Heike provides this code:

```
ticksfun[xmin_, xmax_] :=
  Table[{10^i, Superscript[10, i]}, {i, Floor[Log10[xmin]],
    Ceiling[Log10[xmax]]}]
```

...

- asked by leosenko (12 votes), answered by rcollyer (8 votes)

[Why is an empty list not tested by VectorQ?] <http://mathematica.stackexchange.com/questions/111438/why-is-an-empty-list-not-tested-by-vectorq>

I am a bit amazed by this behavior of VectorQ[expr, test]:

```
VectorQ[ {}, NumberQ ]
```

```
True
```

It seems that the test itself is never applied and thus does not matter, so NumericQ or OddQ for ...

- asked by gwr (11 votes), answered by Szabolcs (16 votes)

[Matrix indexed by one number] <http://mathematica.stackexchange.com/questions/111631/matrix-indexed-by-one-number>

I'm trying to find a generic way (for arbitrary dimensions) to create a matrix like so

```
a[1] a[2]
```

a[3] a[4]

i.e where it is indexed by one number, instead of say Array[a, 2, 2] which gives

...

- asked by Henrik (10 votes), answered by Szabolcs (14 votes)

[ErrorListPlot ignores some exact data points] <http://mathematica.stackexchange.com/questions/111436/errorlistplot-ignores-some-exact-data-points>

Possible bug? Or am I missing something / expecting too much?

Forgive the seemingly obscure data points but they're where I've noticed a problem.

Needs["ErrorBarPlots`"]

```
data = {
  {{(10 Pi)/8, 1}, ...
```

- asked by Quantum_Oli (9 votes)

==== Greatest hits from previous weeks: =====

[Generate two random numbers with constraints] <http://mathematica.stackexchange.com/questions/97424/generate-two-random-numbers-with-constraints>

I want to generate two random numbers, p and q , between 0.5 and 1.

They are connected by the constraint $1/(2q) > p$.

How do I generate p and q ?

- asked by Chandan Datta (25 votes), answered by JasonB (11 votes)

[Multivariable Taylor expansion does not work as expected] <http://mathematica.stackexchange.com/questions/15023/multivariable-taylor-expansion-does-not-work-as-expected>

The basic multivariable Taylor expansion formula around a point is as follows:

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla)f(\mathbf{r}) + \frac{1}{2!}(\mathbf{a} \cdot \nabla)^2 f(\mathbf{r}) + \dots$$

- asked by matheorem (24 votes), answered by Jens (29 votes)

==== Can you answer these? =====

[Numerical Optimal Control] <http://mathematica.stackexchange.com/questions/111375/numerical-optimal-control>

It seems that most practical optimal control problems are only able to be solved numerically using a non-linear programming approach. As such, I was hoping to tackle the following optimal control ...

- asked by user7388 (3 votes)

[How to define a custom 3D graphics primitive in Mathematica?] <http://mathematica.stackexchange.com/questions/111403/how-to-define-a-custom-3d-graphics-primitive-in-mathematica>

There are lots of basic graphics primitive in Mathematica such as 2D- `caseLine[]`, `Circle[]` and 3D case `Cylinder[]`, `BSplineSurface[]`, etc.

In general, they own the following usage if memory serves:

...

- asked by Shutao TANG (5 votes)

[Can Mathematica reliably determine the equality of any two constructible numbers?] <http://mathematica.stackexchange.com/questions/111615/can-mathematica-reliably-determine-the-equality-of-any-two-constructible-numbers>

A constructible number is any number which can be expressed with only natural numbers and the operators $+$, $-$, \times , $/$, $\sqrt{\quad}$ (square root only). Is Mathematica's `Simplify` or `FullSimplify` ...

- asked by Martin Buttner (3 votes)

5.40 Tuesday, March 29, 2016

=====
 Top new questions this week:
 =====

[Is it possible to draw this figure using Mathematica?] <http://mathematica.stackexchange.com/questions/110848/is-it-possible-to-draw-this-figure-using-mathematica>

The figure is

See the how-to video or a speeded-up GIF.

I believe it should be possible to draw this figure programmatically using some Random function, but I'm rather new to Mathematica, so I ...

- asked by AccidentalFourierTransform (42 votes), answered by M.R. (65 votes)

[Is there a simple strategy to determine whether a point is inside a boundary?] <http://mathematica.stackexchange.com/questions/111114/is-there-a-simple-strategy-to-determine-whether-a-point-is-inside-a-boundary>

For an ellipse $E(\theta)$, which owns the parametric equation as follows:

$$\begin{cases} x = a \sin \theta + b \cos \theta + c \\ y = d \sin \theta + e \cos \theta + f \end{cases}$$

Now, I have a ...

- asked by Shutao TANG (17 votes), answered by RunnyKine (19 votes)

[How to divide the wine into two equal portions] <http://mathematica.stackexchange.com/questions/111250/how-to-divide-the-wine-into-two-equal-portions>

There is a 8-liter bottle full of wine. There are two empty bottles that have capacity 5-liters and 3-liters. How can these three bottles be used to separate the wine into two 4-liter portions?

...

- asked by yode (14 votes), answered by Simon Woods (21 votes)

[solve this probability problem symbolically] <http://mathematica.stackexchange.com/questions/110789/solve-this-probability-problem-symbolically>

Consider a unit square, Pick two points P and Q uniformly at random inside the square, What is the probability that $|PQ| > 1$?

I tried solve this problem

...

- asked by mathe (11 votes), answered by ubpdqn (9 votes)

[Radial distribution function] <http://mathematica.stackexchange.com/questions/110743/radial-distribution-function>

I have tried to rewrite my old IDL code to calculate the radial correlation function for a regular 2D crystal structure.

The theory behind this function is given here: ...

- asked by mrz (10 votes), answered by RunnyKine (11 votes)

[How to plot GDPs in this way?] <http://mathematica.stackexchange.com/questions/110901/how-to-plot-gdps-in-this-way>

Actually the current answer is very wonderful. The bouns just for someone can complete this question.

I found this interesting plot of how the relationship between the GDPs of different countries has ...

- asked by yode (10 votes), answered by C. E. (13 votes)

[Interesting Progression of ParametricRegion: Bug?] <http://mathematica.stackexchange.com/questions/110791/interesting-progression-of-parametricregion-bug>

Consider the following ParametricRegion from an answer to this question:

```
region = ParametricRegion[{{(1 + r - 12 r^2 + 4 r^3)/(2 r - 2),
  z Sqrt[(4 r^2)/(r - 1)^2 (r - r^2 (r - 3)^2)]},
  2 ...
```

- asked by RunnyKine (10 votes)

==== Greatest hits from previous weeks: =====

[How do I clear all user defined symbols?] <http://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation

-> Quit kernel and firing a new one up?

- asked by niklasfi (41 votes), answered by Artes (34 votes)

[How to create word clouds?] <http://mathematica.stackexchange.com/questions/2334/how-to-create-word-clouds>

Word clouds are rather useless fancy and visually appealing plots, where words are plotted with different sizes according to their frequency in a corpus. Many applications exist out there (Wordle, ...

- asked by Istvan Zachar (126 votes), answered by Heike (105 votes)

=====
 ===== Can you answer these?
 =====

[Overlay Inside a Grid/Column/Row Not Working] <http://mathematica.stackexchange.com/questions/110836/overlay-inside-a-grid-column-row-not-working>

Here is a microscopy image of some cells I want to make measurements on with Mathematica:

In order to make some measurements of cells in a microscopy image I have written a simple dynamic overlay ...

- asked by user13999 (3 votes)

[WeightedAdjacencyMatrix does not complete for Connected Graph] <http://mathematica.stackexchange.com/questions/111007/weightedadjacencymatrix-does-not-complete-for-connected-graph>

Please see code snippet below - I have a weighted, connected graph that models a software process using a DiscreteMarkovProcess. I set some of the edge weights to zero to "turn off" some of the ...

- asked by Chris Ruhl (3 votes)

[Counting automorphisms that preserve a group action] <http://mathematica.stackexchange.com/questions/111102/counting-automorphisms-that-preserve-a-group-action>

Note: the math, I believe, is not the problem here. The issue is not that I get the wrong answer, just that my code does not terminate. So, if you do not feel comfortable with the problem below, I do ...

- asked by Gerald (5 votes)

5.41 Tuesday, March 22, 2016

=====

Top new questions this week:

=====

[General techniques for creating complex animations] <http://mathematica.stackexchange.com/questions/110190/general-techniques-for-creating-complex-animations>

I love good animations of abstract concepts, and when I try to create them myself, I prefer doing so in code to make sure they are exact (and because some things are just way too fiddly to do by ...

- asked by Martin Buttner (23 votes), answered by LLIAMnYP (6 votes)

[Is there a numerical method/built-in to calculate the boundary of a set of graphs?] <http://mathematica.stackexchange.com/questions/110236/is-there-a-numerical-method-built-in-to-calculate-the-boundary-of-a-set-of-graph>

Recently, I encountered a geometry problem in my work. For a curve-family that owns the following parametric equation:

$$E(t, \theta) = \begin{pmatrix} x_E(t, \theta) \\ y_E(t, \theta) \end{pmatrix}$$

...

- asked by Shutao TANG (13 votes), answered by RunnyKine (8 votes)

[Creating 3D dice] <http://mathematica.stackexchange.com/questions/110295/creating-3d-dice>

How to create an image of a 3D die from the 2D images?

There is an example in the Documentation Center

I tried

but it doesn't work.

- asked by vito (13 votes), answered by Martin Buttner (20 votes)

[Regression /Bug in DelaunayMesh from 10.3.1 to 10.4] <http://mathematica.stackexchange.com/questions/110598/regression-bug-in-delaunaymesh-from-10-3-1-to-10-4>

In answering this question, I realized the OP and I were obtaining different results from the `alphaShapes2D` code. This question was updated with additional point sets, but when I tried to use my ...

- asked by RunnyKine (12 votes)

[Handling Kernel quit] <http://mathematica.stackexchange.com/questions/110162/handling-kernel-quit>

One can use `$Epilog` to do something when the Kernel is quit or put an `end.m` file next to the `init.m`.

For Wolfram System sessions, `$Epilog` is conventionally defined to read in a file named `end.m`.

...

- asked by Kuba (12 votes), answered by Mr.Wizard (7 votes)

[What is the closest star to Earth other than the sun?] <http://mathematica.stackexchange.com/questions/110559/what-is-the-closest-star-to-earth-other-than-the-sun>

How to find the Sun's nearest neighbor star using Mathematica? I tried

but it didn't work

- asked by vito (10 votes), answered by Zviovich (26 votes)

[Find the Panda - Dudolf panda puzzle] <http://mathematica.stackexchange.com/questions/110497/find-the-panda-dudolf-panda-puzzle>

I recently find this puzzle where you have to find the panda from a group of snowmen. Having a horrible eyesight I have to take help of mathematica to find it.

I start with assumption that all ...

- asked by Sumit (10 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to make use of Associations?] <http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (105 votes), answered by Leonid Shifrin (125 votes)

[Mathematica 10.0.x freezes in Initializing kernels] <http://mathematica.stackexchange.com/questions/92931/mathematica-10-0-x-freezes-in-initializing-kernels>

Bug caused by paclet update and fixed by paclet update.

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't ...

- asked by mitcheljh (67 votes), answered by ilian (84 votes)

==== Can you answer these?
====

[SiegelTheta gives misleading message when the dimensions don't match] <http://mathematica.stackexchange.com/questions/110500/siegeltheta-gives-misleading-message-when-the-dimensions-dont-match>

Bug introduced in 6.0 and persisting through 10.4

SiegelTheta is new in 6.0

In order to test the SiegelTheta function, I wanted to evaluate it for $s = 0$ when ...

- asked by Semiclassical (3 votes)

[How do I invert a function with two arguments?] <http://mathematica.stackexchange.com/questions/110146/how-do-i-invert-a-function-with-two-arguments>

I begin with a function defined by

```
c[u_, mH_]
```

I won't go into details because it comes from countless lines of partial differential equations, boundary conditions and perturbations. But suffice to ...

- asked by Ash Arsenault (2 votes)

[Cell format for usage statements] <http://mathematica.stackexchange.com/questions/110199/cell-format-for-usage-statements>

The myFunc::usage statement is intended to be a simple summary of the symbol and its arguments. However, many users like myself opt out of using Workbench and prefer to maximize use of the Notebook ...

- asked by Robert (2 votes)

5.42 Tuesday, March 15, 2016

=====

Top new questions this week:

=====

[General strategies to write big code in Mathematica?] <http://mathematica.stackexchange.com/questions/109888/general-strategies-to-write-big-code-in-mathematica>

I think after six months of exposure to Mathematica and the Wolfram Language I am fairly OK with writing short codes and snippets. However, what are some general strategies to use in order to write ...

- asked by Ali Hashmi (47 votes), answered by Leonid Shifrin (45 votes)

[How to make the digits of Pi go around in a spiral like this?] <http://mathematica.stackexchange.com/questions/109982/how-to-make-the-digits-of-%cf%80-go-around-in-a-spiral-like-this>

Here is a start.

```
MapIndexed[Text[Reverse[First[RealDigits[Pi, 10, 252]]][[Tr@#2]], #]&,
  Table[{t Cos[t], t Sin[t]}, {t, 0, 16Pi, 0.2}]]//Graphics
```

- asked by mathe (32 votes), answered by Martin Buttner (40 votes)

[Guidelines for planning custom GUI in Mathematica] <http://mathematica.stackexchange.com/questions/109525/guidelines-for-planning-custom-gui-in-mathematica>

Intro

Usually I don't have to care (it hurts my brain though) about misaligned details, additional/missing pixels. But currently I'm participating in a project where the design matters and I have to ...

- asked by Kuba (27 votes)

[Wrong labelling of contours with ListContourPlot] <http://mathematica.stackexchange.com/questions/109778/wrong-labelling-of-contours-with-listcontourplot>

Bug introduced in 9.0 or earlier and persisting through 10.4

Consider this example:

```
dat = Table[Re[Sqrt[1 - x^2 - y^2]], {x, -1.1, 1.1, 0.01}, {y, -1.1, 1.1, 0.01}];
```

Now pay special attention to ...

- asked by Szabolcs (16 votes), answered by Szabolcs (10 votes)

[Fit image of mountain to gaussian] <http://mathematica.stackexchange.com/questions/109946/fit-image-of-mountain-to-gaussian>

I want to detect the edges of an image of a mountain and then fit that to a gaussian.

I am unsure about how to only get the mountain edge, rather than every single edge in the image.

How do I ...

- asked by olliepower (13 votes), answered by Dr. belisarius (13 votes)

[What is a printer's point?] <http://mathematica.stackexchange.com/questions/109813/what-is-a-printers-point>

According to the documentation it is a basic unit for size spec. WindowSize and ImageSize says:

I think all the statements below are correct yet I would like to know for sure:

Is this the same ...

- asked by Kuba (12 votes), answered by Silvia (5 votes)

[A weird issue with Interval[\$MaxNumber]] <http://mathematica.stackexchange.com/questions/109597/a-weird-issue-with-intervalmaxnumber>

From the Interval documentation:

For approximate machine- or arbitrary-precision numbers x , `Interval[x]` yields an interval reflecting the uncertainty in x .

`$Version`

`(* 10.4.0 for Microsoft ...`

- asked by Vladimir Reshetnikov (12 votes), answered by The Vee (3 votes)

=====
Greatest hits from previous weeks: =====

[What is the best Mathematica tutorial for young people?] <http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people>

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (43 votes), answered by Vitaliy Kaurov (23 votes)

[Is Mathematica worth it for me?] <http://mathematica.stackexchange.com/questions/100072/is-mathematica-worth-it-for-me>

I'm 13 years old and in 7th grade. I'm currently in Algebra 1, and I have fallen in love with both math and programming.

When I came upon Mathematica, it was awesome. My two favorite things fused ...

- asked by TreFox (59 votes), answered by Pillsy (43 votes)

=====
Can you answer these? =====

[Building a classifier for images] <http://mathematica.stackexchange.com/questions/109484/building-a-classifier-for-images>

I tried to build a classifier for some images that I have with the following code:

```
class1 = Import /@
  FileNames["*",
    "location1"];

```

```
class2 = Import /@
  FileNames["*",
    "location2"];

```


...

- asked by soandos (2 votes)

[AppearanceRules on multipage Web Form] <http://mathematica.stackexchange.com/questions/109887/appearancecerules-on-multipage-web-form>

I'm attempting to make a web survey using FormFunction. To list the questions I am using AppearanceRules to give each page an individual title. I can't find any documentation in regards to ...

- asked by Alex Krotz (4 votes)

[Function output] <http://mathematica.stackexchange.com/questions/109714/function-output>

I would like a function that computes Cartesian product of two sets $z=(\text{Tuples}\{\#1,\#2\})$, and computes the number of elements in this set `(list) Length@z` which have a x elements in $\#1$ and y elements in ...

- asked by Gelios (2 votes)

5.43 Tuesday, March 8, 2016

=====

Top new questions this week:

=====

[How to design CloudObjects with reasonable CloudCredit costs] <http://mathematica.stackexchange.com/questions/109259/how-to-design-cloudobjects-with-reasonable-cloudcredit-costs>

Note: I originally thought to post this as a non-answer/extended comment to this question; however I feared that I would end up hijacking the original question. It is likely a duplicate with the ...

- asked by bobthechemist (17 votes)

[How to merge two screenshots into one image?] <http://mathematica.stackexchange.com/questions/109196/how-to-merge-two-screenshots-into-one-image>

I have two screenshots:

For a long screenshot picture I usually use PhotoShop to combine both images:

How do I use Mathematica to make an automated program to do this? This is my current ...

- asked by yode (13 votes), answered by Arnoud Buzing (13 votes)

[Current (e.g., ca. 2016 / MMA 10 / WP 4+) best practices for embedding interactive content in WordPress?] [http://mathematica.stackexchange.com/questions/109231/current-e-g-ca-2016-mma-10-wp-4-best-practices-for-embedding-interactive](http://mathematica.stackexchange.com/questions/109231/current-e-g-ca-2016-mma-10-wp-4-best-practices-for-embedding-interactive-content-in-wordpress)

My strategy, in the past, has been to embed interactive CDF files into my WordPress blog for student's to use (Much like the Wolfram Demonstration Project).

As many know 1) the 'Plug in' ...

- asked by flip (11 votes)

[Getting data from FRED] <http://mathematica.stackexchange.com/questions/109203/getting-data-from-fred>

Mathematica V10.4 supports a service for connection to FRED. If you create a connection with

```
fred = ServiceConnect["FederalReserveEconomicData"]
```

(you need to have created a login id to be ...

- asked by George Wolfe (11 votes), answered by George Wolfe (4 votes)

[Do[]s and Don't[]s when teaching Mathematica in undergraduate courses] <http://mathematica.stackexchange.com/questions/108987/do-s-and-dont-s-when-teaching-mathematica-in-undergraduate-courses>

Question motivated by some horrific homework-related posts that I don't dare to link:

What are the top Do's and Dont's when teaching Mathematica to undergrads?

I don't ask for the design of a ...

- asked by Dr. belisarius (11 votes), answered by bobthechemist (10 votes)

[Primes Race (Mathematica Efficiency)] <http://mathematica.stackexchange.com/questions/108798/primes-race-mathematica-efficiency>

I am currently working with a paper that deals with this concept of Prime Races. You essentially create a large list of prime numbers and then split that list into two teams. You are assigned to ...

- asked by Dops (10 votes), answered by bbgodfrey (6 votes)

[Gathering of list] <http://mathematica.stackexchange.com/questions/109104/gathering-of-list>

Problem statement

The following challenge was recently posted to the J language programming forum by Skip Cave <http://jsoftware.com/pipermail/programming/2016-March/044561.html>

"The animal ...

- asked by murray (9 votes), answered by J. M. (13 votes)

==== Greatest hits from previous weeks: =====

[Find eigen energies of time-independent Schrodinger equation] <http://mathematica.stackexchange.com/questions/32293/find-eigen-energies-of-time-independent-schr%C3%B6dinger-equation>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrodinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = E_i \psi$$

where U(x) is some potential and E_i is the ...

- asked by xslittlegrass (35 votes), answered by Jens (38 votes)

[How to plot an ellipse?] <http://mathematica.stackexchange.com/questions/20100/how-to-plot-an-ellipse>

I'm new to Mathematica, and I'm finding it difficult to plot an ellipse. I tried using

`Plot[(x/5)^2 + (y/3)^2 == 1, {x, -5, 5}, {y, -3, 3}]`

but I'm getting some errors. Is there something wrong ...

- asked by Sriram (4 votes), answered by Jens (12 votes)

==== Can you answer these? =====

[Mimicking Console and Output Matlab/Rstudio-Style Environment in Mathematica?] <http://mathematica.stackexchange.com/questions/109179/mimicking-console-and-output-matlab-rstudio-style-environment-in-mathematica>

I am trying to crudely approximate the RStudio or Matlab Workspace environment in Mathematica by having a specific notebook function as the "console notebook" where I execute commands and another ...

- asked by user13999 (6 votes)

[What is the equivalent of \$ModuleNumber for DynamicModule] <http://mathematica.stackexchange.com/questions/108850/what-is-the-equivalent-of-module-number-for-dynamicmodule>

Mathematica provides access to \$ModuleNumber which can be enormously useful.

Unfortunately I can't find the equivalent for DynamicModule.

I know such a parameter must exist for two reasons:

First, ...

- asked by MB1965 (8 votes)

[Why this expression is not evaluated correctly?] <http://mathematica.stackexchange.com/questions/109310/why-this-expression-is-not-evaluated-correctly>

Look at the following code:

```
f[kx_, ky_] := -1*(Exp[I*kx] + 2*Exp[-I*kx/2]*Cos[Sqrt[3]*ky/2]);
H = {{1, f[kx, ky]}, {Conjugate[f[kx, ky]], -1}};
D[Norm[Normalize[Eigensystem[H][[2]][[1]]]], kx] /. {kx ...
```

- asked by Chong Wang (1 vote)

5.44 Tuesday, March 1, 2016

=====

Top new questions this week:

=====

[Typoglycemia text manipulation] <http://mathematica.stackexchange.com/questions/108563/typoglycemia-text-manipulation>

I was just reading the article: <https://en.wikipedia.org/wiki/Typoglycemia>

"... readers can understand the meaning of words in a sentence even when the interior letters of each word are scrambled ...

- asked by mrz (20 votes), answered by J. M. (15 votes)

[Version inconsistency with optional arguments: what if the default value doesn't match the pattern?] <http://mathematica.stackexchange.com/questions/108636/version-inconsistency-with-optional-arguments-what-if-the-default-value-doesnt>

I just came across some weird behaviour. Take this function definition:

```
ClearAll[f]
f[vs_List : All] := "match"
```

The default value of vs is All. Now think about what f[] should return. Should it ...

- asked by Szabolcs (18 votes), answered by Mr.Wizard (12 votes)

[Reproducing a ranking function that behaves like Excel's RANK] <http://mathematica.stackexchange.com/questions/108309/reproducing-a-ranking-function-that-behaves-like-excels-rank>

I tried to find a function or expression in Mathematica that produces the same output as the RANK function in Excel (see its description here), but unfortunately I could not find an existing one.

For ...

- asked by M.Basel (14 votes), answered by TomD (18 votes)

[Given a large binary matrix, find the largest submatrix containing non-zero elements] <http://mathematica.stackexchange.com/questions/108299/given-a-large-binary-matrix-find-the-largest-submatrix-containing-non-zero-elements>

I'm looking for a way to reduce a binary matrix containing zeros at some positions into a matrix that contains no zeros by deleting rows and columns of the original matrix until only non-zero values ...

- asked by tavr (13 votes), answered by unlikely (4 votes)

[Generating a list of numbers that are not multiples of 4] <http://mathematica.stackexchange.com/questions/108502/generating-a-list-of-numbers-that-are-not-multiples-of-4>

I want to write simple code that will list all numbers from 1 to n that are not multiples of 4.

And in this case I consider that

```
n=100
```

```
For[i = 1, i &lt;= n, i++, If[Mod[i, 4] != 0, ...
```

- asked by Mariam (12 votes), answered by Mr.Wizard (15 votes)

[Can Mathematica convert a RegularExpression into a StringExpression or vice-versa?] <http://mathematica.stackexchange.com/questions/108481/can-mathematica-convert-a-regular-expression-into-a-string-expression-or-vice-versa>

I know that Mathematica can perform string comparison using either StringExpression or RegularExpression. Although regular expressions are more common, I feel that the Mathematica StringExpressions ...

- asked by Denis Cousineau (12 votes)

[What options and settings can be used to create print quality typeset documents with Mathematica?] <http://mathematica.stackexchange.com/questions/108553/what-options-and-settings-can-be-used-to-create-print-quality-typeset-documents>

If I am proficient on dedicated typesetting software (e.g. LaTeX) it makes sense to use that for typesetting but if I am not how can I use Mathematica to create good quality documents.

The question ...

- asked by Mike Honeychurch (11 votes), answered by Mike Honeychurch (17 votes)

==== Greatest hits from previous weeks: =====

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (97 votes), answered by ArgentoSapiens (92 votes)

[Generating a Sierpinski carpet] <http://mathematica.stackexchange.com/questions/22052/generating-a-sierpinski-carpet>

I am trying to draw a Sierpinski_carpet. I have code that works, but I think there is a more elegant way to do than my way. Maybe I could use Tuples or Permutations or some similar function to ...

- asked by chyaong (43 votes), answered by Mr.Wizard (66 votes)

=====
 ===== Can you answer these?
 =====

[Prepending a sequence with zeros gives 'FindGeneratingFunction' hard time] <http://mathematica.stackexchange.com/questions/108451/prepending-a-sequence-with-zeros-gives-findgeneratingfunction-hard-time>

Asking for

```
FindGeneratingFunction[{1, 3, 11, 43, 171, 683, 2731, 10923, 43691, 174763}, t]
```

gives the answer (namely $(1 - 2t)/(1 - 5t + 4t^2)$) almost immediately. However if I prepend zeros in ...

- asked by (3 votes)

[Obtaining a Previously Constructed Function as Desired Output] <http://mathematica.stackexchange.com/questions/108373/obtaining-a-previously-constructed-function-as-desired-output>

I was playing around with some Generalized Trigonometric Functions defined as follows;

$$w[n_] := E^{(2*\[Pi]*I)/n}$$

$$Ncos[n_, x_] := Expand[(1/n)*Sum[E^{(x*w[2 n])^{(2 k + 1)}}, {k, 0, n - 1}]]$$

...

- asked by Eleven-Eleven (3 votes)

[The implementation of FunctionRange] <http://mathematica.stackexchange.com/questions/108308/the-implementation-of-functionrange>

How exactly does the `FunctionRange` work? What kind of algorithm does it use? I looked it up in the manual but it doesn't provide any references or even a name of the algorithm.

It also accepts a ...

- asked by pwl (3 votes)

5.45 Tuesday, February 23, 2016

=====

Top new questions this week:

=====

[++ is dangerous for C programmers] <http://mathematica.stackexchange.com/questions/107619/is-dangerous-for-c-programmers>

I noticed this fact, that may be misleading for programmers used to C language.

In Mathematica, if you have a function `f[]` and an array `v`, and you write

```
v[[ f[] ]]
```

the function `f` is called ...

- asked by Giovanni Resta (30 votes), answered by Mr.Wizard (23 votes)

[Apply multiple functions to same list] <http://mathematica.stackexchange.com/questions/107721/apply-multiple-functions-to-same-list>

I'd like to get the Min, Max, Median, Mean, etc. for the same list. For now I'm doing the following:

```
y = {1, 2, 3, 4, 5, 6, 7};
```

```
Map[{Max[#] , Min[#] , Median[#] , Mean[#]} & , y, {0}]
```

It seems ...

- asked by Mitchell Kaplan (15 votes), answered by Bob Hanlon (18 votes)

[How do I delete all items that occur more than once?] <http://mathematica.stackexchange.com/questions/107483/how-do-i-delete-all-items-that-occur-more-than-once>

`DeleteDuplicates` works fine but leaves a single copy of the duplicated item.

I need to remove all items that occur more than once i.e.

```
{{1,2},{1,2},{3,4}} -> {3,4}. There must be a one-liner.
```


- asked by Boris (12 votes), answered by Leonid Shifrin (16 votes)

[Puzzle with Mathematica] <http://mathematica.stackexchange.com/questions/107859/puzzle-with-mathematica>

Hello everyone, This is a puzzle I got from someone via social media. Basically, we need to fill up the boxes with the numbers 1-9 (no repetitions) that fit the multiplication and addition ...

- asked by iFikr (11 votes), answered by unlikely (13 votes)

[Finite Element Method and ElementMeshInterpolation issue in v10.3] <http://mathematica.stackexchange.com/questions/107668/finite-element-method-and-elementmeshinterpolation-issue-in-v10-3>

I recently installed Mathematica v10.3 and checked a project I was working on few months ago under Mathematica v10.1.

In this project I solve a PDE with NDSolve and Finite Element Method over a 2D ...

- asked by unlikely (10 votes), answered by Jason B (8 votes)

[Efficient way to make subsets of list with placeholders] <http://mathematica.stackexchange.com/questions/107517/efficient-way-to-make-subsets-of-list-with-placeholders>

I have an arbitrary list of unique elements:

```
lst = {a, b, c, d}
```

Documentation allows finding subsets with same number of elements, say 2:

```
Subsets[lst, {2}]
```

```
(* {{a, b}, {a, c}, {a, d}, {b, c}, {b, d}, {c, d}}
```

- asked by garej (10 votes), answered by Dr. belisarius (10 votes)

[Double Sum Involving Condition] <http://mathematica.stackexchange.com/questions/107652/double-sum-involving-condition>

I would like to compute the dimensions of some small free nilpotent Lie algebras. However, I am totally new to this and I could not figure out how to write the double sum which gives the dimension of ...

- asked by Can Hatipoglu (9 votes), answered by J. M. (13 votes)

==== Greatest hits from previous weeks: =====

[Why round to even integers?] <http://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers>

According to the Mathematica help: Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

```
Round[0.5, 1.5, 2.5, 3.5, 4.5]
```

gives

```
0, 2, 2, 4, 4
```

What's the ...

- asked by wxffles (42 votes), answered by Per Alexandersson (27 votes)

[Calling Correct Function for Plotting DiracDelta] <http://mathematica.stackexchange.com/questions/3506/calling-correct-function-for-plotting-diracdelt>
a

I am wondering what is the correct function in Mathematica to plot the true impulse function, better known as the DiracDelta[] function. When using this inside of a function or just the function ...

- asked by night owl (11 votes), answered by Heike (13 votes)

==== Can you answer these?
====

[How many clusters does DominantColors return?] <http://mathematica.stackexchange.com/questions/107842/how-many-clusters-does-dominantcolors-return>

Is there any documentation on how it automatically chooses the number of colors - does it use X-means?

- asked by M.R. (3 votes)

[Using GNU Make to compile MathLink program automatically removes a file] <http://mathematica.stackexchange.com/questions/107863/using-gnu-make-to-compile-mathlink-program-automatically-removes-a-file>

It's possible that this question belongs on Stackoverflow; however, the Mathematica context may be important so I'm asking here first.

I am working on a project to interact with sensors connected to ...

- asked by bobthechemist (1 vote)

[Why does Solve work in v9.0.1 but not in v10.3.1] <http://mathematica.stackexchange.com/questions/107585/why-does-solve-work-in-v9-0-1-but-not-in-v10-3-1>

I want to solve the following DE

$$P' = k(M - P)P, P[0] = 53.08, P[50] = 23.192, P[100] = 76.212.$$

The Mathematica command is

```
sol1 = DSolve[P'[t] == k (M - P[t]) P[t], P[t], t]
```

```
P[t_] = sol1[[1,1,2]]
```

```
sol2 ...
```

- asked by xpaul (4 votes)

5.46 Tuesday, February 16, 2016

=====

Top new questions this week:

=====

[Why does Mathematica report that $\int_1^\infty \frac{\sin(\sqrt{x})}{\sqrt{x}} dx = 2 \cos(1)$?] <http://mathematica.stackexchange.com/questions/106162/why-does-mathematica-report-that-int-1-infty-frac-sin-sqrtx-sqrtxdx>

Bug introduced in 7.0 or earlier and persisting through 10.3.1 or later

Mathematica 10 gives the following very odd result,

```
Integrate[Sin[Sqrt[x]]/Sqrt[x], {x, 1, Infinity}]
(* 2 Cos[1] *)
```

which seems ...

- asked by JEM (30 votes)

[How was Mathematica built?] <http://mathematica.stackexchange.com/questions/106020/how-was-mathematica-built>

I've been wondering this for a while now: How was Mathematica built?

Is it written in Haskell? C++? I'd love to get a taste of the wizardry behind this incredible software.

- asked by Chet (14 votes), answered by Sjoerd C. de Vries (19 votes)

[How can one manually change the rule ordering] <http://mathematica.stackexchange.com/questions/106068/how-can-one-manually-change-the-rule-ordering>

I have a function which has some general behaviour, but that should act on some specific kinds of objects in some other way. I know that Mathematica is supposed to automatically order the rules so ...

- asked by Lior Blech (14 votes), answered by Mr.Wizard (15 votes)

[What governs images resizing in the FrontEnd environment] <http://mathematica.stackexchange.com/questions/106204/what-governs-images-resizing-in-the-frontend-environment>

What is responsible for the middle Row images' size? And why single image row is different?

```
{#, Row[{-#, #}], Row[{-#}] & @ RandomImage[1, {100, 100}]
```

I know I can prevent that with mapping ...

- asked by Kuba (13 votes), answered by Jason B (9 votes)

[How to report a bug in Mathematica] <http://mathematica.stackexchange.com/questions/106227/how-to-report-a-bug-in-mathematica>

I found two bugs in Mathematica (10.3 and 10.1) and I need to report it. Is there any tools to do that or section on Wolfram website?

- asked by Developer2000 (12 votes), answered by Szabolcs (17 votes)

[Reproduce image effect in Mathematica] <http://mathematica.stackexchange.com/questions/106165/reproduce-image-effect-in-mathematica>

How do I create the "dotifying" effect below in Mathematica?

I have tried to use Rasterize first to get the image pixelated, but how do I get the disc/circle pattern then?

```
image := ...
```

- asked by macurie (12 votes), answered by rhermans (17 votes)

[How to make a CahnHilliard model GIF] <http://mathematica.stackexchange.com/questions/106333/how-to-make-a-cahn-hilliard-model-gif>

The question derived from @Jason B 's answer.I wanna make it but don't how to do. But we can get some rule about the GIF

The change of the total pixel is very small.

`imagelist = ...`

- asked by yode (10 votes), answered by MarcoB (15 votes)

==== Greatest hits from previous weeks: =====

[Generating visually pleasing circle packs] <http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (89 votes), answered by level1807 (53 votes)

[How to calculate contour integrals with Mathematica?] <http://mathematica.stackexchange.com/questions/34073/how-to-calculate-contour-integrals-with-mathematica>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

- asked by user64494 (20 votes), answered by Artes (39 votes)

==== Can you answer these? =====

[Extracting control points from BezierFunction] <http://mathematica.stackexchange.com/questions/107435/extracting-control-points-from-bezierfunction>

given a Bezier surface, is there a simple way to express g_{12} (from the First fundamental form) again in Bezier form?

More precisely, I have control points and a Bezier function f :

`cps = {{0, ...`

- asked by Osmihran (1 vote)

[Order of importing data from files] <http://mathematica.stackexchange.com/questions/106296/order-of-importing-data-from-files>

I have many text files numbered from 1 to 1 million in numerical order. Within each text file is 5 columns of data (TAB spaced) with many rows. I effectively want to take the minimum value from each ...

- asked by David (1 vote)

[WolframScript Unix - Script Parameters on Raspberry Pi] <http://mathematica.stackexchange.com/questions/107436/wolframscript-unix-script-parameters-on-raspberry-pi>

I'm currently trying to run a script with 2 parameters which gets called via a BASH script. The script runs fine however the list of passed parameters, `$ScriptCommandLine`, always stays empty.

...

- asked by TheCheatsrichter (2 votes)

5.47 Tuesday, February 9, 2016

=====
 Top new questions this week:
 =====

[Partitioning a list when the cumulative sum exceeds 1] <http://mathematica.stackexchange.com/questions/105792/partitioning-a-list-when-the-cumulative-sum-exceeds-1>

I have a long list of say 1 million Uniform(0,1) random numbers, such as:

```
dat = {0.71, 0.685, 0.16, 0.82, 0.73, 0.44, 0.89, 0.02, 0.47, 0.65}
```

I want to partition this list whenever the cumulative ...

- asked by wolfies (15 votes), answered by Mr.Wizard (18 votes)

[How to extract a contour line (or a region) from a ContourPlot?] <http://mathematica.stackexchange.com/questions/105750/how-to-extract-a-contour-line-or-a-region-from-a-contourplot>

Given a ContourPlot with a set of contours, say, this:

is it possible to get the contours separating domains with the different colors in the form of lists?

For example, how to extract the ...

- asked by Alexei Boulbitch (12 votes), answered by Michael E2 (7 votes)

[Using NDSolve to find particle trajectory] <http://mathematica.stackexchange.com/questions/105859/using-ndsolve-to-find-particle-trajectory>

I'm trying to simulate a particle in an electric and magnetic fields, but numerically instead of analytically. This is basically solving the equation

$$q \cdot (p' \times B) + q \cdot E = m$$

- asked by triplebig (11 votes), answered by Sjoerd C. de Vries (11 votes)

[why MatchQ is fast and Replace slow?] <http://mathematica.stackexchange.com/questions/105626/why-matchq-is-fast-and-replace-slow>

Consider a large expression, say a polynomial with 25 terms

```
expr=Product[Unique["a"],{i,1,25}];
```

to which you apply the following replacement rule:

```
rep={x_ f[y_] /; FreeQ[x, y] -&gt; 0};
```

Since f ...

- asked by M. Tissier (11 votes), answered by Mr.Wizard (13 votes)

[Use of some functions of the Developer Utility Package, such as BesselSimplify] <http://mathematica.stackexchange.com/questions/105643/use-of-some-functions-of-the-developer-utility-package-such-as-besselsimplify>

The Developer Utilities Package contains several functions that look interesting:

BesselSimplify

GammaSimplify

PolyGammaSimplify

ZetaSimplify

PolyLogSimplify

and TrigToRadicals

However for each ...

- asked by Alexei Boulbitch (10 votes), answered by Jens (5 votes)

[Plot of $\sin(x^x)$ is missing from $x = 143$] <http://mathematica.stackexchange.com/questions/105774/plot-of-sinxx-is-missing-from-x-143>

When plotting the graph of $\sin(x^x)$ I noticed that there is no plot from about $x = 143$. I don't suppose there is a purely mathematical explanation for this?

So, why is there no graph in ...

- asked by Imre Vegh (10 votes), answered by MarcoB (22 votes)

[Brackets around each item in matrix] <http://mathematica.stackexchange.com/questions/105864/brackets-around-each-item-in-matrix>

I have a matrix where every item in the matrix has its own brackets that I do not want. How can I remove the brackets around each item?

- asked by C. Tamaro (8 votes), answered by John Conor Cosnett (9 votes)

=====
 Greatest hits from previous weeks: =====

[How do I clear all user defined symbols?] <http://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

- asked by niklasfi (37 votes), answered by Artes (31 votes)

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[#], Sin[#]} &[Pi - (ArcCot[1])]},
  Polygon @ {{0, ...
```

- asked by mathe (22 votes), answered by Bob Hanlon (17 votes)

=====
 ===== Can you answer these?
 =====

[Weird behaviour for a vector InterpolatingFunction inside an NDSolve] <http://mathematica.stackexchange.com/questions/105594/weird-behaviour-for-a-vector-interpolatingfunction-inside-an-ndsolve>

I have run into some weird behaviour on the part of NDSolve which I find pretty bizarre and which I would like to understand better.

Suppose, for the sake of argument, that I want to study the ODE ...

- asked by Emilio Pisanty (3 votes)

[NDeigensystem returns error due to mesh discretization when calculating vibrations of a cantilever] <http://mathematica.stackexchange.com/questions/105840/ndeigensystem-returns-error-due-to-mesh-discretization-when-calculating-vibratio>

There was an transcription error in the code I provided in a previous post:

NDeigensystem returns complex non-hermitian error for the calculation of vibrations of a cantilever

This resulted in it ...

- asked by user37299 (2 votes)

[WhenEvent and Resetting of Variable in PDE when operation succeeds] <http://mathematica.stackexchange.com/questions/105781/whenevent-and-resetting-of-variable-in-pde-when-operation-succeeds>

I have had success in using WhenEvent to reset or change a variable within NDSolve with ordinary differential equations. My working, functioning MWE is:

```
Clear[usol, u, t, x, \[Lambda]]
usol = NDSolveValue[
  ...
```

- asked by drN (3 votes)

5.48 Tuesday, February 2, 2016

=====

Top new questions this week:

=====

[Exponential fitting - isn't actually a BUG there?] <http://mathematica.stackexchange.com/questions/105002/exponential-fitting-isnt-actually-a-bug-there>

There are many questions on this site about wrong exponential fitting in Mathematica but no one considers this well-known problem as a potential bug. Usually people suggest well-known workarounds ...

- asked by Alexey Popkov (20 votes), answered by Sjoerd C. de Vries (6 votes)

[Detecting components in timeseries] <http://mathematica.stackexchange.com/questions/104950/detecting-components-in-timeseries>

I'm looking at this sequence of values:

I'd like to detect the points where the center of the time-series shifts (around $x=1000$ and $x=2000$). Many of the transforms and smoothing methods I have ...

- asked by M.R. (17 votes), answered by blochwave (22 votes)

[Generating Tuples with restrictions] <http://mathematica.stackexchange.com/questions/105139/generating-tuples-with-restrictions>

I am interested in a certain subset of all tuples. Generating all with Tuples and then filtering is wasteful, and will "blow up" very quickly.

For a concrete example, let's say I want to find all ...

- asked by Kiro (13 votes), answered by Kuba (12 votes)

[Grid cuts my images] <http://mathematica.stackexchange.com/questions/105061/grid-cuts-my-images>

Bug introduced in V9.0 or earlier

and persisting through V10.3.1 or later

```
pic2 = ImageResize[
  ImageCrop@Rasterize@Graphics@Disk[],
```

```
{Automatic, 40}]
```

```
Grid[{{pic2}}]
```

This is just ...

- asked by Kuba (11 votes), answered by Coolwater (7 votes)

[Non Standard Eigenfunction Plots of the Laplacian Over the Unit Square] <http://mathematica.stackexchange.com/questions/105264/non-standard-eigenfunction-plots-of-the-laplacian-over-the-unit-square>

I have recently been plotting eigenfunctions of the laplacian over the unit square using the NDEigensystem command. However, I have noticed something in the plots which puzzles me.

Below is an image ...

- asked by Mr S 100 (11 votes), answered by Jens (12 votes)

[How to count the number of the tube] <http://mathematica.stackexchange.com/questions/105229/how-to-count-the-number-of-the-tube>

There is a picture Get the binary image

```
binimg = ColorSeparate[img][[2]] // Binarize[#, 0.25] & // Thinning
```

Visulize the result of regconization

```
lines = ImageLines[binimg, 0.074];
```

```
...
```

- asked by yode (11 votes), answered by niki (7 votes)

[Detecting X or O in a small image] <http://mathematica.stackexchange.com/questions/105327/detecting-x-or-o-in-a-small-image>

I am making a robot that plays Tic Tac Toe

Currently, I have code that will parse the board and separate it into an array of 9 images, each space on the board. How can I detect if the image ...

- asked by Jenny (10 votes), answered by John Conor Cosnett (17 votes)

=====
 ===== Greatest hits from previ-
 ous weeks: =====

[Is there a syntax for single-line comments for notebooks?] <http://mathematica.stackexchange.com/questions/1496/is-there-a-syntax-for-single-line-comments-for-notebooks>

I'm aware that I can use (* ... *) to comment out stuff in a notebook. Many languages have a syntax for single-line comments, such as

```
// in C, C++, Java, C#, ...
# in shell, Python, ...
```

For ...

- asked by Peeter Joot (37 votes), answered by Szabolcs (43 votes)

[Advice for Mathematica as Mathematician's Aid] <http://mathematica.stackexchange.com/questions/92686/advice-for-mathematica-as-mathematicians-aid>

I use Mathematica mainly as an aid in symbolic attacks on problems, usually intermediate or harder and often number theoretic. While Reduce, Simplify, et al. are remarkably powerful, they of course ...

- asked by CarlEdman (56 votes), answered by MarcoB (39 votes)

=====
 ===== Can you answer these?
 =====

[What are the time and space complexities of Classify/Predict?] <http://mathematica.stackexchange.com/questions/105366/what-are-the-time-and-space-complexities-of-classify-predict>

Does anyone have knowledge of the $O(n)$ time and space complexities for various model types supported by Classify[] and Predict[] during training and evaluation?

Here are a list of supported model ...

- asked by M.R. (4 votes)

[Finding eigenvalues in Mathematica: why so slow?] <http://mathematica.stackexchange.com/questions/105224/finding-eigenvalues-in-mathematica-why-so-slow>

I am trying to find the eigensystem of a large sparse real symmetric matrix, and I only need the lowest 40 or so eigenstates. The relevant code is as follows:

TheModel[V0_, V1_, V2_, index_, ...

- asked by Xiao (3 votes)

[Notebook created in cloud has odd errors in Mathematica 10.3.1] <http://mathematica.stackexchange.com/questions/105019/notebook-created-in-cloud-has-odd-errors-in-mathematica-10-3-1>

I've downloaded a notebook from develop.wolframcloud.com and opened it in 10.3.1 (running on Win 10). When I evaluate some cells I get syntax errors along the lines of...

Syntax::sntxf: "\"Clear[\" ...

- asked by Ymareth (2 votes)

5.49 Tuesday, January 26, 2016

=====

Top new questions this week:

=====

[List of Mathematica related acronyms and their real meaning] <http://mathematica.stackexchange.com/questions/104593/list-of-mathematica-related-acronyms-and-their-real-meaning>

A few years ago, Wolfram Inc. not only started to rename things around Mathematica, a lot of new technologies and frameworks were introduced as well. Now, we are left with a lot of acronyms and ...

- asked by halirutan (37 votes), answered by halirutan (38 votes)

[What would you ask Mathematica to do on a big system?] <http://mathematica.stackexchange.com/questions/104842/what-would-you-ask-mathematica-to-do-on-a-big-system>

Our hardware supplier has given us the opportunity to test Mathematica on a big Windows system. The specs will be 1 to 4 TB of working memory and 12 sockets with 18 cores each. I got 1 full week of ...

- asked by pvanbijnen (25 votes), answered by David G. Stork (9 votes)

[What algorithm do the Compress and Uncompress functions use?] <http://mathematica.stackexchange.com/questions/104660/what-algorithm-do-the-compress-and-uncompress-functions-use>

Compress and Uncompress are used internally by Mathematica to compress things like 3D data in notebook files - data that I'd like to read independently. Does anyone have any idea if the compression ...

- asked by Andy C. (12 votes), answered by Mark Adler (13 votes)

[Is there any predictor-corrector method in Mathematica for solving nonlinear system of algebraic equations?] <http://mathematica.stackexchange.com/questions/104578/is-there-any-predictor-corrector-method-in-mathematica-for-solving-nonlinear-sys>

The FindRoot Function in Mathematica can easily be used to solve systems of nonlinear algebraic equations. But, I want to solve a system of nonlinear equations with variations of some parameters.

...

- asked by hesam (12 votes), answered by Chris K (9 votes)

[How do I define a periodic region?] <http://mathematica.stackexchange.com/questions/104723/how-do-i-define-a-periodic-region>

I'm trying to create a region of "thick" grid-lines, like so

```
GRID = ImplicitRegion[ ((0 <= x <= 1 || 2 <= x <= 3 || 4 <= x <= 5 ||
  8 <= x <= 9) || (0 ...
```

- asked by Zorngo (12 votes), answered by Kuba (10 votes)

[Zoom in on a 2D graph] <http://mathematica.stackexchange.com/questions/104718/zoom-in-on-a-2d-graph>

I have seen many queries on zooming in on plots etc. But I haven't seen any regarding 2D graphs. For eg if I have a graph like

```
Graph[{1->2, 2->3, 3->1}].
```

It will create a graph. I have a ...

- asked by vikram reddy (10 votes), answered by Kuba (11 votes)

[Fitting a curve to an image object: not a superellipse, not an egg curve.. what else?] <http://mathematica.stackexchange.com/questions/104419/fitting-a-curve-to-an-image-object-not-a-superellipse-not-an-egg-curve-what>

I'm facing the problem of quantifying the morphology of objects with such a shape (nannoconids...

they are fossils).

One of the final goals is to produce a solid of revolution and compute ...

- asked by Stefano (9 votes), answered by niki (9 votes)

=====
Greatest hits from previous weeks: =====

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[#], Sin[#]} &[Pi - (ArcCot[1])]},
  Polygon @ {{0, ...
```

- asked by mathe (22 votes), answered by Bob Hanlon (17 votes)

[Advice for Mathematica as Mathematician's Aid] <http://mathematica.stackexchange.com/questions/92686/advice-for-mathematica-as-mathematicians-aid>

I use Mathematica mainly as an aid in symbolic attacks on problems, usually intermediate or harder and often number theoretic. While Reduce, Simplify, et al. are remarkably powerful, they of course ...

- asked by CarlEdman (56 votes), answered by MarcoB (39 votes)

=====
Can you answer these?
=====

[Way to make contour labels on SliceContourPlot3D?] <http://mathematica.stackexchange.com/questions/104590/way-to-make-contour-labels-on-slicecontourplot3d>

SliceContourPlot3D doesn't seem to come with the option of putting contour labels on the plots as far as I can see. I'm using the XStackedPlanes option. I don't see any information about how one might ...

- asked by Eli Morris (4 votes)

[Implementation of a matrix formula] <http://mathematica.stackexchange.com/questions/104463/implementation-of-a-matrix-formula>

For the Bezier surface, which owns the following matrix definition:

where, $B_{n,i}$ denotes Bernstein-basis.

```
vec1 = {B[0], ..., B[m]};
mat = {{P[0,0], ..., P[0,n]}, ..., {P[m,0], ..., P[m,n]}};
vec2= ...
```

- asked by Shutao TANG (2 votes)

[Can one preserve the appearance of the HorizontalGauge?] <http://mathematica.stackexchange.com/questions/104524/can-one-preserve-the-appearance-of-the-horizontalgauge>

I use sometimes the HorizontalGauge instead of a slider in Manipulateor instead of the ProgressIndicator. I find it very convenient, since it gives quantitative information on the status of the ...

- asked by Alexei Boulbitch (3 votes)

5.50 Tuesday, January 19, 2016

=====

Top new questions this week:

=====

[Partition a list based on specific elements? Grab the sublists beginning with a certain marker elements] <http://mathematica.stackexchange.com/questions/104153/partition-a-list-based-on-specific-elements-grab-the-sublists-beginning-with-a>

Say I have the list

```
{a}, {0, 2, 5}, {5, 4, 1}, {a}, {1, 1, 0}, {1, 4, 2},
{3, 3, 0}, {a}, {3, 2, 0}, {1, 4, 1}
```

I would like to make sublists of everything beginning with the a element till ...

- asked by Jason B (11 votes), answered by Kuba (14 votes)

[Why does Outer sometimes return a packed array, and sometimes not?] <http://mathematica.stackexchange.com/questions/104040/why-does-outer-sometimes-return-a-packed-array-and-sometimes-not>

For example

```
In[342] :=
test3 = Flatten[Outer[Plus, Range[1000], Range[1000]],
  1]; // AbsoluteTiming
```

```
Out[342]= {0.0198735, Null}
```

returns PackedArray (examined by Developer‘PackedArrayQ[test3] ...

- asked by matheorem (10 votes), answered by Mr.Wizard (7 votes)

[Interpolation function way off] <http://mathematica.stackexchange.com/questions/104037/interpolation-function-way-off>

I have a simple list of data points to which I would like to fit an interpolation function. However, the results given by Interpolation[] gives an oscillating function which is not warranted by the ...

- asked by Philo (9 votes), answered by Szabolcs (14 votes)

[How to deal with bad arguments when a function’s UpValues is a pure-function?] <http://mathematica.stackexchange.com/questions/103952/how-to-deal-with-bad-arguments-when-a-functions-upvalues-is-a-pure-function>

In practice, I needs to define the UpValues of a user-defined function. For instance, the operation of function like differential formula , expansion and so on.

Here, I will give a example that came ...

- asked by Shutao TANG (8 votes), answered by Mr.Wizard (2 votes)

[Using Solve to solve the equation $x^{1/3} = -1$] <http://mathematica.stackexchange.com/questions/104281/using-solve-to-solve-the-equation-x1-3-1>

I am curious why this command returned no answers:

```
Solve[x^(1/3) == -1, x]
```

Gives this output:

```
(* {} *)
```

I was able to get around the problem with this:

```
Solve[Surd[x, 3] == -1, x]
```

Which ...

- asked by David (8 votes), answered by Jens (13 votes)

[How do you convert RGBColor to an HTML-style string?] <http://mathematica.stackexchange.com/questions/103999/how-do-you-convert-rgbcolor-to-an-html-style-string>

If I run some color processing function, like:

```
Blend[RGBColor /@ {"#DC4E00", "#000000", "#822250", "#FCC11B"}]
```

I get back a RGBColor object:

```
RGBColor[0.5901960784313726, 0.29901960784313725, ...]
```

- asked by d8uv (8 votes), answered by d8uv (9 votes)

[ReplaceAll behavior change from 10.2 to 10.3] <http://mathematica.stackexchange.com/questions/104354/replaceall-behavior-change-from-10-2-to-10-3>

Executing:

```
replace[res_] := res /. {a_Integer, b_Integer} :> (a + b);
l1 = &lt;|"respID" -&gt; {1,2} , "key2" -&gt; &lt;|"key2" -&gt; {2, 1}|&gt;&gt;;
l2 = {"respID" -&gt; {1,2} , "key2" -&gt; ...
```

- asked by Murta (7 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start. I'm looking for a nice way to draw it.

```
Graphics[{EdgeForm[Black], White,
  Polygon @ {{0, 0}, {-1, 0},
    Sqrt[2] {Cos[#], Sin[#]} &[Pi - (ArcCot[1])]},
  Polygon @ {0, ...
```

- asked by mathe (22 votes), answered by Bob Hanlon (16 votes)

[Mathematica 10.0.x freezes in Initializing kernels] <http://mathematica.stackexchange.com/questions/92931/mathematica-10-0-x-freezes-in-initializing-kernels>

Bug caused by paclet update and fixed by paclet update.

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't ...

- asked by mitcheljh (67 votes), answered by ilian (84 votes)

==== Can you answer these?
====

[How to find and show a point value on the line?] <http://mathematica.stackexchange.com/questions/104384/how-to-find-and-show-a-point-value-on-the-line>

```
Manipulate[
  Module[{eqns, f},
```

```
eqns = {y'[x] ==
  aa3*y[x]^3 + aa2*y[x]^2 + aa1*y[x] + aa0[t] + bb[t]/y[x],
  y[0] == 15};
```

```
f = NDSolve[eqns, y, {x, 0, 1}][[1, 1, -1]];
```

```
Plot[f[x], {x, 0, ...
```

- asked by user37037 (1 vote)

[Is it possible for librarylink function to be Listable like that in Compile?] <http://mathematica.stackexchange.com/questions/104382/is-it-possible-for-librarylink-function-to-be-listable-like-that-in-compile>

We know in Compile, there is an Option RuntimeAttributes ; Listable which can let the compiled function easily explore the power of thread parallelization.

So is it possible for a librarylink ...

- asked by matheorem (2 votes)

[How could get all escape characters in Mathematica?] <http://mathematica.stackexchange.com/questions/104299/how-could-get-all-escape-characters-in-mathematica>

I am evaluating expression by using KernelLink.

But the kernel will be suspended endless when meets a invalid escape character. `a\abc, \[badEscape]` for example.

So I have to filter all the invalid ...

- asked by Michael (3 votes)

5.51 Tuesday, January 12, 2016

=====

Top new questions this week:

=====

[Why is SatisfiabilityCount faster than SatisfiableQ?] <http://mathematica.stackexchange.com/questions/103726/why-is-satisfiabilitycount-faster-than-satisfiableq>

Consider the following (large) Boolean expression, which arose in a SAT problem. (The expression is not satisfiable.)

```
bigExpr = Import["http://pastebin.com/raw/gEgGQ26S"];
```

On my system (Mathematica ...

- asked by David Zhang (13 votes), answered by Adam Strzebonski (16 votes)

[ReplaceAll with Associations instead of Rules] <http://mathematica.stackexchange.com/questions/103497/replaceall-with-associations-instead-of-rules>

I have just noticed that

```
x /. &lt;|x -&gt; 123|&gt;
```

evaluates to

123

In other words, the association seems to behave as a rule. I didn't see any example or reference to this behavior in the ...

- asked by Gustavo Delfino (13 votes), answered by Edmund (4 votes)

[Is it possible to Parallelize Select?] <http://mathematica.stackexchange.com/questions/103548/is-it-possible-to-parallelize-select>

Given a large list of elements, is it possible to improve Select by parallelizing?

An example: from a 10,000,000-element list of integers between 1 and 10, select all primes

```
rl = RandomInteger[10, ...
```

- asked by jjstankowicz (11 votes), answered by bbgodfrey (15 votes)

[how to enforce a symmetric solution with fem?] <http://mathematica.stackexchange.com/questions/103606/how-to-enforce-a-symmetric-solution-with-fem>

I'm solving the laplace equation in a domain with holes, and I need to compute the integral of the gradient on the boundary of these holes.

For that I define a mesh and solve the laplace equation ...

- asked by tsuresuregusa (10 votes), answered by user21 (5 votes)

[Best way to emulate MATLAB's bsxfun using Map and similar functions] <http://mathematica.stackexchange.com/questions/103527/best-way-to-emulate-matlabs-bsxfun-using-map-and-similar-functions>

Given a matrix, we want to subtract the mean of each column, from all entries in that column. So given this matrix:

```
(mat = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12) // MatrixForm
```

the mean ...

- asked by Nasser (10 votes), answered by Mike Honeychurch (11 votes)

[Order of evaluation - does Mathematica evaluate variables before or after substitution?] <http://mathematica.stackexchange.com/questions/103800/order-of-evaluation-does-mathematica-evaluate-variables-before-or-after-substitution>

Let's say I write

$$y = x^2;$$

$$x = 10;$$

$$z = y + y^2 + y^3$$

Does Mathematica internally evaluate y before or after substituting it into z ? I.e., does Mathematica internally evaluate this as

$$y = x^2 = \dots$$

- asked by tparker (9 votes), answered by Alexei Boulbitch (12 votes)

[How to "inform" successive ContourPlot calculations?] <http://mathematica.stackexchange.com/questions/103673/how-to-inform-successive-contourplot-calculations>

I need to draw some contour plots of very non-linear functions. As a simple example, take a Mandelbrot Set divergence contour near $z \approx i$. (Just to be clear, I'm not trying to write a ...

- asked by Jerry Guern (9 votes), answered by bbgodfrey (10 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to calculate contour integrals with Mathematica?] <http://mathematica.stackexchange.com/questions/34073/how-to-calculate-contour-integrals-with-mathematica>

How to calculate the integral of $\frac{1}{\sqrt{4z^2+4z+3}}$ over the unit circle counterclockwise for each branch of the integrand?

- asked by user64494 (20 votes), answered by Artes (39 votes)

[How do I remove grid from this photo?] <http://mathematica.stackexchange.com/questions/88494/how-do-i-remove-grid-from-this-photo>

I found this cat a month ago, and I'm not his owners' friend so the mosquito grid was the inevitable problem. I would like to post-process this photo to get rid of it, but I don't know exactly how ...

- asked by Nakilon (30 votes), answered by niki (49 votes)

=====
 ===== Can you answer these?
 =====

[Fitting data with unique variable per measurement] <http://mathematica.stackexchange.com/questions/103770/fitting-data-with-unique-variable-per-measurement>

Imagine we are in the following situation, we have a nonlinear system of functions f with coordinates x_i , and unknown parameters δ_i 's and t . Let this system be defined as,

...

- asked by user19218 (3 votes)

['ParallelTable' pending the MathKernel after execution] <http://mathematica.stackexchange.com/questions/103611/paralleltable-pending-the-mathkernel-after-execution>

I have done a ParallelTable computation in script mode. After execution, the output is fine and I've got all the data I needed. but the kernel seems pending, usually it should exit after they finished ...

- asked by buzhidao (2 votes)

[Call Magma in Mathematica] <http://mathematica.stackexchange.com/questions/103602/call-magma-in-mathematica>

I've written some code in Mathematica, related to some group theory questions I have. Subsequently, I found that part of the code could be significantly sped up if I could just call a routine in ...

- asked by Pace Nielsen (4 votes)

5.52 Tuesday, January 5, 2016

=====

Top new questions this week:

=====

[Optional throws error when called from a package. Workaround?] <http://mathematica.stackexchange.com/questions/103084/optional-throws-error-when-called-from-a-package-workaround>

Bug introduced in 8.0 or earlier and persisting through 10.3 or later.

Case number: 305932.

In the front-end notebook (Mathematica 9.0 and 10.2):

```
g[x: Optional[_ , default]] := x;
```

has no problems, ...

- asked by QuantumDot (10 votes), answered by jkuczm (11 votes)

[How to automatically have ContourLabels in middle of Contour lines if specific levels are not specified?] <http://mathematica.stackexchange.com/questions/103289/how-to-automatically-have-contourlabels-in-middle-of-contour-lines-if-specific-levels>

I looked at all the questions/answers relating to placement of ContourLabels but could not find an answer to this. Some of the answers before are based on user giving beforehand, the Contours levels ...

- asked by Nasser (8 votes), answered by Jens (10 votes)

[Generating assignments and transforming code inside Holding forms when generating code] <http://mathematica.stackexchange.com/questions/103263/generating-assignments-and-transforming-code-inside-holding-forms-when-generating-code>

I have been playing with slightly above trivial code manipulations in Mathematica. I thought Mathematica would be great for this kind of work because of rule replacement and expression manipulation, ...

- asked by Manuel Odendahl (7 votes), answered by Leonid Shifrin (9 votes)

[Overlay vs Show for plots?] <http://mathematica.stackexchange.com/questions/103073/overlay-vs-show-for-plots>

I am trying to understand the differences of Overlay and Show to combine two plots. A typical use case is to superpose a ListPlot of some data with a Plot of a curve to fit the data.

The following ...

- asked by becko (7 votes), answered by eldo (13 votes)

[What should I learn from DSolve working better with a named constant than a number in this case?] <http://mathematica.stackexchange.com/questions/103327/what-should-i-learn-from-dsolve-working-better-with-a-named-constant-than-a-number>

I have an equation

$$(r''(\phi)r(\phi) - r'(\phi)^2)(b + r(\phi)) = r(\phi)(r'(\phi)^2 + r(\phi)^2)$$

Here b and r are lengths, and ϕ is an angle (in radians, so ...

- asked by David Z (7 votes), answered by bbgodfrey (2 votes)

[W|A or Mathematica for CountryData?] <http://mathematica.stackexchange.com/questions/103302/wa-or-mathematica-for-countrydata>

Sometimes W|A gives you something ...

```
WolframAlpha["electricity production of the United States in 2007", "Result"]
```

... not available in the WDF

```
CountryData["UnitedStates", ...
```

- asked by Ronald Monson (7 votes), answered by Paco Jain (3 votes)

[How to implement JoinTo efficiently?] <http://mathematica.stackexchange.com/questions/103238/how-to-implement-jointo-efficiently>

AppendTo is not efficient so I'm not quite sure of the best way to implement its analogue for joining (e.g. in python this would be extend function). So how can this be improved:

ClearAll[JoinTo]; ...

- asked by M.R. (7 votes), answered by eldo (0 votes)

=====
Greatest hits from previous weeks: =====

[Find eigen energies of time-independent Schrodinger equation] <http://mathematica.stackexchange.com/questions/32293/find-eigen-energies-of-time-independent-schrodinger-equation>

I'm trying to get the eigenvalues of a one dimensional time-independent Schrodinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2\psi}{dx^2} + U(x) \psi = E_i \psi$$

where $U(x)$ is some potential and E_i is the ...

- asked by xslittlegrass (33 votes), answered by Jens (36 votes)

[How to create word clouds?] <http://mathematica.stackexchange.com/questions/2334/how-to-create-word-clouds>

Word clouds are rather useless fancy and visually appealing plots, where words are plotted with different sizes according to their frequency in a corpus. Many applications exist out there (Wordle, ...

- asked by Istvan Zachar (124 votes), answered by Heike (105 votes)

=====
Can you answer these?
=====

[How can I import from a usb webcam on the raspberry pi?] <http://mathematica.stackexchange.com/questions/103364/how-can-i-import-from-a-usb-webcam-on-the-raspberry-pi>

I'm trying to set up a raspberry pi as a webcam server and I need to import images into a mathematica notebook on the raspberry pi. I tried using `CurrentImage[]` just to test it but I got an error just ...

- asked by Tobias Nash (2 votes)

[How to change default font for all existing notebooks at once?] <http://mathematica.stackexchange.com/questions/103053/how-to-change-default-font-for-all-existing-notebooks-at-once>

By default, Mathematica 9 and 10 use Gill Sans MT fonts for headings of title/subtitle/-section/subsection/subsubsection. Unfortunately, Gill Sans MT fonts have no Cyrillic letters, so that all ...

- asked by Igor Kotelnikov (5 votes)

[VERY slow to solve a nonlinear equation involving matrix eigenvalues] <http://mathematica.stackexchange.com/questions/103282/very-slow-to-solve-a-nonlinear-equation-involving-matrix-eigenvalues>

I am trying to solve a problem similar to the following:

```
f[k_, a_] := (  
Matrix = {{0.05, (a*k)^2}, {(a*k)^2, -0.05}};
```

```
{eps, psi} = Eigensystem[Matrix];
```

```
{eps,psi} = {eps[[#]], psi[[#]]} &@
```

```
...
```

- asked by Xiao (2 votes)

CHAPTER 6

YEAR 2015

6.1 Tuesday, December 29, 2015

=====
Top new questions this week:
=====

[$\sum_{k=1}^{\infty} \lfloor \frac{5}{5^k} \rfloor$ giving wrong answer?] <http://mathematica.stackexchange.com/questions/102722/sum-k-1-infty-left-lfloor-frac55k-right-rfloor-giving-wrong-ans>

When I try to evaluate the following:

$$\sum_{k=1}^{\infty} \left\lfloor \frac{5}{5^k} \right\rfloor$$

using

```
Sum[Floor[5/5^k], {k, 1, \[Infinity]}
```

Mathematica provides an answer of 0 when it ...

- asked by 1110101001 (14 votes), answered by ttetrafon (-4 votes)

[How do I insert a calculated value into a text cell?] <http://mathematica.stackexchange.com/questions/102849/how-do-i-insert-a-calculated-value-into-a-text-cell>

Suppose in a notebook I've calculated the value of some expression and assigned it to a variable. How do I insert the value of that variable in a text cell without just typing in the value? That is, I ...

- asked by Robert B (10 votes), answered by eldo (3 votes)

[Prevent Plus from threading] <http://mathematica.stackexchange.com/questions/102721/prevent-plus-from-threading>

This is probably a very simple question, but I couldn't find a duplicate.

As everybody knows, $x, y + v$ gives $x + v, y + v$. But if I intend v to represent a vector, for example if I am going to ...

- asked by Rahul (10 votes), answered by JHM (5 votes)

[What kind of patterns in a list of rules would benefit from being Dispatched?] <http://mathematica.stackexchange.com/questions/102873/what-kind-of-patterns-in-a-list-of-rules-would-benefit-from-being-dispatched>

I have a long list of rules for manipulating expressions. They are of the form:

```
complexRules = {f[x_, y_]^2 :> (*something*),
                f[x_, y_] f[x_, z_] :> (*something*),
                ...
```

- asked by QuantumDot (9 votes), answered by Schopenhauer (7 votes)

[Revolution of Koch Snowflake] <http://mathematica.stackexchange.com/questions/102697/revolution-of-koch-snowflake>

How to plot shape which made from revolution of the Koch Snowflake?

I try to use `RevolutionPlot3D[f, {t, t1}]`, but I think there is no f for Koch Snowflake.

Sorry for my ...

- asked by vito (9 votes), answered by ubpdqn (11 votes)

[Reverse Polish Notation] <http://mathematica.stackexchange.com/questions/102976/reverse-polish-notation>

Is there a way to evaluate a string containing RPN in Mathematica?

SE thinks this question is too short, so let me expand on it. Do you know of any function, that provides the following ...

- asked by murphy (8 votes), answered by Mark Adler (4 votes)

[Bug? Completely wrong results from NSolve] <http://mathematica.stackexchange.com/questions/102724/bug-completely-wrong-results-from-nsolve>

The following code creates two polynomials q_1 and q_2 in variables c and p , then uses NSolve to find roots. But the polynomials don't evaluate to zero at those roots.

```
pp[n_] := If[n > 0, ...
```

- asked by Jerry Guern (8 votes), answered by Rom38 (6 votes)

==== Greatest hits from previous weeks: =====

[Advice for Mathematica as Mathematician's Aid] <http://mathematica.stackexchange.com/questions/92686/advice-for-mathematica-as-mathematicians-aid>

I use Mathematica mainly as an aid in symbolic attacks on problems, usually intermediate or harder and often number theoretic. While Reduce, Simplify, et al. are remarkably powerful, they of course ...

- asked by CarlEdman (55 votes), answered by MarcoB (39 votes)

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (386 votes), answered by faysou (354 votes)

==== Can you answer these? =====

[CDF Enterprise : Protection and licensing] <http://mathematica.stackexchange.com/questions/102650/cdf-enterprise-protection-and-licensing>

I am new to Mathematica but on top of that I am asked to create a CDF file that is IP protected (encrypted) and also licensed.

In this video they are giving the way to protect the code. At the end ...

- asked by Erdem (3 votes)

[Speedup ListCorrelation when using generalized correlation function] <http://mathematica.stackexchange.com/questions/102708/speedup-listcorrelation-when-using-generalized-correlation-function>

ImageCorrelation provides several general function that can be used to replace the default Dot function. For example, in the documentation of ImageCorrelation, there is an example using CosineDistance ...

- asked by xslittlegrass (1 vote)

[How can I define geographic regions and new entities?] <http://mathematica.stackexchange.com/questions/102948/how-can-i-define-geographic-regions-and-new-entities>

There are three functions (GeoListPlot, GeoGraphics and Entity) related to working with geographic regions but it is not clear from the documentation how to create new Entities or custom geographic ...

- asked by Tyler Durden (4 votes)

6.2 Tuesday, December 22, 2015

=====

Top new questions this week:

=====

[How to organically build up nested associations?] <http://mathematica.stackexchange.com/questions/102466/how-to-organically-build-up-nested-associations>

Suppose I want to construct an association of associations, such as a list of people with attributes:

```
peopleFacts=&lt;| alice-&gt; &lt;|age-&gt;29,shoeSize-&gt;7|&gt;, bob-&gt; ...
```

- asked by Jess Riedel (17 votes), answered by Kuba (14 votes)

[How to restart computation when kernels die?] <http://mathematica.stackexchange.com/questions/102268/how-to-restart-computation-when-kernels-die>

When an important process needs to be kept alive, there are monitoring tools to restart them if they die (e.g. god tasks in ruby), in my case I have an overnight scraping task that I need to have done ...

- asked by M.R. (15 votes), answered by Szabolcs (11 votes)

[If I have a very large Popup Menu list how can I make that searchable?] <http://mathematica.stackexchange.com/questions/102470/if-i-have-a-very-large-popup-menu-list-how-can-i-make-that-searchable>

Imagine that you have a PopupMenu's list that requires a lot of scrolling through the selections. Is there a way to create a control that will only display a subsection of the complete list?

- asked by Mike Honeychurch (14 votes), answered by Mike Honeychurch (14 votes)

[Bug in RegionMember?] <http://mathematica.stackexchange.com/questions/102439/bug-in-regionmember>

RegionMember (new in V10) appears to have a bug. For some polygons it finds points that are clearly outside to be "members" of the region. This depends on the shape of the polygon in a way that is ...

- asked by kukako-muka (14 votes)

[Which elements of a large array are part of a set?] <http://mathematica.stackexchange.com/questions/102212/which-elements-of-a-large-array-are-part-of-a-set>

I have a large integer packed array arr. My array is multidimensional, but for simplicity let's consider 1D arrays for now. ArrayReshape takes care of the rest.

I also have a set of integers (a ...

- asked by Szabolcs (14 votes), answered by Leonid Shifrin (11 votes)

[more numerically accurate inverse matrix] <http://mathematica.stackexchange.com/questions/102261/more-numerically-accurate-inverse-matrix>

I encountered the following matrix

```
mat = {{2,
        2.161209223472559' + 1.682941969615793' I}, {2.161209223472559' -
        1.682941969615793' I, 2}}
```

and `Inverse[mat]` will give

```
{{-0.57092 - ...
```

- asked by matheorem (12 votes), answered by Karsten 7. (11 votes)

[Stress calculations using finite elements] <http://mathematica.stackexchange.com/questions/102522/stress-calculations-using-finite-elements>

A standard engineering problem is to calculate stresses in a structure due to applied forces. With the inclusion of the finite element method in version 10 this question attempts to investigate how ...

- asked by Hugh (11 votes), answered by user21 (2 votes)

=====
Greatest hits from previous weeks: =====

[Upgrade to Windows 10] <http://mathematica.stackexchange.com/questions/89407/upgrade-to-windows-10>

Can users of Mathematica on Windows 7 or Windows 8/8.1 upgrade their computers to Windows 10 a process that began today? Does Mathematica work? Are all the settings, licenses, access to files and ...

- asked by Lubos Motl (38 votes), answered by RunnyKine (32 votes)

[How can I improve Mathematica's resolution on a macbook retina display?] <http://mathematica.stackexchange.com/questions/18419/how-can-i-improve-mathematicas-resolution-on-a-macbook-retina-display>

Mathematica 9.0 looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (39 votes), answered by programming_historian (20 votes)

=====
Can you answer these? =====

[How to avoid crashing with `ConformImages`] <http://mathematica.stackexchange.com/questions/102578/how-to-avoid-crashing-with-conformimages>

`ConformImages[]` is causing a kernel crash when applied to a list of 5k images. Is there any way to apply `ConformImages` on the list in batches or asynchronously to conserve memory?

Here's the ...

- asked by M.R. (2 votes)

[Fitting real and imaginary parts of a function] <http://mathematica.stackexchange.com/questions/102233/fitting-real-and-imaginary-parts-of-a-function>

I have an analytic form of a function

$$G[w_] = -I*z0*w/(1 + I*z0*w*a)$$

I know this function can be obtained (up to some overall normalization) from solving a differential equation numerically for ...

- asked by Physics Moron (3 votes)

[Reconstruct a 'Graph' from a picture] <http://mathematica.stackexchange.com/questions/102362/reconstruct-a-graph-from-a-picture>

Actually,I post a very similar question before this.How to generate a Graph from a picture of a graph

The Dr. belisarius's answer have accomplished it.But I find a limitation in that method:If the ...

- asked by yode (6 votes)

6.3 Tuesday, December 15, 2015

=====

Top new questions this week:

=====

[How can I use Kenneth Moreland's "Diverging Color Maps for Scientific Visualization" in plots?] <http://mathematica.stackexchange.com/questions/101625/how-can-i-use-kenneth-morelands-diverging-color-maps-for-scientific-visualizat>

I often want to plot two dimensional data that is centered around zero (for me, this is usually a 2D optical spectroscopy signal, but there are other cases), and the MATLAB "Jet" color scheme is ...

- asked by Jason B (21 votes), answered by Jason B (25 votes)

[Named patterns in Except] <http://mathematica.stackexchange.com/questions/101903/named-patterns-in-except>

Bug introduced in 8 or earlier and persisting through 10.3 or later

Bug isn't present in version 5.2

I don't think I quite understand how Except works.

I want to define $f(a, b) = (a - b) \ln(a - b)$, ...

- asked by QuantumDot (12 votes), answered by Kuba (11 votes)

[What is the difference between Inherited and (Inherited + 0)] <http://mathematica.stackexchange.com/questions/101715/what-is-the-difference-between-inherited-and-inherited-0>

Let's create a stylesheet:

```
NotebookPut@
```

```
Notebook[{
  Cell[StyleData[StyleDefinitions -&gt; "Default.nb"]],
  Cell[StyleData["myStyle"]],
  Cell[StyleData["myStyle2", StyleDefinitions -&gt; ...
```

- asked by Kuba (12 votes), answered by Kuba (5 votes)

[Why is DiscretizeGraphics missing points on my curve?] <http://mathematica.stackexchange.com/questions/101594/why-is-discretizegraphics-missing-points-on-my-curve>

I have a graphics expression which renders nicely as a closed curve when put in Graphics, I don't understand why I can't get the lines from DiscretizeGraphics or BoundaryDiscretizeGraphics:

```
p = ...
```

- asked by M.R. (12 votes), answered by Jason B (7 votes)

[What's going on here? Some kind of rationalization "under the covers"?] <http://mathematica.stackexchange.com/questions/102050/whats-going-on-here-some-kind-of-rationalization-under-the-covers>

Observe:

```
eq = (.25 a + .5 b + .25 c);
CoefficientRules[eq^2]
CoefficientRules[eq^2 // Expand]
```

results in

```
{2, 0, 0} -> 1/16, {1, 1, 0} -> 1/4, {1, 0, 1} -> 1/8, {0, 2, 0} ->
1/4, ...
```

- asked by ciao (11 votes)

[Integration of incomplete rings (ellipses) pattern] <http://mathematica.stackexchange.com/questions/102069/integration-of-incomplete-rings-ellipses-pattern>

I am facing a problem in trying to do a series of averages in incomplete images. I have a series of X-ray data images, like this one:

As you can see my image is a series of partial rings/ellipses ...

- asked by Matteo S (10 votes), answered by niki (16 votes)

[Is mathematica's right click menu customizable to add Simplify tools?] <http://mathematica.stackexchange.com/questions/101684/is-mathematicas-right-click-menu-customizable-to-add-simplify-tools>

Mathematica provide Algebraic Manipulate palette for simplifying expression. But the palette window will always stay on top, which is quite annoying.

Is is possible to customize mathematica's right ...

- asked by matheorem (10 votes), answered by Karsten 7. (7 votes)

==== Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J. M. (382 votes), answered by faysou (348 votes)

[How to make Jacobian automatically in Mathematica] <http://mathematica.stackexchange.com/questions/5790/how-to-make-jacobian-automatically-in-mathematica>

If we have two vectors, a and b , how can I make Jacobian matrix automatically in Mathematica?

```

 $\left( \begin{array}{c} x_1^3+2x_2^2 \\ 3x_1^4+7x_2 \end{array} \right); b = \left( \right)$ 

```

- asked by George Mills (20 votes), answered by Jens (27 votes)

==== Can you answer these? =====

[Coppersmith's algorithm like Pari's zncoppersmith?] <http://mathematica.stackexchange.com/questions/101978/coppersmiths-algorithm-like-paris-zncoppersmith>

Is there some Mathematica package (or built-in that I missed) available, more or less equivalent to Pari's zncoppersmith function?

Paraphrasing that source: given a polynomial $P(x)$ with integer ...

- asked by fgrieu (1 vote)

[How do I calculate this integral along a complex line (not a contour) in mathematica?] <http://mathematica.stackexchange.com/questions/102088/how-do-i-calculate-this-integral-along-a-complex-line-not-a-contour-in-mathematica>

Given the function:

$$f(z) = \frac{\pi^2 \cot(\pi\sqrt{z}) \cot(\pi\sqrt{z-a})}{4\sqrt{z^2 - az}}$$

Where a is a positive constant and:

$$z = \frac{i}{b} + t$$

$$t > a$$

Where b is also a ...

- asked by T. Welsh (1 vote)

[How to add symbols to autocompletion list] <http://mathematica.stackexchange.com/questions/101871/how-to-add-symbols-to-autocompletion-list>

There are some built-in Mathematica symbols that I use quite frequently but are not included in the autocompletion list in the front end. Examples are `Analytic` and `PolynomialForm`. (As @march points ...

- asked by QuantumDot (4 votes)

6.4 Tuesday, December 8, 2015

=====

Top new questions this week:

=====

[Can I emulate Wolfram's automatic package updating in my own packages?] <http://mathematica.stackexchange.com/questions/101035/can-i-emulate-wolfram-s-automatic-package-updating-in-my-own-packages>

It seems that some Wolfram-provided packages are smart enough to automatically check with the Wolfram servers, notice when a newer version is available, and download it, so that the user always has ...

- asked by ibeatty (12 votes), answered by ZachB (3 votes)

[Zooming using GeoGraphics] <http://mathematica.stackexchange.com/questions/100920/zooming-using-geographics>

Suppose I do:

```
GeoGraphics[Entity["City", "Eureka", "California", "UnitedStates"]]
```

What do folks do at this point to zoom in to various parts of the image?

- asked by David (12 votes), answered by Peter Roberge (12 votes)

[Shortest tour with vertex priority] <http://mathematica.stackexchange.com/questions/101175/shortest-tour-with-vertex-priority>

I changed the title of my question and tried to simplify formulation of the problem.

I solve a very big vehicle routing problem. I divided this one big problem on many small sub-problems. Each small ...

- asked by Alexey Golyshev (10 votes), answered by Alexey Golyshev (4 votes)

[Backquote in string template?] <http://mathematica.stackexchange.com/questions/101342/backquote-in-string-template>

I need to have backquotes in a `StringTemplate`.

For example

```
StringTemplate["'1'"] [2]
```

Returns "21" instead of "'2'".

How can I get the correct result ?

Of course a solution would be to use ...

- asked by faysou (8 votes), answered by Kuba (5 votes)

[create an (almost) hexagonal mesh on an ellipsoid] <http://mathematica.stackexchange.com/questions/101183/create-an-almost-hexagonal-mesh-on-an-ellipsoid>

EDIT I edited the question in order to take into @Kuba's comment.

I want to create this figure with Mathematica (in particular an almost hexagonal mesh on an ellipsoid; thanks to @Kuba I know this ...

- asked by dimitris (8 votes), answered by Kuba (10 votes)

[How to count number of small dots in a picture] <http://mathematica.stackexchange.com/questions/100957/how-to-count-number-of-small-dots-in-a-picture>

I have this picture of small particles in a polymer film. I want to count how many particles in the figure, so that I can have a rough estimation of the particle density. But the image quality is ...

- asked by MYG (8 votes), answered by Graumagier (4 votes)

[Why some GeoProjections show just half of Chukotka region (Russian map)] <http://mathematica.stackexchange.com/questions/101334/why-some-geoprojections-show-just-half-of-chukotka-region-russian-map>

I've moved to V.10.3 as suggested and proceed with Russian map (the aim is to geoplot regional distributions of some values). Notice most eastern Russian region - Chukotka. Chukotka, unlike other ...

- asked by garej (7 votes), answered by Peter Roberge (1 vote)

=====
 ===== Greatest hits from previous weeks: =====

[How can I improve Mathematica's resolution on a macbook retina display?] <http://mathematica.stackexchange.com/questions/18419/how-can-i-improve-mathematicas-resolution-on-a-macbook-retina-display>

Mathematica 9.0 looks a bit fuzzy on the retina screen, how can I increase the resolution?
 Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (38 votes), answered by programming_historian (20 votes)

[How do I draw a pair of buttocks?] <http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (236 votes), answered by mikuszefski (360 votes)

=====
 ===== Can you answer these? =====

[Using Mathematica with touchscreens] <http://mathematica.stackexchange.com/questions/101089/using-mathematica-with-touchscreens>

I really like using my Windows 10 touchscreen to move around in websites, documents, etc. It doesn't work in Mathematica. Can that be fixed by changing a global notebook setting, or is it something ...

- asked by George Wolfe (4 votes)

[Theorem Proving]<http://mathematica.stackexchange.com/questions/101201/theorem-proving>

It's a hard for me to write english so I'll try to go straight to my problem. There is abstract predicate f , that takes two parameters. There are also two other predicates b and u :

`b[x_, y_] := ...`

- asked by rattrapper (5 votes)

[Initializing FinancialData indices never finishes] <http://mathematica.stackexchange.com/questions/101339/initializing-financialdata-indices-never-finishes>

Retrieving data using FinancialData became more unreliable in the last couple of months, but simply retrying was enough to finally get the data. Now it seems to be nearly completely broken in ...

- asked by Karsten 7. (3 votes)

6.5 Tuesday, December 1, 2015

=====
Top new questions this week:
=====

[Wiggly and imprecise animated gif output] <http://mathematica.stackexchange.com/questions/100628/wiggly-and-imprecise-animated-gif-output>

Trying to make animated gif of zooming into famous Ford circles. With the code

```
visibleQ[lh_, hr_, c_, k_] := Which[
  lh &gt;= 1/(2 k), If[2 c k^2 &lt;= 1 &amp; &amp; lh^2 &lt; c (1 - c k^2), True, ...
```

- asked by (12 votes), answered by Michael E2 (7 votes)

[What is the difference between `Dynamic[x]` and `Dynamic[h[x]]` for `DynamicModule` variables?] <http://mathematica.stackexchange.com/questions/100828/what-is-the-difference-between-dynamicx-and-dynamic-hx-for-dynamicmodule>

Why plain `Dynamic[x]` is less sensitive and less likely to automatically be updated than e.g. `Dynamic[x]`?

The issue was raised here couple of times but I don't remember any general answer, just work ...

- asked by Kuba (11 votes)

[Pick elements from list "separately"] <http://mathematica.stackexchange.com/questions/100696/pick-elements-from-list-separately>

I have the following list I want to pick elements from:

```
mylist = 1, 5, 7, 3, 4, 7, 2, 9, 9, 1, 10, 12, 2, 64, 34, 64
```

I have another list with 0's and 1's which is my selector:

```
selector = 1, 1, ...
```

- asked by holistic (11 votes), answered by eldo (11 votes)

[A quicker than `outer`] <http://mathematica.stackexchange.com/questions/100551/a-quicker-than-outer>

I need to get a matrix $\{a(x_i - x_j)\}$, where x_i form a partition of an interval, $a(x)$ is a given function. I use

```
In[67] := a[x_?NumericQ] := N[Exp[-Abs[x]]];
      x = Table[-10 + 0.02 (j - ...
```

- asked by Dmitri (11 votes), answered by Szabolcs (14 votes)

[Converting a list of rules to a list of lists] <http://mathematica.stackexchange.com/questions/100700/converting-a-list-of-rules-to-a-list-of-lists>

What are some easy ways to convert the list of Rules

```
{"Joe" -> 94, "Jane" -> 85, "Bob" -> 82, "Bill" -> 83,
  "Michelle" -> 98}
```

into a list of lists:

...

- asked by David (9 votes), answered by eldo (14 votes)

[Magnifying Glass on a Plot] <http://mathematica.stackexchange.com/questions/100691/magnifying-glass-on-a-plot>

Although there is a trick in TEX magnifying glass but I want to know is there any function to magnifying glass on a plot with Mathematica?

For example for a function as $\text{Sin}[x]$ and at $x=\text{Pi}/6$

Below, ...

- asked by Ackaran (9 votes), answered by Karsten 7. (13 votes)

[How to extract a region shape from an 2 colour image?] <http://mathematica.stackexchange.com/questions/100578/how-to-extract-a-region-shape-from-an-2-colour-image>

I'll start by saying that I don't know anything about image processing. I have an image and I need to extract its outermost shape for use in a WordCloud. The image only has two colours and the ...

- asked by Edmund (9 votes), answered by niki (4 votes)

==== Greatest hits from previous weeks: =====

[How to express trigonometric equation in terms of of given trigonometric function?] <http://mathematica.stackexchange.com/questions/434/how-to-express-trigonometric-equation-in-terms-of-of-given-trigonometric-functio>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$$\text{Sin}[x]^2 + \text{Cos}[x]^2 == 1$$

$$\text{Sin}[x] / \text{Cos}[x] == \text{Tan}[x]$$

...

- asked by Prashant Bhate (24 votes), answered by Simon (28 votes)

[How to find all the local minima/maxima in a range] <http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range>

I want to find :

all local maxima in range

all local minima in range

From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (52 votes), answered by Daniel Lichtblau (56 votes)

=====
 ===== Can you answer these?
 =====

[Solving this system of nonlinear equations] <http://mathematica.stackexchange.com/questions/100466/solving-this-system-of-nonlinear-equations>

Edit Interestingly, I realized solving my problem with $2n$ equations appeared to be more efficient than using mathematical results on the solutions to reduce the problem to n equations (the n ...

- asked by anderstood (2 votes)

[Share variables among notebooks with different Kernels] <http://mathematica.stackexchange.com/questions/100760/share-variables-among-notebooks-with-different-kernels>

So I have a server running in another notebook with a secondary kernel. I run my main notebook and launch the server notebook, but I have configured the variables in my main one, and can't find a way ...

- asked by jaimehrubiks (2 votes)

[Planning flights for a special route] <http://mathematica.stackexchange.com/questions/100768/planning-flights-for-a-special-route>

I want to plan a world trip with Mathematica. So I already have the dataset with all the cities I want to visit and the tour (with the command `FindShortestTour`). So now I want to know how to come from ...

- asked by Kristina (3 votes)

6.6 Tuesday, November 24, 2015

=====

Top new questions this week:

=====

[Is Mathematica worth it for me?] <http://mathematica.stackexchange.com/questions/100072/is-mathematica-worth-it-for-me>

I'm 13 years old and in 7th grade. I'm currently in Algebra 1, and I have fallen in love with both math and programming.

When I came upon Mathematica, it was awesome. My two favorite things fused ...

- asked by TreFox (50 votes), answered by Pillsy (33 votes)

[GroupBy twice gives different results] <http://mathematica.stackexchange.com/questions/100139/groupby-twice-gives-different-results>

update: confirmed as a bug related to 'N' when using GroupBy or GatherBy. It is a bug at least since version 7

It took me quite a lot of time to finally trace down to this strange output. I really ...

- asked by matheorem (25 votes), answered by Patrick Stevens (15 votes)

[How to make a blob in 3D?] <http://mathematica.stackexchange.com/questions/99754/how-to-make-a-blob-in-3d>

I am trying to make a blob like the one shown below, but in 3D so I can rotate it. I'm trying to use ParametricPlot3D or SphericalPlot3D. I can make a sphere easily. But my knowledge of how to modify ...

- asked by Michael McCain (20 votes), answered by Eric Towers (12 votes)

[Coordinate system transformation problem (about Euler angle)] <http://mathematica.stackexchange.com/questions/100054/coordinate-system-transformation-problem-about-euler-angle>

This question comes from the work that constructing the general cylinder by the NURBS. I have implemented the point-set P_1, P_2, \dots, P_n that in the $O - xyz$ plane, now I want to implement the ...

- asked by Shutao TANG (14 votes), answered by J. M. (9 votes)

[List of symbols marked `[[EXPERIMENTAL]]` in the documentation] <http://mathematica.stackexchange.com/questions/100058/list-of-symbols-marked-experimental-in-the-documentation>

Some of the built-in Wolfram Language symbols are marked as `[[EXPERIMENTAL]]` in the documentation. For example

[Echo]

How can I get a list of all the symbols marked as `[[EXPERIMENTAL]]`?

(This ...

- asked by Karsten 7. (14 votes), answered by Karsten 7. (20 votes)

[Random letters: What is the chance, that true words are coming?] <http://mathematica.stackexchange.com/questions/99800/random-letters-what-is-the-chance-that-true-words-are-coming>

Suppose, that we are just typing random letters with our keyboards (we use space bar too). We don't make difference between big and small letters. If we work for a long time, how much from the words ...

- asked by Arquis (13 votes), answered by belisarius has settled (18 votes)

[How to take and evaluate a specific part of a list without evaluating the rest?] <http://mathematica.stackexchange.com/questions/100217/how-to-take-and-evaluate-a-specific-part-of-a-list-without-evaluating-the-rest>

I have a large list, for example,

```
lis = {x + y, x y, Sin[x] y + Exp[y], x^2 y}
```

and its elements depend on variables `x` and `y`. Later I assign numerical values to `x` and

```
x = {1, 2, 3, 4, 5}
```

```
y = {3, ...}
```

- asked by renphysics (9 votes), answered by Chris Degnen (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to use Mathematica functions in Python programs?] <http://mathematica.stackexchange.com/questions/4643/how-to-use-mathematica-functions-in-python-programs>

I'd like to know how can I call Mathematica functions from Python.

I appreciate a example, for example, using the Mathematica function Prime.

I had search about MathLink but how to use it in Python ...

- asked by GarouDan (35 votes), answered by GarouDan (14 votes)

[Mathematica sporadically crashes on open] <http://mathematica.stackexchange.com/questions/32232/mathematica-sporadically-crashes-on-open>

Sometimes, when I open Mathematica, while the opening splash screen still says "Initializing Kernel Connections", Windows will tell me that "Wolfram Mathematica 9 has stopped working". This will ...

- asked by William Kunkel (9 votes), answered by Bingo (5 votes)

=====
 ===== Can you answer these?
 =====

[Can't get Mathematica to Import PDF files with diacritics on the file name] <http://mathematica.stackexchange.com/questions/99980/cant-get-mathematica-to-import-pdf-files-with-diacritics-on-the-file-name>

Tested with versions 9.0.0, 10.0.2 and 10.3.0, all under OS X 10.10.5.

The drag-and-drop front-end functionality also results in \$Failed.

Surprisingly, Importing, JPEGs, TXTs, and XLSX work just ...

- asked by Aisamu (4 votes)

[Where can I find documentation on use of special characters in templates?] <http://mathematica.stackexchange.com/questions/100023/where-can-i-find-documentation-on-use-of-special-characters-in-templates>

I am new to Templates. I have seen the usage

"\!\(*StyleBox ...)"

as here: disabling templates What does the string "!(*" accomplish and can I find some documentation of this notation?

- asked by John McGee (1 vote)

[Exponential Matrix Diffentiation] <http://mathematica.stackexchange.com/questions/100214/exponential-matrix-diffentiation>

I have been struggling with the following question while solving an optimization problem in \mathbb{R}_+^G . Basically, I have

$$\min_{y \in \mathbb{R}_+^G} F(y) = y^T \mathcal{K} + \exp(-y^T \dots)$$

- asked by Guilherme Thompson (1 vote)

6.7 Tuesday, November 17, 2015

=====

Top new questions this week:

=====

[Terrifying performance decrease for contour/density plots in v10.1 -> 10.3] <http://mathematica.stackexchange.com/questions/99255/terrifying-performance-decrease-for-contour-density-plots-in-v10-1-10-3>

I setup for download a test dataset at <http://www.inrim.it/~magni/cm.dat.gz> (a set of 64800 triplets x,y,z).

The behavior can be reproduced with the following code:

link = ...

- asked by alessandro (24 votes), answered by Jason B (13 votes)

[Cyclic Take function?] <http://mathematica.stackexchange.com/questions/99188/cyclic-take-function>

Is there some direct and simple "cyclic Take", sometimes also known as "overtake" in Mathematica. That is, if the take specification runs out of elements, it just cycles back to the beginning (as many ...

- asked by murray (21 votes), answered by kglr (22 votes)

[Speeding up generation of block diagonal matrix] <http://mathematica.stackexchange.com/questions/99467/speeding-up-generation-of-block-diagonal-matrix>

I'm struggling with the following problem. I have 48 square matrices (full, filled with real machine precision numbers, thus are packed, all different) of size 128. I would like to place them on a ...

- asked by mmal (16 votes), answered by ybeltukov (14 votes)

[Integrate returns imaginary answer for smooth, real function] <http://mathematica.stackexchange.com/questions/99395/integrate-returns-imaginary-answer-for-smooth-real-function>

Bug introduced in 7 or earlier and persisting through 10.3

I'm trying to evaluate the integral:

$$\int_0^{\infty} \frac{1}{4b\sqrt{\pi r}} e^{-(b-r)^2} (e^{4br} - 1) dr$$

with ...

- asked by Kevin Driscoll (15 votes)

[Detecting an ellipse in a glaucoma photo] <http://mathematica.stackexchange.com/questions/99578/detecting-an-ellipse-in-a-glaucoma-photo>

For glaucoma diagnosis it is common to determine a "cup to disk ratio" which compares the diameter of the optic disk (VDD) and optic cup (VCD). The optical disk is visible as a circular red feature ...

- asked by indra ginanjar A.T (14 votes), answered by belisarius has settled (17 votes)

[How to implement the general array broadcasting method from NumPy?] <http://mathematica.stackexchange.com/questions/99171/how-to-implement-the-general-array-broadcasting-method-from-numpy>

A friend of mine introduced array broadcasting in the Python NumPy package which is very convenient (and also highly efficient).

The idea is perfectly shown in this picture:

Basically, the method ...

- asked by matheorem (14 votes), answered by Pillsy (15 votes)

[Derivative of a pure function with SlotSequence] <http://mathematica.stackexchange.com/questions/99439/derivative-of-a-pure-function-with-slotsequence>

I can live with this but I can't figure out why the following is 0:

```
Derivative[1][f[##] &][x]
```

0

From documentation for Derivative:

[...] Whenever `Derivative[n][f]` is generated, the WL ...

- asked by Kuba (14 votes), answered by Michael E2 (13 votes)

=====
 Greatest hits from previous weeks: =====

[Even Fibonacci numbers] <http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers>

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by Shutao TANG (26 votes), answered by rcollyer (34 votes)

[How can I plot the direction field for a differential equation?] <http://mathematica.stackexchange.com/questions/8841/how-can-i-plot-the-direction-field-for-a-differential-equation>

I'd like to plot the graph of the direction field for a differential equation, to get a feel for it. I'm a novice, right now, when it comes to plotting in Mathematica, so I'm hoping that someone can ...

- asked by Matt Groff (16 votes), answered by Peter Breitfeld (13 votes)

=====
 ===== Can you answer these?
 =====

[Odd Coloring with GeoRegionValuePlot] <http://mathematica.stackexchange.com/questions/99478/odd-coloring-with-georegionvalueplot>

When I'm plotting data with GeoRegionValuePlot, I'm getting some strange coloring errors:

The grid included shows the top 10 countries with arable land per population. However, Australia is colored ...

- asked by DavisDude (1 vote)

[Find regions in which the roots of a third degree polynomial are real] <http://mathematica.stackexchange.com/questions/99167/find-regions-in-which-the-roots-of-a-third-degree-polynomial-are-real>

I have to find the roots of a third degree polynomial in ϕ that depends from 3 parameters, namely $t, s, w \in \mathbb{R}$. In order to do that I've used the command Solve, in the following way:

...

- asked by Claretta (5 votes)

[Works with example numbers, but not with variables alone] <http://mathematica.stackexchange.com/questions/99575/works-with-example-numbers-but-not-with-variables-alone>

The following code prints the correct solution for variable a (2.23).

But if i comment out the 5 given example numbers on top it fails.
 If i remove some of the constraints at the bottom (&& ...

- asked by JoDo (1 vote)

6.8 Tuesday, November 10, 2015

=====

Top new questions this week:

=====

[How to draw cylinders inside a cube] <http://mathematica.stackexchange.com/questions/98724/how-to-draw-cylinders-inside-a-cube>

I want to create the following graphic (ignore the unit vectors).

What I do is the following (not the most elegant and smart way I guess:-!):

1) Use the code below to generate randomly distributed ...

- asked by dimitris (23 votes), answered by ybeltukov (37 votes)

[Sparse Cholesky Decomposition] <http://mathematica.stackexchange.com/questions/98702/sparse-cholesky-decomposition>

I am working with square matrices with a special form, which for large rank ($> 100,000$) would be best stored and manipulated as a SparseArray. I believe that the Cholesky decomposition of these ...

- asked by Eric Brown (17 votes), answered by J. M. (16 votes)

[Histogram3D with various colors and textures on cuboids' faces] <http://mathematica.stackexchange.com/questions/98687/histogram3d-with-various-colors-and-textures-on-cuboids-faces>

I'm trying to produce an Histogram3D-like graph, but with a little more customization.

In particular I want to manually specify the color of each cuboid and to print some information on the top ...

- asked by glance (14 votes), answered by Taiki (10 votes)

[Can anyone explain this weird Plot3D error?] <http://mathematica.stackexchange.com/questions/98813/can-anyone-explain-this-weird-plot3d-error>

This is more of a fun question because I see the source of the error, but cannot explain what Plot3D is doing. Can you figure it out?

```
L = 111;
X = Table[{0, 0}, {n, 1, L}];
X3D[n_, m_] := ...
```

- asked by lynvie (13 votes), answered by Michael E2 (6 votes)

[Piecewise imposes internal boundaries in NDSolve - is this expected?] <http://mathematica.stackexchange.com/questions/98734/piecewise-imposes-internal-boundaries-in-ndsolve-is-this-expected>

In the following code I used True as the predicate for DirichletCondition and found that the boundary condition was applied not only at the boundary of the specified region but also at the internal ...

- asked by Simon Woods (13 votes), answered by user21 (8 votes)

[What is the difference between a .wl package and a .m package?] <http://mathematica.stackexchange.com/questions/98981/what-is-the-difference-between-a-wl-package-and-a-m-package>

In Mathematica 10.x, one now has both .wl Wolfram Language Packages and .m Wolfram Mathematica Packages.

What's the difference? Is one of the two formats to be preferred in certain situations and, ...

- asked by murray (12 votes)

[Defer, Hold, Unevaluated, Inactivate – which one when?] <http://mathematica.stackexchange.com/questions/98874/defer-hold-unevaluated-inactivate-which-one-when>

What are some guidelines on which function to select from among the superficially similar functions Defer, Hold, Unevaluated, and Inactivate?

Consider, for example:

```
Defer[Defer[Sum[1/k^2, {k, 1, ...
```

- asked by murray (12 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Python-style plots in Mathematica] <http://mathematica.stackexchange.com/questions/84877/python-style-plots-in-mathematica>

I love making plots in Mathematica. And I love to spend a lot of time making high-quality plots that maximize readability and aesthetics. For most cases, Mathematica can make very beautiful images, ...

- asked by Pablo Galindo Salgado (49 votes), answered by halirutan (49 votes)

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius has settled (278 votes), answered by Michael E2 (148 votes)

=====
 ===== Can you answer these?
 =====

[How do I determine which ChartElementDataFunction is Automatic?] <http://mathematica.stackexchange.com/questions/98820/how-do-i-determine-which-chartelementdatafunction-is-automatic>

In the course of exploring @kglr's answer to Edmund's question gain some insight into how I might answer my own question here, I came across the undocumented System'ChartElementData function, which ...

- asked by Pillsy (7 votes)

[Control Front End in "mathlink" mode] <http://mathematica.stackexchange.com/questions/98686/control-front-end-in-mathlink-mode>

Note: This question was already posted in the Wolfram community.

In a terminal math session, we can start a front end (FE) easily by launching it through LinkLaunch or by using functions provided in ...

- asked by halirutan (11 votes)

[Multivariate Path Construction using Sobol numbers] <http://mathematica.stackexchange.com/questions/98914/multivariate-path-construction-using-sobol-numbers>

I am sharing my code, which I have tried to perform as per the instruction mentioned below. Please correct it so that I could get my output.

Instruction: Use the first m dimensions of the Sobol vector ...

- asked by Pankaj Mani (1 vote)

6.9 Tuesday, November 3, 2015

=====

Top new questions this week:

=====

[Incorrect Timing of Total] <http://mathematica.stackexchange.com/questions/98453/incorrect-timing-of-total>

For demonstrating how fast C-compiled functions can be, in one of my courses I use the following function for finding the sum of a list of reals:

```
myTotal = Compile[{{lst, _Real, 1}}, Module[{s=0.}, ...
```

- asked by Fred Simons (17 votes), answered by ilian (12 votes)

[Aggregation queries on lists of associations in 10.3] <http://mathematica.stackexchange.com/questions/98277/aggregation-queries-on-lists-of-associations-in-10-3>

Bug introduced in 10.3

Some aggregation queries applied to a list of associations (or Dataset's with this structure) lock up the front end or crash the kernel in Version 10.3.

```
xx = {&lt;|"a" -&gt; ...
```

- asked by Daniel W (14 votes), answered by SquareOne (7 votes)

[On making a graphical real-time memory usage monitor] <http://mathematica.stackexchange.com/questions/98205/on-making-a-graphical-real-time-memory-usage-monitor>

I'd like to make a graphical version of

```
Dynamic[Refresh[MemoryInUse[], UpdateInterval -&gt; 1]]
```

A naive implementation would be something like:

```
miu = {};
Dynamic[Refresh[ListPlot[AppendTo[miu, ...
```

- asked by kjo (12 votes), answered by Karsten 7. (7 votes)

[How to sort list of mixed types of elements with each type a specified canonical order?] <http://mathematica.stackexchange.com/questions/98438/how-to-sort-list-of-mixed-types-of-elements-with-each-type-a-specified-canonical>

For example, here is a list

```
{1, "u"}, {6, "d"}, {3, "u"}, {4, "d"}, {2, "u"}, {5, "u"}, {3, "d"}, {1, "d"}, {4, "u"}, {2, "d"}, {5, "d"}, {6, "u"}
```

The default canonical order for integer is ...

- asked by matheorem (11 votes), answered by belisarius is forth (14 votes)

[How do you concatenate matrices? And how do you make block matrices?] <http://mathematica.stackexchange.com/questions/98406/how-do-you-concatenate-matrices-and-how-do-you-make-block-matrices>

This is pretty trivial to do in Matlab, but I have not seen a function for it in Mathematica. Here is how you can do it with Join and Transpose. Is there an easier way to do it than this?

...

- asked by luke wendt (10 votes), answered by Taiki (12 votes)

[Association Subtotals with Lists as Keys] <http://mathematica.stackexchange.com/questions/98346/association-subtotals-with-lists-as-keys>

I have the following Association:

```
as = <|{5, 2, 1} -> 3, {6, 1, 4} -> 9, {5, 1, 9} -> 12, {5, 2, 4} -> 6|>
```

I want to total the values on the right side of the ...

- asked by eldo (10 votes), answered by Pillsy (13 votes)

[get position index for all element in a list] <http://mathematica.stackexchange.com/questions/98170/get-position-index-for-all-element-in-a-list>

For example

```
mat={{a,b},{c,a,a}}
```

How to write a function `posindex` that `posindex[mat]` will give

```
{{a -> {1, 1}, b -> {1, 2}}, {c -> {2, 1}, a -> {2, 2}, a -> {2, 3}}
```

And the function ...

- asked by `matheorem` (10 votes), answered by `Michael E2` (8 votes)

=====
Greatest hits from previous weeks: =====

[3D surface that looks like a virus] <http://mathematica.stackexchange.com/questions/74193/3d-surface-that-looks-like-a-virus>

I have been recently using Mathematica for composing animations that are part of the supplementary information of my papers.

I am currently trying to build an animation that involves a viral ...

- asked by `user2098` (16 votes), answered by `Chris Degnen` (18 votes)

[Mathematica Minecraft] <http://mathematica.stackexchange.com/questions/19669/mathematica-minecraft>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

- asked by `faleichik` (131 votes), answered by `faleichik` (176 votes)

=====
Can you answer these? =====

[Triggering events based on choices made inside of system dialogs (e.g. window close)]
<http://mathematica.stackexchange.com/questions/98091/triggering-event-s-based-on-choices-made-inside-of-system-dialogs-e-g-window-cl>

I'm trying to arrange for Mathematica to perform a certain action every time a notebook is saved or closed (with or without saving). The obvious way to do this would be through event handling. So, ...

- asked by `Paco Jain` (5 votes)

[ListContourPlot and ListContourPlot3D use better interpolation for arrays of values than for lists of tuples (i.e. x,y,z,f[x,y,z]..) <http://mathematica.stackexchange.com/questions/98145/listcontourplot-and-listcontourplot3d-use-better-interpolation-for-arrays-of-val>

From reading the documentation, it seems that ListContourPlot3D should work equally well on an array versus a list of tuples,

?ListContourPlot3D

ListContourPlot3D[array] generates a contour plot ...

- asked by Jason B (10 votes)

[Size problems combining objects in a Graphics using Inset] <http://mathematica.stackexchange.com/questions/98282/size-problems-combining-objects-in-a-graphics-using-inset>

The Problem

I need to put together different graphics objects in a precise way inside a Graphics. Some objects are drawn directly by graphics primitives, some others are the result of calls to ...

- asked by Guido (4 votes)

6.10 Tuesday, October 27, 2015

=====
 Top new questions this week:

=====
 [Recursively appending elements to a list] <http://mathematica.stackexchange.com/questions/97684/recursively-appending-elements-to-a-list>

In wanting to demonstrate the power of Mathematica, I wanted to show my 11-year-old son how we could validate that his sequences homework was correct. We could generate the next value in sequence in a ...

- asked by AnthonyMiller (15 votes), answered by J. M. (19 votes)

[What is "MemoryMonitor"?] <http://mathematica.stackexchange.com/questions/97810/what-is-memorymonitor>

Evaluating one of the following inputs

```
CurrentValue[EvaluationNotebook[], WindowElements]
```

```
CurrentValue[$FrontEndSession, WindowElements]
```

```
CurrentValue[$FrontEnd, WindowElements]
```

...

- asked by Karsten 7. (12 votes), answered by m_goldberg (10 votes)

[Pop-up documentation for "The new function of the day"] <http://mathematica.stackexchange.com/questions/97552/pop-up-documentation-for-the-new-function-of-the-day>

The Wolfram Language has more than 5000 built-in functions and constants.

```
functionslist = Flatten[
  Names[#] & /@ Flatten[
    {# &lt;&gt; " ", "$" &lt;&gt; # &lt;&gt; " *} &
    /@ ...
```

- asked by rhermans (12 votes), answered by J. M. (5 votes)

[ListContourPlot has wrong colouring: workaround?] <http://mathematica.stackexchange.com/questions/97596/listcontourplot-has-wrong-colouring-workaround>

ListContourPlot uses the wrong colouring here:

```
res = Import["https://dl.dropboxusercontent.com/u/38623/res.wdx", "WDX"];
```

```
ListContourPlot[res, Contours -&gt; Range[0.66, 0.9, 0.02], ColorFunction ...
```

- asked by Szabolcs (12 votes), answered by Jason B (9 votes)

[How do you handle upgrade frequency now that minor releases come so quickly?] <http://mathematica.stackexchange.com/questions/97493/how-do-you-handle-upgrade-frequency-now-that-minor-releases-come-so-quickly>

Does anyone understand the Mathematica upgrade treadmill these days? With the minor releases (10.2, 10.3) coming out fairly quickly and the upgrade price associated with each, I have no idea what my ...

- asked by sblom (12 votes)

[More efficient method to compute moments of the Johnson S_B distribution] <http://mathematica.stackexchange.com/questions/97750/more-efficient-method-to-compute-moments-of-the-johnson-s-b-distribution>

Here is a very specific feature request. I need

```
Mean[JohnsonDistribution["SB", \[Gamma], \[Delta], 0, 1]]
```

When I issue e.g.

```
Table[N[Mean[JohnsonDistribution["SB", \[Gamma], \[Delta], 0, 1]]],
      {\[Gamma], -10, 10}, {\[Delta], 1, 10}]
```

- asked by (11 votes), answered by J. M. (15 votes)

[Path Names Longer Than 256 on Windows] <http://mathematica.stackexchange.com/questions/97736/path-names-longer-than-256-on-windows>

Is there a way to work with pathnames that are longer than the typical 256 in Mathematica?

For example run the following in Cygwin

```
echo 1 &gt; ...
```

- asked by William (11 votes), answered by WReach (10 votes)

==== Greatest hits from previous weeks: =====

[Mathematica Minecraft] <http://mathematica.stackexchange.com/questions/19669/mathematica-minecraft>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

- asked by faleichik (131 votes), answered by faleichik (176 votes)

[3D surface that looks like a virus] <http://mathematica.stackexchange.com/questions/74193/3d-surface-that-looks-like-a-virus>

I have been recently using Mathematica for composing animations that are part of the supplementary information of my papers.

I am currently trying to build an animation that involves a viral ...

- asked by user2098 (16 votes), answered by Chris Degnen (18 votes)

==== Can you answer these?
====

[How to model discontinuities in a NonlinearStateSpaceModel] <http://mathematica.stackexchange.com/questions/97717/how-to-model-discontinuities-in-a-nonlinearstatespacemodel>

I know that it is possible to model discontinuities like bouncing and other collisions by using WhenEvent with NDSolve.

However, I am using the tools for Non linear systems and I'd like to know if ...

- asked by RationalAsh (2 votes)

[How to pass a custom method to a particular option?] <http://mathematica.stackexchange.com/questions/97753/how-to-pass-a-custom-method-to-a-particular-option>

In an answer to my question More efficient method to compute moments of the Johnson S_B distribution, J. M. has come up with a method to compute the moments of the Johnson S_B distribution, which ...

- asked by (4 votes)

[Scaling 1D ArrayPlot divide by zero error] <http://mathematica.stackexchange.com/questions/97467/scaling-1d-arrayplot-divide-by-zero-error>

I am trying to overlay an ArrayPlot onto a WaveletScalogram, using the helpful answer here; however, my ArrayPlot is one-dimensional.

My code:

```
Show[{
  WaveletScalogram[trainWaveData["A1 HbO"], ...
```

- asked by Lylax (2 votes)

6.11 Tuesday, October 20, 2015

=====

Top new questions this week:

=====

[DumpSave 10.2 style from 10.3] <http://mathematica.stackexchange.com/questions/97357/dumpsave-10-2-style-from-10-3>

Szabolcs has asked WRI support about mx files, in particular:

Can we expect that MX files written by Mathematica 10.0.0 will be readable by future point released such as 10.0.1 or 10.0.2?

...

- asked by Kuba (14 votes)

[Plot3D is incorrectly returning "1/0. encountered"] <http://mathematica.stackexchange.com/questions/97104/plot3d-is-incorrectly-returning-1-0-encountered>

The line of code

```
Plot3D[1/y, {x, 0, 1}, {y, x + 1, x + 2}]
```

is returning several "Power::infy: Infinite expression 1/0. encountered." error messages, and then returning an empty plot. But the ...

- asked by tparker (13 votes), answered by rhermans (8 votes)

[Fast Selections Testing on Inequality] <http://mathematica.stackexchange.com/questions/97083/fast-selections-testing-on-inequality>

Is there a functional idiom for fast selections testing on inequality?

For example, finding values from list a & b where the key is less than or equal to a value, in this case 4 or 9.

An ...

- asked by Chris Degnen (13 votes), answered by Chris Degnen (5 votes)

[Generate two random numbers with constraint] <http://mathematica.stackexchange.com/questions/97424/generate-two-random-numbers-with-constraint>

I want to generate two random numbers p and q between 0.5 and 1. They are connected by the following constraint $1/2q > p$. How to do that?

- asked by Chandan Datta (12 votes), answered by rhermans (18 votes)

[How to evaluate the second argument of Cases only once] <http://mathematica.stackexchange.com/questions/96939/how-to-evaluate-the-second-argument-of-cases-only-once>

I'd like to find a fast but readable way to achieve the following:

```
Cases[RandomInteger[{AbsoluteTime["2001"], AbsoluteTime["2003"]}, 1000],
a_ /; a > AbsoluteTime["2002"]]
```

The correct result ...

- asked by Italianice (10 votes), answered by Michael E2 (11 votes)

[How to predict the degree of the first series coefficient?] <http://mathematica.stackexchange.com/questions/97313/how-to-predict-the-degree-of-the-first-series-coefficient>

Given an expression f that is a function of x and a number x_0 , what is the least integer n that produces a non-zero coefficient in `Series[f, x, x0, n]`?

[1] For instance, here, is the answer is $n = \dots$

- asked by Michael E2 (9 votes), answered by bbgodfrey (0 votes)

[Trying to find the asymptote to a function] <http://mathematica.stackexchange.com/questions/97365/trying-to-find-the-asymptote-to-a-function>

I am trying to find the asymptote to a solution of a differential equation.

I solved $x'(t) = \sin(x(t) + t)$ using `NDSolve` and plotted my solution.

```
sol = NDSolve[{x'[t] == Sin[x[t] + t], x[0] == ...
```

- asked by Jacobadtr (9 votes), answered by bbgodfrey (9 votes)

=====
 Greatest hits from previous weeks: =====

[Generating visually pleasing circle packs] <http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (86 votes), answered by level1807 (51 votes)

[Is there a syntax for single-line comments for notebooks?] <http://mathematica.stackexchange.com/questions/1496/is-there-a-syntax-for-single-line-comments-for-notebooks>

I'm aware that I can use (* ... *) to comment out stuff in a notebook. Many languages have a syntax for single-line comments, such as

```
// in C, C++, Java, C#, ...
# in shell, Python, ...
```

For ...

- asked by Peeter Joot (35 votes), answered by Szabolcs (42 votes)

==== Can you answer these?
====

[SyntaxInformation: take allowed options from multiple symbols possible?] <http://mathematica.stackexchange.com/questions/97411/syntaxinformation-take-allowed-options-from-multiple-symbols-possible>

Suppose I have a function like

```
Options[f] = {foo -&gt; 1};
f[opt : OptionsPattern[{f,g}]] := h@g[Sequence @@ FilterRules[{opt}, Options[g]]]
```

I purposefully do not want to append Options[g] to ...

- asked by Szabolcs (4 votes)

[Is there any way to export vector graphics with shading?] <http://mathematica.stackexchange.com/questions/97305/is-there-any-way-to-export-vector-graphics-with-shading>

This has irked me for a while as I really feel its a significant shortfall in Mathematica's abilities but maybe I am missing something.

I would like to export simple graphics with shading in a ...

- asked by Quantum_Oli (9 votes)

[Why is 13 the smaller height dimension of a Graphics?] <http://mathematica.stackexchange.com/questions/97364/why-is-13-the-smaller-height-dimension-of-a-graphics>

It seems that you cannot get a Graphics image with a height dimension less than 13. Trying to draw something and then asking for the ImageDimensions of the resulting Graphics, you will get three ...

- asked by Guido (6 votes)

6.12 Tuesday, October 13, 2015

=====

Top new questions this week:

=====

[Progress bar for FullSimplify] <http://mathematica.stackexchange.com/questions/96602/progress-bar-for-fullsimplify>

Sometimes FullSimplify takes a really long time and it is not really clear if it makes sense to wait another half an hour in hopes for it to finish, or if it will actually take three years in which ...

- asked by Kagaratsch (18 votes), answered by Sjoerd C. de Vries (26 votes)

[Construct a master curve from data] <http://mathematica.stackexchange.com/questions/96393/construct-a-master-curve-from-data>

I will try to be as informative as possible.

```
Clear["Global`*"]
```

I have the following data

```
data91 = {{-0.209091', 2.89296'}, {0.281818', 2.92958'}, {0.8',
          2.97535'}, {1.28182', 3.03028'}, ...
```

- asked by dimitris (11 votes), answered by Sjoerd C. de Vries (17 votes)

[Upper bound "Vicious nearest neighbour" algorithm suggestions] <http://mathematica.stackexchange.com/questions/96691/upper-bound-vicious-nearest-neighbour-algorithm-suggestions>

I am asking a question based on this question from the sister site MSE.

In an effort to make this a self-contained question, I include the first documented posing of the problem by Robert Abilock in ...

- asked by martin (10 votes), answered by Arnoud Buzing (2 votes)

[Symbolic sum of Stirling numbers gives wrong answer] <http://mathematica.stackexchange.com/questions/96575/symbolic-sum-of-stirling-numbers-gives-wrong-answer>

This issue originated from my attempt to answer a question on MathOverflow:

```
Sum[StirlingS2[i, 2], {i, 0, n}]
```

on Mathematica 10.2.0.0 gives as answer $\frac{1}{2}(-3 + 2^{1+n} - 2n)$, while the ...

- asked by Carlo Beenakker (10 votes), answered by Bob Hanlon (6 votes)

[Map a function of several arguments] <http://mathematica.stackexchange.com/questions/96803/map-a-function-of-several-arguments>

I have three lists, e.g.

```
list1 = {{a,b,...}};
list2 = {{1,2},{3,4},...};
list3 = {{x,y},{z,w},...};
```

and a function

```
f[x_,y_] := (* whatever it does *)
```

I need to get

...

- asked by T. Rihacek (10 votes), answered by Kuba (12 votes)

[Why does Nearest not support Sqrt?] <http://mathematica.stackexchange.com/questions/96588/why-does-nearest-not-support-sqrt>

Simple examples with two points

```
nf1=Nearest[{{0, 0}, {Sqrt[2], Sqrt[2]}}
```

```
nf1[{0, 0}, {All, 2.1}]
```

gives

```
{{0, 0}}
```

This is incorrect. If we test bigger radius, we can find that Mathematica takes ...

- asked by matheorem (9 votes)

[Unique Element in List] <http://mathematica.stackexchange.com/questions/96747/unique-element-in-list>

I have a list a , and want to find out whether there is a unique element in the list.

For instance $a=x,y,z,y,x$ has an unique element (z), while $a=1,2,3,4,5,1,2,3,4,5$ has no unique element.

There ...

- asked by NicoDean (8 votes), answered by J. M. is back. (11 votes)

=====
Greatest hits from previous weeks: =====

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (87 votes), answered by ArgentoSapiens (83 votes)

[Mathematica Minecraft] <http://mathematica.stackexchange.com/questions/19669/mathematica-minecraft>

Some time ago I asked myself: with all these great graphics and interactive capabilities of Mathematica, what kinds of 3D games can be implemented in it? And the answer which came to mind is ...

- asked by faleichik (131 votes), answered by faleichik (175 votes)

=====
 ===== Can you answer these?
 =====

[Examples of using Mathematica to solve matrix equations symbolically] <http://mathematica.stackexchange.com/questions/96405/examples-of-using-mathematica-to-solve-matrix-equations-symbolically>

Suppose we want to solve a linear system like

$$\begin{bmatrix} M & S \\ -S^T & 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} f \\ g \end{bmatrix}$$

- asked by fred (5 votes)

[General suggestions to accelerate Simplify and FullSimplify] <http://mathematica.stackexchange.com/questions/96476/general-suggestions-to-accelerate-simplify-and-fullsimplify>

To my understanding, the function `Simplify[]` and `FullSimplify[]` work by applying a series of built-in transformation rules to the expression and trying to minimize the `TransformationFunctions` in the ...

- asked by Yuchen Xie (1 vote)

[External and internal Assumptions on 'PiecewiseExpand' and 'Mod'] <http://mathematica.stackexchange.com/questions/96596/external-and-internal-assumptions-on-piecewiseexpand-and-mod>

After this question I'm intrigued about the different behaviors depending where and how the assumptions are given.

```
PiecewiseExpand[Mod[n, m]]      (* case #1 *)
(* Mod[n, m] *)
```

```
PiecewiseExpand[Mod[n, ...
```

- asked by rhermans (5 votes)

6.13 Tuesday, October 6, 2015

=====

Top new questions this week:

=====

[How to simplify writing LibraryLink code?](<http://mathematica.stackexchange.com/questions/96127/how-to-simplify-writing-librarylink-code>)

LibraryLink is an API for extending Mathematica through C or C++. It is very fast because it gives direct access to Mathematica's packed array data structure, without even needing to make a copy of ...

- asked by Szabolcs (22 votes), answered by Szabolcs (20 votes)

[Find the volume of Phobos and Deimos](<http://mathematica.stackexchange.com/questions/96125/find-the-volume-of-phobos-and-deimos>)

How can we calculate the volume of a 3D object using the new-in-10 computational geometry functions?

For simple objects this works:

```
shuttle = ExampleData[{"Geometry3D", "SpaceShuttle"}]
```

- asked by Szabolcs (17 votes), answered by I_Mariusz (7 votes)

[Convert binary voxel image to geometric region] (<http://mathematica.stackexchange.com/questions/96134/convert-binary-voxel-image-to-geometric-region>)

I have a binary voxel image which described a contiguous region in space.

Example:

```
arr = Array[
  Function[{x, y, z}, (1 + Sin[5 x] Sin[5 y] Sin[5 z])/2) - (x^2 + y^2 + z^2)],
  {100, 100, 100}, ...
```

- asked by Szabolcs (14 votes), answered by Simon Woods (5 votes)

[Is it possible to reference "self" from a pure function?](<http://mathematica.stackexchange.com/questions/96220/is-it-possible-to-reference-self-from-a-pure-function>)

This would calculate the factorial of 6, if the "self" was the function itself. Is there something that could allow this?

If[#[[1]] > 0, self[#[[1]] - 1, #[[2]] #[[1]]], Print[#[[2]]]] &[6, ...
 - asked by MathematicaUser39386 (13 votes), answered by Leonid Shifrin (19 votes)

[Circle with negative radius?](<http://mathematica.stackexchange.com/questions/96102/circle-with-negative-radius>)

Why does this work:

```
Graphics[{Circle[{0, 0}, -Pi/4]}]
```

But this doesn't?

```
Graphics[{Circle[{0, 0}, N[-Pi/4]}]
```

Telling me:

Radius -0.78539816339744828 should be a positive number or pair of ...

- asked by David (12 votes)

[DSolve documentation on web differs greatly from distributed MMA 10.2.0 version] (<http://mathematica.stackexchange.com/questions/96089/dsolve-documentation-on-web-differs-greatly-from-distributed-mma-10-2-0-version>)

In the course of improving my answer to 95361, I noticed that the DSolve documentation on the web is much better written than that distributed with Mathematica 10.2.0 for Microsoft Windows (64-bit) ...

- asked by bbgodfrey (10 votes), answered by Karsten 7. (5 votes)

[MapAt with Replace(All) causing kernel crash](<http://mathematica.stackexchange.com/questions/96193/mapat-with-replaceall-causing-kernel-crash>)

Bug introduced in 10.1 and fixed in 10.2

I wanted to roll a function that works like /. but only acts on the very first match it encounters.

```
ReplaceAtFirst =  
  Function[{expr, rule},  
    ...
```

- asked by LLIAMnYP (9 votes), answered by LLIAMnYP (4 votes)

=====
 Greatest hits from previous weeks: =====

[3D surface that looks like a virus] (<http://mathematica.stackexchange.com/questions/74193/3d-surface-that-looks-like-a-virus>)

I have been recently using Mathematica for composing animations that are part of the supplementary information of my papers.

I am currently trying to build an animation that involves a viral ...

- asked by user2098 (16 votes), answered by Chris Degnen (18 votes)

[Trying to Visualize a Collatz - The Collatz conjecture](<http://mathematica.stackexchange.com/questions/85718/trying-to-visualize-a-collatz-the-collatz-conjecture>)

So I'm new in this and learning— and I happen to have this collatz

```
collatz[x_, y_] := If[x == 3*y || x == 2*y + 1 || y == 3*x || y == 2*x + 2, 2, 0]
```

So i want a visual 3D adjacency graph of my ...

- asked by Mia (23 votes), answered by Sjoerd C. de Vries (27 votes)

=====
 ===== Can you answer these?
 =====

[How to "fake" a front-end object when running a Mathematica script?] (<http://mathematica.stackexchange.com/questions/95779/how-to-fake-a-front-end-object-when-running-a-mathematica-script>)

I'm running a Mathematica script (content of which cannot be disclosed here) and some part of it requires "front-end"? Since it's running in a script, there is not one and it gave the following error: ...

- asked by qazwsx (3 votes)

[INTERNAL SELF-TEST ERROR: FileNotify|c|305](<http://mathematica.stackexchange.com/questions/96273/internal-self-test-error-filenotifyc305>)

Does anybody know what this error means? Clicking the link in the warning message gives a "page not found", and Googling does not produce anything for this exact error code. I get it whenever I try to ...

- asked by Marius Ladegard Meyer (3 votes)

[Does Compilation option "InlineExternalDefinitions"/"InlineCompiledFunctions" lead to unnecessarily complicated nesting?] (<http://mathematica.stackexchange.com/>)

questions/96147/does-compilation-option-inlineexternaldefinitions-inlinecompiledfunctions-le)

Question: When an external (possibly complicated) definition `f` is used inside a compiled function with `CompilationOption->{"InlineCompiledFunctions"->True}`, does Mathematica really store the ...

- asked by QuantumDot (4 votes)

6.14 Tuesday, September 29, 2015

=====
Top new questions this week:
=====

[Fast calculation of discrete logarithms] <http://mathematica.stackexchange.com/questions/95590/fast-calculation-of-discrete-logarithms>

Does Mathematica have any built-in fast algorithms for calculating discrete logarithms over $(\mathbb{Z}_p)^\times$ (the group of integers modulo p)?

Essentially, for a fixed large prime p , a ...

- asked by 2012rcampion (15 votes)

[What pseudo-random number generators are available to Mathematica users?] <http://mathematica.stackexchange.com/questions/95533/what-pseudo-random-number-generators-are-available-to-mathematica-users>

One would think I should be able answer the question I pose in the title for myself by reading the Documentation Center article `ref/SeedRandom`, but it's not so simple.

That article does give a list ...

- asked by m_goldberg (13 votes), answered by ilian (15 votes)

[Efficient conversion between two partition representations] <http://mathematica.stackexchange.com/questions/95410/efficient-conversion-between-two-partition-representations>

I have a list of distinct expressions. We can represent a partitioning of list in two ways:

As a list of sublists `partitions = a, b, ..., x, y, ..., ...`

As a vector of integer partition ...

- asked by Szabolcs (12 votes), answered by Leonid Shifrin (12 votes)

[Why do singularities disappear when performing convolutions with the Dirac Delta function?] (<http://mathematica.stackexchange.com/questions/95588/why-do-singularities-disappear-when-performing-convolutions-with-the-dirac-delta>)

I am attempting to perform a convolution involving the Dirac Delta function:

$$\int_{-\infty}^{\infty} \frac{1}{t+1} \cdot \delta(t+1) dt$$

I would expect that the result of this integral is ...

- asked by Peter Crowley (11 votes), answered by I_Mariusz (1 vote)

[Determine height of box packed with spheres] (<http://mathematica.stackexchange.com/questions/95566/determine-height-of-box-packed-with-spheres>)

I got such a wonderful answer regarding The Diagonals of a Regular Octagon, so I thought I'd try asking another question we had on our Pizza and Problem quiz activity at College of the Redwoods. The ...

- asked by David (10 votes), answered by KennyColnago (10 votes)

[How to automatically remove text from images?] (<http://mathematica.stackexchange.com/questions/95512/how-to-automatically-remove-text-from-images>)

I'd like to remove the text in the center of images automatically. To use Inpaint[], you need a mask, but I don't have one. So really the problem is:

How to build a mask for an image that contains a ...

- asked by M.R. (10 votes), answered by blochwave (36 votes)

[Front ends gone wild with named slots] (<http://mathematica.stackexchange.com/questions/95351/front-ends-gone-wild-with-named-slots>)

Bug introduced in version 10

Assume the following simple expression

```
{#"Test"}&
```

Now go in front of the # and just start typing another named slot expression. On my system, the front end ...

- asked by halirutan (10 votes)

=====
Greatest hits from previous weeks: =====

[Python-style plots in Mathematica] <http://mathematica.stackexchange.com/questions/84877/python-style-plots-in-mathematica>

I love making plots in Mathematica. And I love to spend a lot of time making high-quality plots that maximize readability and aesthetics. For most cases, Mathematica can make very beautiful images, ...

- asked by Pablo Galindo Salgado (48 votes), answered by halirutan (49 votes)

[How to find all the local minima/maxima in a range] <http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range>

I want to find :

all local maxima in range

all local minima in range

From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (51 votes), answered by Daniel Lichtblau (55 votes)

=====
Can you answer these?
=====

[Time complexity to choose the right overload from the memoized function] <http://mathematica.stackexchange.com/questions/95399/time-complexity-to-choose-the-right-overload-from-the-memoized-function>

If we want to save some outputs of the function, we often use the memoization pattern as follows,

```
f[x_] := f[x] = x
f /@ Range[10^5]
```

If I call this function many times for different arguments, ...

- asked by Sungmin (7 votes)

[Diagonalisation of equations for NDSolve] <http://mathematica.stackexchange.com/questions/95383/diagonalisation-of-equations-for-ndsolve>

I have a linear matrix differential equation and I wish to speed up evaluation by diagonalising using eigenvectors. There is an example in Help for finite elements under "swinging beam" that is ...

- asked by Hugh (2 votes)

[TableDirections example produces an error message] <http://mathematica.stackexchange.com/questions/95321/tabledirections-example-produces-an-error-message>

Bug introduced in 10.0 and persisting through in 10.2

Can anyone replicate this? In Mathematica 10.2 on Win 64:

```
TableForm[{{a, b}, {c, d}, {e, f}}, TableDirections -&gt; Row]
```

I get the ...

- asked by Alan (9 votes)

6.15 Tuesday, September 22, 2015

=====

Top new questions this week:

=====

[How to speed up PDF export in Mathematica 10] (<http://mathematica.stackexchange.com/questions/94776/how-to-speed-up-pdf-export-in-mathematica-10>)

Based on this question: - Version 7 print environment - I set up two 10 page test documents in version 7.0.1 and version 10.1. The version 7 document exported to PDF in 4.18 seconds whereas the ...

- asked by Chris Degnen (19 votes)

[How can I import a huge CSV file quickly?] (<http://mathematica.stackexchange.com/questions/94752/how-can-i-import-a-huge-csv-file-quickly>)

I have two CSV files, each one is around 1 GB of data. When I use Import["file.csv"], it takes a very, very, long time to import the data. So how can I accelerate the import procedure?

The file ...

- asked by m00nlight (17 votes), answered by tesseract (12 votes)

[Is it possible to change the order that symbol definitions are checked? (DownValues vs UpValues)] (<http://mathematica.stackexchange.com/questions/95087/is-it-possible-to-change-the-order-that-symbol-definitions-are-checked-downval>)

Suppose I have the function `f` with the following definition assigned to it:

```
f // ClearAll;
f // Attributes = { HoldAll };
f /: HoldPattern[ f[x_] + f[y_] ] := upvalue;
```

If I evaluate `f[x] + f[y]`, I ...

- asked by rhennigan (15 votes), answered by halirutan (9 votes)

[Is it a bug in Limit?](<http://mathematica.stackexchange.com/questions/95052/is-it-a-bug-in-limit>)

Bug introduced in 9.0 and fixed in 10.0.0

Mathematica 9 on Windows and WolframAlpha says

```
Limit[Sin[Sqrt[x+1]]-Sin[Sqrt[x]],x->Infinity]
```

is `Interval[{-2,2}]`.

But actually the limit is 0.

...

- asked by user15961 (13 votes)

[Add a vector to a list of vectors](<http://mathematica.stackexchange.com/questions/95033/add-a-vector-to-a-list-of-vectors>)

What is the syntax to add `v1` to each vector in `v2`? I know it has to be simple, but I really have searched and not found it.

```
v1 = {a, b, c}
v2 = {{d, e, f}, {g, h, i}, {j, k, l}}
```

i.e., sum them in ...

- asked by DrBubbles (12 votes), answered by Artes (16 votes)

[How to remove a LocalSymbol (or CloudSymbol)?] (<http://mathematica.stackexchange.com/questions/94978/how-to-remove-a-localsymbol-or-cloudsymbol>)

In version 10.2 LocalSymbol can be used to create a persistent store of a variable. Once this is created I don't see a method to remove it. How are they removed.

```
LocalSymbol["MySolution"] = 7
```

...

- asked by Edmund (11 votes), answered by ilian (11 votes)

[How can I route edges manually for a Graph?] (<http://mathematica.stackexchange.com/questions/95013/how-can-i-route-edges-manually-for-a-graph>)

Most graph layouts supported by Mathematica use straight lines for edges; or at least something that only depends on the coordinates of the two adjacent vertices of the edge and nothing else.

A ...

- asked by Szabolcs (10 votes), answered by Silvia (9 votes)

=====

Greatest hits from previous weeks:

=====

[Elegant operations on matrix rows and columns] (<http://mathematica.stackexchange.com/questions/3069/elegant-operations-on-matrix-rows-and-columns>)

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

- asked by sjdh (91 votes), answered by Mr.Wizard (31 votes)

[How to make use of Associations?](<http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>)

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (89 votes), answered by Leonid Shifrin (100 votes)

=====

Can you answer these?

=====

[Why is an imported plot different from the saved one?](<http://mathematica.stackexchange.com/questions/94757/why-is-an-imported-plot-different-from-the-saved-one>)

I have a question concerning the importing of previously saved graphics. So I drew a plot in Mathematica and saved it by right clicking on it and saving it ("save as..."). When I open this (.pdf) ...

- asked by drabus (2 votes)

[Number of 4-colorings of Johnson solids](<http://mathematica.stackexchange.com/questions/95066/number-of-4-colorings-of-johnson-solids>)

I want to know the number of 4-colorings for all Johnson solids. This is equivalent to evaluating the flow polynomial for the corresponding polyhedral graphs at $k = 4$.

I tried the following to get ...

- asked by Athanasios Evangelou (4 votes)

[How to have Mathematica pronounce/speak International Phonetic Alphabet?](<http://mathematica.stackexchange.com/questions/95068/how-to-have-mathematica-pronounce-speak-international-phonetic-alphabet>)

We know that Speak could read out English words and sentences such as

```
Speak["this is a sentence"]
```

Unfortunately, Speak only works for English. Speak[" "] will only yield silence.

In fact ...

- asked by Harry (3 votes)

6.16 Tuesday, September 15, 2015

=====

Top new questions this week:

=====

[Spacing out random walks so they don't overlap] (<http://mathematica.stackexchange.com/questions/94363/spacing-out-random-walks-so-they-dont-overlap>)

From an external simulation program, I have lots of particle tracks which follow random walks, all of which start at or near the origin (0,0). This means that when I plot the walks in Mathematica, ...

- asked by blochwave (20 votes), answered by kirma (8 votes)

[How to avoid the wiggly text on Ticks and Labels when rotating 3D objects] (<http://mathematica.stackexchange.com/questions/94470/how-to-avoid-the-wiggly-text-on-ticks-and-labels-when-rotating-3d-objects>)

Motivation

I'm trying to do a nice animation of the rotation of a ParametricPlot3D . My problem is that the Ticks numbers and AxesLabel text wiggle with an undesirable noisy component as the ...

- asked by rhermans (16 votes), answered by P. Fonseca (8 votes)

[Efficiently generating 2-D Gaussian random fields on the sphere] (<http://mathematica.stackexchange.com/questions/94390/efficiently-generating-2-d-gaussian-random-fields-on-the-sphere>)

Context

A couple of years ago I posted this question for an efficient code to generate an n-D Gaussian random field (sometimes called processes in other fields of research), which has applications in ...

- asked by chris (15 votes)

[Pattern does not match with Orderless head] (<http://mathematica.stackexchange.com/questions/94432/pattern-does-not-match-with-orderless-head>)

Why does the following pattern matching not succeed?


```
ClearAll[f];
SetAttributes[f,Orderless];
HoldForm[f[a,d[],b,c]]/.HoldPattern[f[a,d[],b,z_]]:>{z}
(* f[a,d[],b,c] *)
```

I expected that because f ...

- asked by bdforges (14 votes), answered by Mr.Wizard (8 votes)

[What are the requirements for a well behaved indexed variable? Subscript, ToExpression, Downvalue?] (<http://mathematica.stackexchange.com/questions/94294/what-are-the-requirements-for-a-well-behaved-indexed-variable-subscript-toexpr>)

On writing this answer I needed to call a function, (NonlinearModelFit) with an unknown number of parameters.

We have learned that we should not use Subscript for indexing variables because ...

- asked by rhermans (14 votes), answered by Leonid Shifrin (14 votes)

[What is wrong with RuleCondition here?] (<http://mathematica.stackexchange.com/questions/94413/what-is-wrong-with-rulecondition-here>)

```
Hold@1'5 /. x_Real :> RuleCondition[N@x, True]
Hold@1'5 /. x_Real :> RuleCondition[N@2'5, True]
Hold@2'5 /. x_Real :> RuleCondition[N@2'5, True]
Hold@1'5 /. x_Real :> RuleCondition[N@t, ...
```

- asked by Chris Chiasson (12 votes), answered by Oleksandr R. (10 votes)

[AddTo regression in v10] (<http://mathematica.stackexchange.com/questions/94296/tt-addto-regression-in-v10>)

As we know we can assign special addition rules to symbols by using UpValues:

```
ClearAll[mySymbol]
mySymbol /: mySymbol + x_ := {mySymbol, x}
```

They are used when we directly add something to mySymbol

...

- asked by jkuczm (12 votes), answered by Bob Hanlon (6 votes)

=====
 Greatest hits from previous weeks: =====

[Elegant operations on matrix rows and columns] (<http://mathematica.stackexchange.com/questions/3069/elegant-operations-on-matrix-rows-and-columns>)

Question

The Mathematica tutorial has a section 'Basic Matrix Operations', describing operations like transpose, inverse and determinant. These operations all work on entire matrices. I am missing a ...

- asked by sjdh (90 votes), answered by Mr.Wizard (31 votes)

[What are the most common pitfalls awaiting new users?] (<http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>)

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (266 votes), answered by Michael E2 (142 votes)

=====
 Can you answer these?
 =====

[Interfacing Red Pitaya board with Mathematica] (<http://mathematica.stackexchange.com/questions/94493/interfacing-red-pitaya-board-with-mathematica>)

I just discovered the Red Pitaya board and borrowed a unit to play during this weekend. Surprisingly I did not find any reference to Mathematica on the Red Pitaya forum, nor did I find any reference ...

- asked by Christian Neel (6 votes)

[Using NMaximize to get integer results for a fractional programming problem] (<http://mathematica.stackexchange.com/questions/94549/using-nmaximize-to-get-integer-results-for-a-fractional-programming-problem>)

I have an optimization problem that I am trying to model in mathematica (wolfram cloud, to be precise).

Link to notebook for code described here: ...

- asked by pyrex (3 votes)

[How to speed up summing a large number of vectors] (<http://mathematica.stackexchange.com/questions/94660/how-to-speed-up-summing-a-large-number-of-vectors>)

First let me explain what I am trying to do in my code.

Assume that I send a very short chirp (2,000 ms long) into a domain filled with 20,000 particles randomly scattered in the domain.

The ...

- asked by Mahdi Razaz (3 votes)

6.17 Tuesday, September 8, 2015

=====

Top new questions this week:

=====

[Mathematica 10.0.x freezes in Initializing kernels] (<http://mathematica.stackexchange.com/questions/92931/mathematica-10-0-x-freezes-in-initializing-kernels>)

I updated to Windows 10 and have been running Mathematica fine on it for over a month. For some reason, it has just stopped working. I don't remember any Windows updates occurring which would have ...

- asked by mitcheljh (41 votes), answered by ilian (54 votes)

[How to restore corrupted files?] (<http://mathematica.stackexchange.com/questions/92814/how-to-restore-corrupted-files>)

I have a file that I can't reopen because MMA was "Not Responding" and I had to shut it down.

I found links online to this: <http://support.wolfram.com/kb/12423>

I executed those two instructions in a ...

- asked by Jerry Guern (13 votes), answered by Lou (11 votes)

[No help from ?-command] (<http://mathematica.stackexchange.com/questions/94165/no-help-from-command>)

I recently upgraded to Mathematica 10.2, and there seem to be a problem with the help system. When typing

```
?Integrate
```

I get the following output

```
Integrate
System`
CreateUUID["Info-"]
False
False
...
```

- asked by mickep (12 votes), answered by ilian (11 votes)

[Syntax for using Tooltip in DiscretePlot] (<http://mathematica.stackexchange.com/questions/93990/syntax-for-using-tooltip-in-discreteplot>)

Tooltip works fine in ListPlot:

```
ListPlot[Table[Tooltip[PDF[PoissonDistribution[10], x]], {x, 0, 20}]]
```

in which the decimal value of the distribution at a point is revealed when a cursor is placed ...

- asked by David G. Stork (10 votes), answered by march (10 votes)

[Fast way to pass an array of integers to Java using JLink] (<http://mathematica.stackexchange.com/questions/92878/fast-way-to-pass-an-array-of-integers-to-java-using-jlink>)

I am using a package from java to compress a list of integers, this package provide me two methods, one for compress and other one for uncompress. Each of these methods has a version to int [] arrays ...

- asked by d555 (10 votes), answered by Leonid Shifrin (8 votes)

[How to share a notebook?] (<http://mathematica.stackexchange.com/questions/92848/how-to-share-a-notebook>)

I have a folder in dropbox syncing to my desktop. I tried sharing a notebook file this way, but this generates lots of errors, conflicts, and data loss:

I have notebooks with Dynamic and other ...

- asked by M.R. (10 votes), answered by MarcoB (9 votes)

[How do I remove roads from Mathematica maps?] (<http://mathematica.stackexchange.com/questions/93976/how-do-i-remove-roads-from-mathematica-maps>)

I'm using GeoGraphics and Polygon[Interpreter["USState"]["Colorado"]] to create a map of Colorado and several bordering states. With automatic GeoStyling, I get a decent map with cities and roads ...

- asked by mmta no0b (9 votes), answered by Chip Hurst (17 votes)

=====
 Greatest hits from previous weeks:
 =====

[Alternatives to Mathematica] (<http://mathematica.stackexchange.com/questions/28162/alternatives-to-mathematica>)

Inspired by the recent question Alternatives to LaTeX (currently 58 upvotes) on <http://tex.stackexchange.com/>

Are there any paid-for or open source alternatives to Mathematica which produce equal or ...

- asked by akk (28 votes), answered by Sumit (18 votes)

[What are the most common pitfalls awaiting new users?] (<http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>)

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (264 votes), answered by Michael E2 (141 votes)

=====
 Can you answer these?
 =====

[Help needed for understanding NDSolve architecture -Vacuum Heating Simulation] (<http://mathematica.stackexchange.com/questions/94163/help-needed-for-understanding-ndsolve-architecture-vacuum-heating-simulation>)

I am a beginner in mathematica and I am facing a problem that is way bigger than my knowledge..

I am trying to simulate a simplified version of Brunel Effect, which is a Laser-Plasma interaction ...

- asked by Cosimo (2 votes)

[Strange behavior of autocomplete for ColorData] (<http://mathematica.stackexchange.com/questions/94135/strange-behavior-of-autocomplete-for-colordata>)

I'm seeing very weird behavior when autocompleting:

Not sure if this is a bug. Is it?

(I have OSX v10.2)

- asked by M.R. (5 votes)

[Open file menu bug with ubuntu dark theme] (<http://mathematica.stackexchange.com/questions/92825/open-file-menu-bug-with-ubuntu-dark-theme>)

I'm using Mathematica on a Ubuntu with a dark theme. When I click on the open file menu option, it shows up with a white background and white letters. I can only see something if the folder or file is ...

- asked by Hugo Andrade (3 votes)

6.18 Tuesday, September 1, 2015

=====
 Top new questions this week:
 =====

[Advice for Mathematica as Mathematician's Aid] (<http://mathematica.stackexchange.com/questions/92686/advice-for-mathematica-as-mathematicians-aid>)

I use Mathematica mainly as an aid in symbolic attacks on problems, usually intermediate or harder and often number theoretic. While Reduce, Simplify, et al. are remarkably powerful, they of course ...

- asked by CarlEdman (29 votes), answered by MarcoB (20 votes)

[How can I evaluate untrusted Mathematica code in a sandbox?] (<http://mathematica.stackexchange.com/questions/92347/how-can-i-evaluate-untrusted-mathematica-code-in-a-sandbox>)

Is there any way to build a sandbox to evaluate untrusted Mathematica expressions in order to prevent them from having (malicious or accidental) harmful side effects?

Context: I'm developing a system ...

- asked by ibeatty (21 votes), answered by Stefan R (10 votes)

[Efficient lazy weak compositions] (<http://mathematica.stackexchange.com/questions/92647/efficient-lazy-weak-compositions>)

In Mathematica all weak k-compositions of integer n can be generated using permutations of integer partitions:

```
ClearAll[weakCompositionsPermPart]
weakCompositionsPermPart[n_Integer, ...
```

- asked by jkuczm (19 votes), answered by jkuczm (18 votes)

[SeriesData sucks when it can. How do I keep SeriesData from sucking?] (<http://mathematica.stackexchange.com/questions/92646/seriesdata-sucks-when-it-can-how-do-i-keep-seriesdata-from-sucking>)

When I run

```
Series[f[x]*Sin[x],{x,0,3}, Analytic->False]
```

I get:

$$f[x](x-x^3/3+0[x]^4)$$

as expected. In FullForm, this is

```
Times[f[x],SeriesData[x,0,List[1,0,Rational[-1,6]],1,4,1]]
```

But ...

- asked by QuantumDot (16 votes)

[How to zero (or replace) the diagonal of a square matrix?] (<http://mathematica.stackexchange.com/questions/92666/how-to-zero-or-replace-the-diagonal-of-a-square-matrix>)

Zeroing the diagonal of a square matrix is an operation I need frequently, but somehow I still haven't managed to find an elegant solution that satisfies all these requirements: works with both ...

- asked by Szabolcs (14 votes), answered by ciao (12 votes)

[Splitting a list into increasing sublists] (<http://mathematica.stackexchange.com/questions/92527/splitting-a-list-into-increasing-sublists>)

I have a list of numbers (say, for example, 1,2,3,4,3,2,1,2,3,4,3,2), and I want to split it into sublists so that each sublist is the (smallest) sublist whose sum is larger than the preceding one. ...

- asked by rogerl (14 votes), answered by Chris Degnen (4 votes)

[How to detect loops in a vector field?] (<http://mathematica.stackexchange.com/questions/92425/how-to-detect-loops-in-a-vector-field>)

Given a vector field and I'd like to detect if there are streamlines in closed patterns. For example, if the input is a vector field like this:

```
image = ColorConvert[Rasterize[\[Infinity], ImageSize ...
```

- asked by M.R. (14 votes), answered by niki (19 votes)

```
=====
Greatest hits from previous weeks:
=====
```

[Understanding differences between Maple and Mathematica in examples picked by Maplesoft] (<http://mathematica.stackexchange.com/questions/60124/understanding-differences-between-maple-and-mathematica-in-examples-picked-by-ma>)

I am reading the document How Maple Compares to Mathematica. On page 15 there is an example where Mathematica produces wrong results. Does anybody know why?

MAPLE:

MATHEMATICA:

Also on page 17 ...

- asked by mrz (31 votes), answered by Mr.Wizard (37 votes)

[How to express trigonometric equation in terms of of given trigonometric function?] (<http://mathematica.stackexchange.com/questions/434/how-to-express-trigonometric-equation-in-terms-of-of-given-trigonometric-functio>)

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$$\sin^2[x] + \cos^2[x] = 1$$

$$\frac{\sin[x]}{\cos[x]} = \tan[x]$$

...

- asked by Prashant Bhate (23 votes), answered by Simon (27 votes)

=====

Can you answer these?

=====

[Creating a certain image (3D shadows, highlighted intersections)] (<http://mathematica.stackexchange.com/questions/92494/creating-a-certain-image-3d-shadows-highlighted-intersections>)

I would like to learn how to code within Mathematica the following picture:

I tried using

```
planarShadow[x_, direction_, normal_, darkShadow_: True] :=
Module[{d, n}, d = Normalize[direction];
...

```

- asked by boldbrandywine (5 votes)

[How to stop auto loading of previously opened notebooks] (<http://mathematica.stackexchange.com/questions/92699/how-to-stop-auto-loading-of-previously-opened-notebooks>)

I'm trying to prevent Mathematica from opening previously opened notebooks when I start it up. I'm using version 10.0.0.0 on Mac OS X Yosemite. I've dug around in the preferences, and have tried ...

- asked by Peter Wills (2 votes)

[Visualising a 1-(50,15,15) design] (<http://mathematica.stackexchange.com/questions/92605/visualising-a-1-50-15-15-design>)

The problem I have is the visualisation of a 1 - (50, 15, 15) design. That is a set of 50 points and 50 blocks (lines), so that each point is on 15 lines, and each line contains 15 points.

My ...

- asked by user32681 (4 votes)

6.19 Tuesday, August 25, 2015

=====

Top new questions this week:

=====

[Strange behavior with Cases and Position with SetDelayed] (<http://mathematica.stackexchange.com/questions/91917/strange-behavior-with-cases-and-position-with-setdelayed>)

I feel like I must be missing something simple and obvious here, but this has me scratching my head.

This works as expected:

```
list = {f[a], f[b]};
Cases[list, f[x_] :> x] -> Position[list, ...
```

- asked by rhennigan (16 votes), answered by Leonid Shifrin (15 votes)

[Scraping High-Res images from the MoMA and the Van Gogh Museum websites] (<http://mathematica.stackexchange.com/questions/91982/scraping-high-res-images-from-the-moma-and-the-van-gogh-museum-websites>)

Many art websites allow the user to zoom into an image to see it at high resolution by using image tiles. It is great on the website, but presents problems if one wishes to compile a complete high ...

- asked by martin (13 votes), answered by belisarius (16 votes)

[best practices for saving Datasets and TemporalData to a SQL database] (<http://mathematica.stackexchange.com/questions/92020/best-practices-for-saving-datasets-and-temporaldata-to-a-sql-database>)

I have been working with a simulation tool that generates large volumes of data, and it's time to start saving this to a proper database. Is there an established mechanism for saving TemporalData ...

- asked by Michael Stern (12 votes), answered by Leonid Shifrin (6 votes)

[How to determine if a function is continuous?] (<http://mathematica.stackexchange.com/questions/91877/how-to-determine-if-a-function-is-continuous>)

I wish to write code for Riemann Stieltjes integrals in Mathematica.

A necessary condition for the theorem to hold is that the function must be continuous. The domain of the function is a closed ...

- asked by Katherine (12 votes)

[How to service preemptive computations while running a LibraryLink function?] (<http://mathematica.stackexchange.com/questions/91893/how-to-service-preemptive-computations-while-running-a-librarylink-function>)

Cross-posted to Wolfram Community

The following is from the comparison between WSTP (MathLink) and LibraryLink in the documentation:

When the Wolfram Language is waiting for a WSTP application ...

- asked by Szabolcs (11 votes)

[Why does this LibraryLink example of LinkObject based passing not work? Bug or user error?] (<http://mathematica.stackexchange.com/questions/92047/why-does-this-librarylink-example-of-linkobject-based-passing-not-work-bug-or-u>)

There's an example of LinkObject-based passing in the LibraryLink documentation. Unfortunately the cell in the documentation notebook is corrupted, but to skip that problem I'm going to reproduce it ...

- asked by Szabolcs (9 votes), answered by ilian (6 votes)

[Form of citation for data via Wolfram Mathematica] (<http://mathematica.stackexchange.com/questions/92179/form-of-citation-for-data-via-wolfram-mathematica>)

What citation or reference should I adhere to if I'm using curated data obtained via Mathematica? I'm talking about data, or eg. plots thereof, obtained using functions such as SatelliteData, ...

- asked by zentient (9 votes), answered by V-J (5 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Generating visually pleasing circle packs] (<http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>)

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (80 votes), answered by level1807 (49 votes)

[What are the most common pitfalls awaiting new users?] (<http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awa-iting-new-users>)

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (263 votes), answered by Michael E2 (139 votes)

==== Can you answer these?
====

[Intersecting RegionPlots] (<http://mathematica.stackexchange.com/questions/92252/intersecting-regionplots>)

Does the Mathematica graphics system have any concept of intersecting regionplots? I've found about intersecting graphics but not regionplots so far. For example, if I want to show the intersection of ...

- asked by Elsa (3 votes)

[MathLink (WSTP) vs LibraryLink performance] (<http://mathematica.stackexchange.com/questions/91887/mathlink-wstp-vs-librarylink-performance>)

Has anyone benchmarked LibraryLink vs MathLink when passing large arrays?

Specifically I would like to know how performance compares when using the following to pass and return a large array:

...

- asked by Szabolcs (6 votes)

[Issues adding properties to multigraph] (<http://mathematica.stackexchange.com/questions/92014/issues-adding-properties-to-multigraph>)

Today I was working with a large multi-graph with properties on the edges when I discovered that properties aren't assigned as expected.

My preferred graph construction method is to specify ...

- asked by Martin John Hadley (2 votes)

6.20 Tuesday, August 18, 2015

=====

Top new questions this week:

=====

[Given an exact formula, how can Mathematica find a probability distribution whose PDF matches it?](<http://mathematica.stackexchange.com/questions/91408/given-an-exact-formula-how-can-mathematica-find-a-probability-distribution-whos>)

So, given some data, Mathematica 10.2 can now attempt to figure out what probability distribution might have produced it. Cool! But suppose that, instead of having data, we have something that is in ...

- asked by Seth Chandler (19 votes), answered by Vitaliy Kaurov (12 votes)

[Improving speed of code computing number of nonrepeating partitions] (<http://mathematica.stackexchange.com/questions/91613/improving-speed-of-code-computing-number-of-nonrepeating-partitions>)

I need to answer the following for a number of parameters: How many ways can the integer k be written as a sum of n different integers ranging from 1 to m ?

My initial attempt was the ...

- asked by jorgen (16 votes), answered by ciao (14 votes)

[Implementing the PCG random number generator] (<http://mathematica.stackexchange.com/questions/91497/implementing-the-pcg-random-number-generator>)

PCG ("permuted congruential generator") is a recently-introduced random number generator.

PCG is a family of simple fast space-efficient statistically good algorithms for random number generation. ...

- asked by pdmclean (10 votes), answered by Guess who it is. (10 votes)

=====
 Greatest hits from previous weeks: =====

[How to make use of Associations?] (<http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>)

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (87 votes), answered by Leonid Shifrin (96 votes)

[3D surface that looks like a virus] (<http://mathematica.stackexchange.com/questions/74193/3d-surface-that-looks-like-a-virus>)

I have been recently using Mathematica for composing animations that are part of the supplementary information of my papers.

I am currently trying to build an animation that involves a viral ...

- asked by user2098 (16 votes), answered by Chris Degnen (18 votes)

=====
 Can you answer these?
 =====

[Restarting random number generators where you left off] (<http://mathematica.stackexchange.com/questions/91612/restarting-random-number-generators-where-you-left-off>)

I have code that uses both RandomReal and RandomInteger a number of times to produce a sequence of n data sets. After closing the notebook and quitting the kernel, I would like to be able to start ...

- asked by user26718 (7 votes)

[Swinging Beam example from Help. Not Understanding/Not Working] (<http://mathematica.stackexchange.com/questions/91393/swinging-beam-example-from-help-not-understanding-not-working>)

To help me understand finite element analysis with Mathematica I have been reading the Finite Element Method User Guide in Help and am stuck on the example in Coupled PDEs. Here there is a static beam ...

- asked by Hugh (2 votes)

[Mathematica 10 Audio Export Issue] (<http://mathematica.stackexchange.com/questions/91649/mathematica-10-audio-export-issue>)

Summary of the problem: When exporting data as an audio file (AIFF/WAV etc.), there appears to be unwanted scaling and offset in the data such that the minimum and maximum values are forced to be -1 ...

- asked by Rahul (2 votes)

6.21 Tuesday, August 11, 2015

=====

Top new questions this week:

=====

[Listable compiled function crashes the kernel with "no more memory available"] (<http://mathematica.stackexchange.com/questions/90081/listable-compiled-function-crashes-the-kernel-with-no-more-memory-available>)

Bug introduced in 9.0.0 and persisting through 10.2.0

I am trying to speed up a function that involves continued fractions. Since Continued-Fraction cannot be compiled and the alternative way with ...

- asked by shrx (16 votes)

[Can Mathematica Export Shapefiles?] (<http://mathematica.stackexchange.com/questions/90063/can-mathematica-export-shapefiles>)

Mathematica is great at importing ESRI shapefiles (.shp).

```
Import["http://exampledata.wolfram.com/usamap.zip", "Graphics"]
```

But it seems like it's a glaring omission that it can't export them. ...

- asked by kale (16 votes), answered by kale (21 votes)

[Integration of a PDE solution over a custom-defined subdomain] (<http://mathematica.stackexchange.com/questions/90094/integration-of-a-pde-solution-over-a-custom-defined-subdomain>)

Preamble: In my previous question I raised a problem of a custom-chosen integration of the solution of a PDE. In that case it was an integration along a line lying within the PDE domain. The solution ...

- asked by Alexei Boulbitch (11 votes), answered by Michael E2 (6 votes)

[Detect if code is running in the cloud] (<http://mathematica.stackexchange.com/questions/91202/detect-if-code-is-running-in-the-cloud>)

Wolfram offers several services for running code in the cloud: Mathematica Online, Programming Cloud, CloudEvaluate, etc.

How can a piece of code detect if it is being run in the cloud or the ...

- asked by Szabolcs (11 votes), answered by Leonid Shifrin (10 votes)

[Fastest way to sum the upper triangle] (<http://mathematica.stackexchange.com/questions/90067/fastest-way-to-sum-the-upper-triangle>)

I feel like this is an recurring question: if there's a symmetric matrix whose diagonal is not all 0, how could I get the sum of the part of it that's above the diagonal as fast as possible?

Small ...

- asked by arax (10 votes), answered by MarcoB (3 votes)

[Possible bug in VonMisesDistribution?] (<http://mathematica.stackexchange.com/questions/90019/possible-bug-in-vonmisesdistribution>)

Observe:

```
FullSimplify[PDF[VonMisesDistribution[\[Mu], 0], x], (((-Pi + \[Mu] & ) *lt; ) = (x & )
Pi + \[Mu]) == FullSimplify[PDF[UniformDistribution[{\[Mu] - Pi, \[Mu] + Pi}], x],
  (((-Pi + \[Mu] & ) *lt; ) = (x & ) *lt; ) = Pi + \[Mu]]
```

(* True *)

...

- asked by ciao (10 votes), answered by Karsten 7. (7 votes)

[Faster position-based duplicate removal in a ragged array?]

(<http://mathematica.stackexchange.com/questions/91191/faster-position-based-duplicate-removal-in-a-ragged-array>)

Take a ragged 2D array:

```
rArray={4, 2, 1, 0, 2, 2, 0, 0, 3, 3, 3, 4, 0, 3, 4
```

I need to "deduplicate" this, where a duplicate is any element of a sublist where that element exists at the ...

- asked by ciao (9 votes), answered by sakra (7 votes)

=====
Greatest hits from previous weeks: =====

[How to ask Mathematica to imitate Andy Warhol's pop-art painting?] (<http://mathematica.stackexchange.com/questions/59132/how-to-ask-mathematica-to-imitate-andy-warhols-pop-art-painting>)

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

- asked by Putterboy (43 votes), answered by belisarius (50 votes)

[How to find the position of elements in a list satisfying criteria] (<http://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria>)

Say I have a list $x = \{2, 4, 6, 8, 10\}$ and I want to find out the positions of the elements that are greater than 7.

`Select[x, # > 7 &]` gives the elements themselves, and `Position[x, # > 7 &]` gives the ...

- asked by PeterR (25 votes), answered by Guess who it is. (19 votes)

=====
Can you answer these? =====

[Mathematica package for explicit matrix representations of group generators?] (<http://mathematica.stackexchange.com/questions/89964/mathematica-package-for-explicit-matrix-representations-of-group-generators>)

While there are several packages that are capable of working with weights and roots (for example LieArt), I couldn't find any package that spits out explicit matrices for the generators, for example ...

- asked by JakobH (4 votes)

[Mathematica claiming two Weierstrass half-periods not independent] (<http://mathematica.stackexchange.com/questions/91322/mathematica-claiming-two-weierstrass-half-periods-not-independent>)

I have the following code:

```
f[x_, y_, p_] = (p*(E^(Pi/y)*x + 2*x*Cosh[(2*Pi*x)/y] -
  2*Sinh[(2*Pi*x)/y]))/(y*(E^(Pi/y) + 2*Cosh[(2*Pi*x)/y]));
```

```
y1 = 1/11;
```

```
t1 = I*y1;
```

```
p1 = 1;
```

```
xf = ...
```

- asked by spietro (1 vote)

[Solving for the roots of a trilinear system of polynomials] <http://mathematica.stackexchange.com/questions/91254/solving-for-the-roots-of-a-trilinear-system-of-polynomials>

I have been trying to solve for the roots of the following system of trilinear polynomials:

```
eq1 = a6 x y + a5 x z + a4 y z + a3 x + a2 y + a1 z + a0;
```

```
eq2 = x y z + b6 x y + b5 x z + b4 y z + b3 x + ...
```

- asked by Kagaratsch (2 votes)

6.22 Tuesday, August 4, 2015

=====

Top new questions this week:

=====

[Upgrade to Windows 10] <http://mathematica.stackexchange.com/questions/89407/upgrade-to-windows-10>

Can users of Mathematica on Windows 7 or Windows 8/8.1 upgrade their computers to Windows 10 a process that began today? Does Mathematica work? Are all the settings, licenses, access to files and ...

- asked by Lubos Motl (23 votes), answered by RunnyKine (21 votes)

[Solve slower in versions 9 and 10] <http://mathematica.stackexchange.com/questions/89650/solve-slower-in-versions-9-and-10>

With some systems of equations, Solve is much slower in versions 9 and 10 than in earlier versions, apparently because it is doing more simplification of the results.

With the following example ...

- asked by Simon Rochester (21 votes), answered by Michael E2 (11 votes)

[Speeding up the built-in Rudin-Shapiro and Thue-Morse sequence functions] <http://mathematica.stackexchange.com/questions/89345/speeding-up-the-built-in-rudin-shapiro-and-thue-morse-sequence-functions>

Version 10.2 introduced two well-studied sequences as functions: the (Golay-)Rudin-Shapiro sequence (`RudinShapiro[]`) and the (Prouhet-)Thue-Morse sequence (`ThueMorse[]`). Since these functions are ...

- asked by Guess who it is. (19 votes), answered by Oleksandr R. (22 votes)

[Change in Lighting and Show in V10?] <http://mathematica.stackexchange.com/questions/89491/change-in-lighting-and-show-in-v10>

According the documentation for Show:

Options explicitly specified in Show override those included in the graphics expression. The lists of non-default options in the `Subscript[g, i]` are ...

- asked by Michael E2 (13 votes), answered by Mr.Wizard (7 votes)

[Global' context not empty at startup in v10.2.0] <http://mathematica.stackexchange.com/questions/89686/global-context-not-empty-at-startup-in-v10-2-0>

Bug introduced in 10.2 and persisting through 10.2 or later

Note that the analysis of this problem revealed a different problem than in Potential pollution of Global' context in fresh kernel (see ...

- asked by Chen Stats Yu (12 votes), answered by Michael E2 (8 votes)

[How to monitor the progress of training a classifier?] <http://mathematica.stackexchange.com/questions/89444/how-to-monitor-the-progress-of-training-a-classifier>

I've had `p = Predict[x > y]` running for hours and I have now idea if I should kill it or not.

I'm looking for some rough bounds for an estimate of how long `Predict[]` or `Classify[]` will take to ...

- asked by M.R. (12 votes), answered by Sebastian (12 votes)

[All value types for a symbol?] <http://mathematica.stackexchange.com/questions/89607/all-value-types-for-a-symbol>

Robby Villegas here shows a nice way to see all the types associated with a symbol. He sets a symbol, `valueTypes`, to an explicit list of the values types in version 3.0 of Mathematica (I took off his ...

- asked by Reb.Cabin (11 votes), answered by Reb.Cabin (6 votes)

=====
 Greatest hits from previous weeks: =====

[How to perform a multi-peak fitting?] <http://mathematica.stackexchange.com/questions/26336/how-to-perform-a-multi-peak-fitting>

I am wondering how to implement the multi-peak detecting and fitting in Mathematica. Following is an example of fitting the data using three peaks (such that the data `peak1 + peak2 + peak3`).

The ...

- asked by Everett You (27 votes), answered by Silvia (29 votes)

[Get a "step-by-step" evaluation in Mathematica] <http://mathematica.stackexchange.com/questions/148/get-a-step-by-step-evaluation-in-mathematica>

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it? If so, how does one do it?

...

- asked by Skydreamer (75 votes), answered by Guess who it is. (61 votes)

==== Can you answer these?
====

[Fast Partition of list at depth 2] <http://mathematica.stackexchange.com/questions/89809/fast-partition-of-list-at-depth-2>

I am looking to partition a list up at a certain depth level. Following code should demonstrate what I mean:

```
test = Table[Random[], {1000}, {32}, {32}];

result = Map[Partition[#, {5, 5}, 1] &, ...
```

- asked by Julian Francis (6 votes)

[ListLogPlot error when forcing y axes start at 0] <http://mathematica.stackexchange.com/questions/89524/listlogplot-error-when-forcing-y-axes-start-at-0>

I came across an error I can not circumvent.

When plotting the following:

```
ListLogPlot[Table[1/x, {x, 1, 100}]]
```

I receive a functioning plot. If I now want to add a specific PlotRange, i.e.

...

- asked by mondo (4 votes)

[DSolve returns an answer that is not a solution] <http://mathematica.stackexchange.com/questions/89550/dsolve-returns-an-answer-that-is-not-a-solution>

Investigating DSolve misses a solution of a differential equation, I came across this odd behavior of DSolve.

The following DSolve command returns an answer to the ODE but the solutions do not ...

- asked by Michael E2 (5 votes)

6.23 Tuesday, July 28, 2015

=====

Top new questions this week:

=====

[A With expression local variable specification without head List] <http://mathematica.stackexchange.com/questions/88920/a-with-expression-local-variable-specification-without-head-list>

I just noticed a new form of With in its documentation:

`With[$x=x_0$, $expr$]`

specifies that all occurrences of the symbol x in $expr$ should be replaced by x_0 .

Note the lack of braces ...

- asked by jkuczma (17 votes), answered by Itai Seggev (9 votes)

[New AssociationThread forms in 10.2?] <http://mathematica.stackexchange.com/questions/88940/new-associationthread-forms-in-10-2>

Is this another case of "documented" but "not implemented" ? or at least it is not explained clearly as I cannot make it work:

Two new forms appears in the new 10.2 doc. of AssociationThread (the ...

- asked by SquareOne (17 votes)

[Visualizing Type System Operations] <http://mathematica.stackexchange.com/questions/89080/visualizing-type-system-operations>

With the introduction of Dataset in version 10, Mathematica acquired a static type-checking subsystem. A fair number of dataset-related questions here on MSE concern the operation of that type ...

- asked by WReach (16 votes), answered by WReach (16 votes)

[Dataset seems to break Information] <http://mathematica.stackexchange.com/questions/89036/dataset-seems-to-break-information>

Bug present in version 10.2

My little function, from pre-10.2 ,to turn a headed table into a Dataset.

```
toDataset[table_List] :=
  Dataset@Association /@ (Function[r, Thread[First[r] -&gt; #] ...
```

- asked by Ymareth (16 votes), answered by WReach (14 votes)

[Initial values in Manipulate are hijacked by existing global variable values] <http://mathematica.stackexchange.com/questions/89108/initial-values-in-manipulate-are-hijacked-by-existing-global-variable-values>

Is the following behaviour a bug? It's the same in all versions between 9.0-10.2.0.

Let's try this simple Manipulate with the initial value of a set to 1:

```
Manipulate[Style[a, Large], {{a, 1}, 0, ...
```

- asked by Szabolcs (13 votes)

[Undocumented fourth parameter of Collect; how long has it been there?] <http://mathematica.stackexchange.com/questions/88781/undocumented-fourth-parameter-of-collect-how-long-has-it-been-there>

While tinkering with How to get a list of monomials of a polynomial without coefficients? on a whim I tried a fourth argument in Collect and found:

```
Collect[(x + y + z + 1)^2, {x, y}, foo, bar]
```

...

- asked by Mr.Wizard (13 votes)

[How can we show the boundary of a WordCloud shape?] <http://mathematica.stackexchange.com/questions/88846/how-can-we-show-the-boundary-of-a-wordcloud-shape>

WordCloud can arrange the words inside a shape.


```
data = EntityValue[CountryData[], {"Name", "Population"}];
WordCloud[data, Disk[], WordOrientation -&gt; "Random", Frame -&gt; True]
```

As you can see ...

- asked by Szabolcs (12 votes), answered by Sjoerd C. de Vries (12 votes)

=====
Greatest hits from previous weeks: =====

Parallel and perpendicular symbol from Mathematica to L^AT_EX <http://mathematica.stackexchange.com/questions/46538/parallel-and-perpendicular-symbol-from-mathematica-to-latex>

I want to get the following expression from Mathematica to L^AT_EX

$$\begin{bmatrix} E_{\parallel} \\ E_{\perp} \end{bmatrix}$$

I have tried to use inbuilt 'symbol' character from the special ...

- asked by Steve Hatcher (4 votes), answered by Sjoerd C. de Vries (9 votes)

[Generating visually pleasing circle packs] <http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (79 votes), answered by level1807 (49 votes)

=====
Can you answer these? =====

[Call library function in compile] <http://mathematica.stackexchange.com/questions/89134/call-library-function-in-compile>

On the Wolfram official website, there is an example of calling library function in a compiled function:

```
Needs["CompiledFunctionTools`"]
```

...

- asked by xslittlegrass (2 votes)

[MMA breaks down when DSolve -ing a third-order linear ODE] <http://mathematica.stackexchange.com/questions/88862/mma-breaks-down-when-dsolve-ing-a-third-order-linear-ode>

My code is:

```
DSolve[y'''[x] + (x^3 + a^3) y[x] == 0, y[x], x]
```

It should be noted that similar code not only meets the similar problem but also returns more warning messages:

```
DSolve[y'''[x] + (x^3 ...
```

- asked by WateSoyan (9 votes)

[HistogramList is much Slower in 10.2 vs 10.1] <http://mathematica.stackexchange.com/questions/88992/histogramlist-is-much-slower-in-10-2-vs-10-1>

While I was running a code I wrote using version 10.1, I noticed that in version 10.2 the running time of the same code was more than twice as long. After some digging, I figured out the culprit is ...

- asked by RunnyKine (10 votes)

6.24 Tuesday, July 21, 2015

=====

Top new questions this week:

=====

[How do I remove grid from this photo?] <http://mathematica.stackexchange.com/questions/88494/how-do-i-remove-grid-from-this-photo>

I found this cat a month ago, and I'm not his owners' friend so the mosquito grid was the inevitable problem. I would like to post-process this photo to get rid of it, but I don't know exactly how ...

- asked by Nakilon (19 votes), answered by niki (33 votes)

[What is behind Mathematica's experimental 'FindFormula' function?] <http://mathematica.stackexchange.com/questions/88511/what-is-behind-mathematicas-experimental-findformula-function>

In version 10.2 there is a new experimental function: FindFormula.

I suspect that a genetic programming algorithm (symbolic regression) is behind this new feature but I can't find any references.

My ...

- asked by vonjd (18 votes)

[Is there a GraphicsPrimitiveQ (or a complete list of Heads of graphics primitives)?] <http://mathematica.stackexchange.com/questions/88342/is-there-a-graphics-primitiveq-or-a-complete-list-of-heads-of-graphics-primitive>

For various reasons related to workflow associated with creating figures for journals, I am creating functions that will accept graphics primitives and a set of options and spit out a Graphics object ...

- asked by march (16 votes), answered by rcollyer (13 votes)

[Symbolic area calculation for a parametric self-intersecting closed curve] <http://mathematica.stackexchange.com/questions/88623/symbolic-area-calculation-for-a-parametric-self-intersecting-closed-curve>

The parametric equation of the curve is:

$$\begin{cases} x & \text{amp;} = -9 \sin(2t) - 5 \sin(3t) \\ y & \text{amp;} = 9 \cos(2t) - 5 \cos(3t) \end{cases} \quad t \in [0, 2\pi]$$

which can be easily ...

- asked by LCFactorization (13 votes), answered by belisarius (21 votes)

[What's the point of ContainsAll, ContainsAny and friends?] <http://mathematica.stackexchange.com/questions/88295/whats-the-point-of-containsall-containsany-and-friends>

Mathematica 10.2 contains a few new functions that test set containment: ContainsAll, ContainsAny and a few others. The documentation mentions that these are equivalent to existing functions like ...

- asked by niki (12 votes)

[10.2 Dataset extraneous print using Transpose] <http://mathematica.stackexchange.com/questions/88238/10-2-dataset-extraneous-print-using-transpose>

Introduced in 10.2, fixed by paclet update (GeneralUtilities 10.2.1).

This is probably patch code in 10.2. Is there a way to turn off print with Transpose?

```
ds = &lt;|"k1" -&gt; &lt;|"a" -&gt; 1, ...
```

- asked by alancalvitti (11 votes), answered by Michael E2 (12 votes)

[What will happen if I set ExclusionsStyle for points in 2D plot?] <http://mathematica.stackexchange.com/questions/88479/what-will-happen-if-i-set-exclusionsstyle-for-points-in-2d-plot>

For example

```
f[x_] := (x^5 - 4 x^2 + 1)/(x - 1/2);
Plot[f[x], {x, -1, 2}, Exclusions -&gt; {f[x] == 0}, ExclusionsStyle -&gt; Dashed]
```

Has the ExclusionsStyle -> Dashed option done anything ...

- asked by xzczd (11 votes), answered by xzczd (13 votes)

==== Greatest hits from previous weeks: =====

[No weekends please] <http://mathematica.stackexchange.com/questions/78735/no-weekends-please>

I need to get the DateValues of the last 30 days (starting from yesterday, not today!) excluding Saturdays and Sundays. I want that the dates are German time (GMT + 1). The only solution I have found ...

- asked by eldo (4 votes), answered by Pickett (12 votes)

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (18 votes), answered by Artes (14 votes)

==== Can you answer these? =====

[RegionPlot, RegionPlot3D and differing embedding dimensions] <http://mathematica.stackexchange.com/questions/88584/regionplot-regionplot3d-and-differing-embedding-dimensions>

RegionPlot seems to be for plotting regions with an embedding dimensions of 2 only, and RegionPlot3D for regions with an embedding dimensions of 3.

Yet passing a region of the wrong embedding ...

- asked by Szabolcs (5 votes)

[How can I force the use of sparse diagonalization methods?] <http://mathematica.stackexchange.com/questions/88551/how-can-i-force-the-use-of-sparse-diagonalization-methods>

When I evaluate the Eigenvalues function on a very large (e.g. $2^{16} \times 2^{16}$) sparse matrix, Mathematica says something like:

Because finding 65536 out of the 65536 eigenvalues and/or eigenvectors ...

- asked by P.R. (4 votes)

[How to Copy formatted code without backslashes added?] <http://mathematica.stackexchange.com/questions/88539/how-to-copy-formatted-code-without-backslashes-added>

By default code copied from the FrontEnd is formatted with backslashes added at the ends of lines. For example, evaluating in a Notebook

Range[40]

and copying the output produces the following when ...

- asked by Alexey Popkov (9 votes)

6.25 Tuesday, July 14, 2015

=====

Top new questions this week:

=====

[New behavior of PlotRange in Mathematica 10] <http://mathematica.stackexchange.com/questions/87808/new-behavior-of-plotrange-in-mathematica-10>

In Mathematica 10, when I plot data that has small changes around some non-zero value, the plot chooses a PlotRange that "collapses" the data so that the variations cannot be seen. The only way I can ...

- asked by Greg Cook (17 votes), answered by Mr.Wizard (13 votes)

[Simple Matrix multiplication takes very long] <http://mathematica.stackexchange.com/questions/87857/simple-matrix-multiplication-takes-very-long>

Bug introduced in 10.1.0

I came across some strange behaviour during a computation involving matrices with symbolic values. It is reproduced below.

Multiplying a random 30x30 array with symbolic ...

- asked by A. Roy (14 votes)

[Why does leaving and re-entering a context lose values defined in that context?] <http://mathematica.stackexchange.com/questions/88147/why-does-leaving-and-re-entering-a-context-lose-values-defined-in-that-context>

I'm getting unexpected behavior when beginning a new context, leaving it, and then re-entering it. Specifically, when re-entering the context, symbols that had been previously defined in that context ...

- asked by ibeatty (12 votes), answered by Simon Rochester (13 votes)

[Use of Key to extract a key value in Associations not working in V10.1] <http://mathematica.stackexchange.com/questions/88034/use-of-key-to-extract-a-key-value-in-associations-not-working-in-v10-1>

V10.1:

```
&lt;|a -&gt; 1|&gt;[Key @ a]
(* Missing["KeyAbsent", Key[a]]*)
```

V10.0:

```
&lt;|a -&gt; 1|&gt;[Key @ a]
(* 1 *)
```

Bug or Design Change?

- asked by Ronald Monson (11 votes), answered by Szabolcs (8 votes)

[Using Mathematica to solve a probability problem] <http://mathematica.stackexchange.com/questions/88178/using-mathematica-to-solve-a-probability-problem>

The problem is from Principles of Statistics by M.G. Bulmer:

In a certain survey of the work of chemical research workers, it was found, on the basis of extensive data, that on average each man ...

- asked by billc (10 votes), answered by ciao (11 votes)

[What does this message mean and how serious is it?] <http://mathematica.stackexchange.com/questions/87891/what-does-this-message-mean-and-how-serious-is-it>

I had some Mathematica files on over which recently I have faced to this message:

However, after searching, I have seen some blogs in Mathematica SE or in somewhere else about that, but I could not ...

- asked by mr.0093 (9 votes), answered by Mr.Wizard (17 votes)

[Remove static objects from an image sequence] <http://mathematica.stackexchange.com/questions/87901/remove-static-objects-from-an-image-sequence>

Is it possible to remove static objects/pixels from a sequence of images?

Lets say I have a black square in the middle of my white picture (white background) and a black circle is orbiting around it. ...

- asked by PH13 (9 votes), answered by Pickett (6 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Multivariable Taylor expansion does not work as expected] <http://mathematica.stackexchange.com/questions/15023/multivariable-taylor-expansion-does-not-work-as-expected>

The basic multivariable Taylor expansion formula around a point is as follows:

$$f(\mathbf{r} + \mathbf{a}) = f(\mathbf{r}) + (\mathbf{a} \cdot \nabla)f(\mathbf{r}) + \frac{1}{2!}(\mathbf{a} \cdot \nabla)^2 f(\mathbf{r}) + \dots$$

- asked by matheorem (15 votes), answered by Jens (21 votes)

[How to ask Mathematica to imitate Andy Warhol's pop-art painting?] <http://mathematica.stackexchange.com/questions/59132/how-to-ask-mathematica-to-imitate-andy-warhols-pop-art-painting>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

- asked by Putterboy (43 votes), answered by belisarius (50 votes)

=====
 ===== Can you answer these?
 =====

[How to add AccuracyGoal and PrecisionGoal options in a numerical function?] <http://mathematica.stackexchange.com/questions/88182/how-to-add-accuracygoal-and-precisiongoal-options-in-a-numerical-function>

There are many built-in functions that contain AccuracyGoal, PrecisionGoal and WorkingPrecision.

For instance

NSolve

```
NSolve[x^3 + 2 x + 7 == 0, x, WorkingPrecision -> 40]
```

```
{{x -> ...
```

- asked by Shutao Tang (4 votes)

[What is the best way to take the Bourdet derivative?] <http://mathematica.stackexchange.com/questions/87760/what-is-the-best-way-to-take-the-bourdet-derivative>

Given a list of paired delta-time, delta-pressure, (dt, dp) , what might be the best approach to calculate the Bourdet derivative, described below? I am unclear how to manipulate elements of the ...

- asked by John (4 votes)

[Dirichlet coefficients as limits: wrong] <http://mathematica.stackexchange.com/questions/87766/dirichlet-coefficients-as-limits-wrong>

Perhaps I should have included the word "bug" in my question. Here we go

There is a bug in this Limit

```
Limit[3^s (-1 - 2^-s + Zeta[s]), s -> \[Infinity]]
(* 0 *)
```

It should be 1

and there is a ...

- asked by Dr. Wolfgang Hintze (7 votes)

6.26 Tuesday, July 7, 2015

=====

Top new questions this week:

=====

[Faster binary Hamming weight for big integers?] <http://mathematica.stackexchange.com/questions/87486/faster-binary-hamming-weight-for-big-integers>

While working on an answer to Count the sequences in an array I found that DigitCount was the bottleneck in my code when used as DigitCount[num, 2, 1]. DigitCount first expands the number to an ...

- asked by Mr.Wizard (17 votes), answered by Oleksandr R. (15 votes)

[Dataset vs an association of associations] <http://mathematica.stackexchange.com/questions/87360/dataset-vs-an-association-of-associations>

Associations with a record structure (e.g., a flat table) can be organised in one of two main ways. First as a list of associations, which is also used in the case of Mathematica's data set ...

- asked by Mac (16 votes), answered by WReach (16 votes)

[Count the sequences in an array]<http://mathematica.stackexchange.com/questions/87406/count-the-sequences-in-an-array>

Is there a short and easier way to count number of sequences in a list?

Let's say I have three lists:

list1 = 0,0,0,0,0,0,1,1,1,1,1,0,0,0,0,0,0

list2 = 0,0,1,1,1,0,0,0,0,0,0,0,0,1,1,1,1 ...

- asked by gurluk (13 votes), answered by Leonid Shifrin (16 votes)

[Plot is discontinuous (it shouldn't be)]<http://mathematica.stackexchange.com/questions/87504/plot-is-discontinuous-it-shouldnt-be>

Plot[{(E^x)^(-2I \[Pi])Hypergeometric2F1[-2I \[Pi]-2I Sqrt[2]\[Pi],
-2I \[Pi]+2I Sqrt[2]\[Pi],1-4I \[Pi],-E^x]+(E^x)^(2I \[Pi])Hypergeometric2F1[2I \[Pi]

- asked by grdgfr (12 votes), answered by MarcoB (13 votes)

[What's wrong with Simplify and FullSimplify?]<http://mathematica.stackexchange.com/questions/87305/whats-wrong-with-simplify-and-fullsimplify>

I have a quite complex list of equations and inequalities I combine to a boundary condition for my cost function. After investigation of two days I found the bug (I really name it a bug!). One of my ...

- asked by akm (11 votes), answered by Bob Hanlon (3 votes)

[What function generates random numbers in a compiled function?]<http://mathematica.stackexchange.com/questions/87364/what-function-generates-random-numbers-in-a-compiled-function>

I am writing a simulation for 2D random walk. I wrote several version of code, and found that the speed is like this (fastest to slowest): C++, Mathematica compiled procedural code, Mathematica ...

- asked by Felix (11 votes), answered by Szabolcs (11 votes)

[Trainable WEKA segmentation of images] <http://mathematica.stackexchange.com/questions/87256/trainable-weka-segmentation-of-images>

Is there a Mathematica equivalent of Trainable WEKA Segmentation as implemented in Fiji, the image processing software? A Google search did not return any relevant links.

I attach the original image ...

- asked by JMarc (11 votes), answered by blochwave (17 votes)

=====
Greatest hits from previous weeks: =====

[How to make Jacobian automatically in Mathematica] <http://mathematica.stackexchange.com/questions/5790/how-to-make-jacobian-automatically-in-mathematica>

If we have two vectors, a and b, how can I make Jacobian matrix automatically in Mathematica?

```


$$a = \left( \begin{array}{c} \text{x1}^3 + 2\text{x2}^2 \\ 3\text{x1}^4 + 7\text{x2} \end{array} \right)$$


```

- asked by George Mills (19 votes), answered by Jens (26 votes)

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenh (18 votes), answered by Artes (14 votes)

=====
Can you answer these?
=====

[Does Sum calculate all terms before summing them?] <http://mathematica.stackexchange.com/questions/87444/does-sum-calculate-all-terms-before-summing-them>

After calculating the sum of a large number of large objects, using

```
B = Sum[RandomInteger[{0, 1}, {10^6}], {100}];
```

I find that MaxMemoryUsed[] has increased by 400MB, which is about 100 times ...

- asked by Stephen Powell (1 vote)

[Performing a convolution for smoothing a function]<http://mathematica.stackexchange.com/questions/87674/performing-a-convolution-for-smoothing-a-function>

I want to smooth a one-dimensional oscillating function by convolving it with another function that I'll call the screening function. This screening function should have a trapezoidal form and go to ...

- asked by user34801 (2 votes)

[Alternative to use a function as an argument in Compile]<http://mathematica.stackexchange.com/questions/87618/alternative-to-use-a-function-as-an-argument-in-compile>

I am currently working on problems that require the use of functions such as :

```
Alpine[x_] := Total@Table[Abs[i*Sin[i] + 0.1*i], {i, x}];
ParabolaMin [x_] := Total@Table[i^2, {i, x}];
```

It may be ...

- asked by Doedalos (1 vote)

6.27 Tuesday, June 30, 2015

=====

Top new questions this week:

=====

[Does Mathematica have a built-in tool that allows one to operate on both sides of an equation?]<http://mathematica.stackexchange.com/questions/86906/does-mathematica-have-a-built-in-tool-that-allows-one-to-operate-on-both-sides>

-o

Geogebra has a very neat CAS view that allows one to solve an equation step by step in the following fashion:

You type an equation and ...

- asked by Voyska (19 votes), answered by Alexei Boulbitch (25 votes)

[Is ColorDistance symmetric?]<http://mathematica.stackexchange.com/questions/86730/is-colordistance-symmetric>

Is the function ColorDistance symmetric, i.e. is it always true that $\text{ColorDistance}[a,b] == \text{ColorDistance}[b,a]$, as use of the word distance would suggest?

- asked by Szabolcs (15 votes), answered by Szabolcs (15 votes)

[my Mathematica has turned orange and not able to find out why]<http://mathematica.stackexchange.com/questions/87072/my-mathematica-has-turned-orange-and-not-able-to-find-out-why>

I do not know what happened. But when I rebooted my PC, now Mathematica comes up orange colored. I shut down the PC and tried again, it is still orange. Here is screen shot:

I also did a reset. ...

- asked by Nasser (14 votes), answered by Sjoerd C. de Vries (14 votes)

[Solve a trig equation system] <http://mathematica.stackexchange.com/questions/86894/solve-a-trig-equation-system>

Background of the problem

In the same plane, P is a fixed point, A,B,C are moving point, $PA=a$, $PB=b$, $PC=c$, find the maximize perimeter of $\triangle ABC$.

let $\angle BPC=A$, $\angle CPA=B$, $\angle APB=2\pi-A-B$, then the ...

- asked by mathe (13 votes), answered by Guess who it is. (19 votes)

[How to retrieve current FaceForm?] <http://mathematica.stackexchange.com/questions/86990/how-to-retrieve-current-faceform>

The current colour in a Graphics object can be retrieved using `CurrentValue["Color"]` for use in Dynamic stuff.

Example:

`Graphics[RGBColor[2/3, 1/3, 2/3], Dynamic[If[CurrentValue["MouseOver"], ...`

- asked by Szabolcs (12 votes), answered by Mr.Wizard (10 votes)

[Using Simplify on a consistent system returns False] <http://mathematica.stackexchange.com/questions/86791/using-simplify-on-a-consistent-system-returns-false>

Bug introduced in 8.0 and persisting through 10.1.0 or later

It's late, but am I missing something here? Why should two independent equations, which together are consistent, Simplify to False?

...

- asked by Michael E2 (10 votes), answered by Jens (5 votes)

[Modifying strings in a list efficiently] <http://mathematica.stackexchange.com/questions/86778/modifying-strings-in-a-list-efficiently>

I have a list of strings $\{s_1, s_2, \dots, s_n\}$. I would like to produce the following list of strings:

\$\$

$\{s_1 \> 1, \ 1 \> s_2 \> 1, \ \dots, \ 1 \> s_n \}$

\$\$

In other words, I want ...

- asked by pre-kidney (10 votes), answered by ciao (7 votes)

==== Greatest hits from previous weeks: =====

[Finding real roots of negative numbers (for example, $\sqrt[3]{-8}$)] <http://mathematica.stackexchange.com/questions/3886/finding-real-roots-of-negative-numbers-for-example-sqrt3-8>

Say I want to quickly calculate $\sqrt[3]{-8}$, to which the most obvious solution is -2 .

When I input $\sqrt[3]{-8}$ or `Power[-8, 3^-1]`, Mathematica gives the result $2(-1)^{1/3}$. Not what I ...

- asked by jtbandes (36 votes), answered by Brett Champion (19 votes)

[Parallel and perpendicular symbol from Mathematica to LaTeX] <http://mathematica.stackexchange.com/questions/46538/parallel-and-perpendicular-symbol-from-mathematica-to-latex>

I want to get the following expression from Mathematica to LaTeX:

```
\begin{bmatrix}
E_{\parallel} \ \ E_{\perp}
\end{bmatrix}
```

I have tried to use inbuilt 'symbol' character from the special ...

- asked by Steve Hatcher (4 votes), answered by Sjoerd C. de Vries (9 votes)

==== Can you answer these?
 =====

[Why is the Max function so slow when operating on lists of dates?] <http://mathematica.stackexchange.com/questions/87204/why-is-the-max-function-so-slow-when-operating-on-lists-of-dates>

Example:

```
dates = DateRange[DateObject[], DatePlus[DateObject[], 15]]; First[AbsoluteTiming[Max[dates]]]
(* 21.364247 *)
```

As a workaround, DateObject[Max[AbsoluteTime /@ dates]] will get the same ...

- asked by rhennigan (3 votes)

[Discrete Fourier Transform baseline subtraction] <http://mathematica.stackexchange.com/questions/86951/discrete-fourier-transform-baseline-subtraction>

I am trying to remove sinusoidal variability from a set of evenly-spaced intensity vs. time data. These data contain periodic events that are separated by a normalized (but sinusoidally variable) ...

- asked by John (1 vote)

[How to use Wolfram language in an external program with low latency?] <http://mathematica.stackexchange.com/questions/87168/how-to-use-wolfram-language-in-an-external-program-with-low-latency>

Im using Wolfram language on Pi B, and I want to compile a '.m' file (like "test.m" that contains Wolfram functions), in an external program like a C/C++ and then Export the output in an image file ...

- asked by Babak akbari (1 vote)

6.28 Tuesday, June 23, 2015

=====

Top new questions this week:

=====

[Summer Solstice Spurious Correlations Challenge] <http://mathematica.stackexchange.com/questions/86413/summer-solstice-spurious-correlations-challenge>

I came across this hilarious web site that has charts of bizarre "correlations" between disparate categories. Results like this:

In the spirit of my summer solstice shedding spuriously earned rep. ...

- asked by ciao (20 votes)

[Is there any Mathematica functionality enabling its use for the blind?] <http://mathematica.stackexchange.com/questions/86538/is-there-any-mathematica-functionality-enabling-its-use-for-the-blind>

A colleague of mine has become blind as the result of a sudden medical misfortune. We want to help him to feel useful and active again. We, however, still cannot determine what can be done and to what ...

- asked by Alexei Boulbitch (17 votes)

[Nearest neighbor search in n-dimensions] <http://mathematica.stackexchange.com/questions/86262/nearest-neighbor-search-in-n-dimensions>

Suppose a list of items such as: `L1 = RandomReal[0, 100, 1000];`

I need to find the position of each k-neighbor in the original list. And very quickly if possible. As we can see, the problem is ...

- asked by Doedalos (14 votes), answered by bill s (14 votes)

[HDF5 importing large arrays]<http://mathematica.stackexchange.com/questions/86544/hdf5-importing-large-arrays>

I have some computations that output a 300,000,000 element array of long unsigned ints, so about 2.4GB, in an h5 file. Mathematica handles files south of 2GB fine, albeit taking very long to import ...

- asked by Kartoffelpelz (13 votes), answered by Albert Retey (7 votes)

[How does Rescale[] handle infinities?]<http://mathematica.stackexchange.com/questions/86365/how-does-rescale-handle-infinities>

Rescale appears to be a simple function. It just does a simple linear $y = ax + b$ type rescaling of the values:

Rescale@Range[0, 10] (* 0, 1/10, 1/5, 3/10, 2/5, 1/2, 3/5, 7/10, 4/5, 9/10, 1 *)

...

- asked by Szabolcs (13 votes), answered by LLLAMnYP (5 votes)

[How to fill the space outside of an image after rotating it]<http://mathematica.stackexchange.com/questions/86528/how-to-fill-the-space-outside-of-an-image-after-rotating-it>

I want to rotate this image by -50 degrees, and then fill up the black space around the rotated image with a bluish color. I can't find any documentation/answers that suggest how to do it. (Sorry ...

- asked by George Wolfe (12 votes), answered by ubpdqn (21 votes)

[How do I add my own help pages to the in-built Wolfram documentation?]<http://mathematica.stackexchange.com/questions/86137/how-do-i-add-my-own-help-pages-to-the-in-built-wolfram-documentation>

How do I add my own help pages to the in-built Wolfram documentation ?

- asked by Peter Lindsay (11 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?]<http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by Guess who it is. (352 votes), answered by faysou (323 votes)

[How to express trigonometric equation in terms of of given trigonometric function?]
<http://mathematica.stackexchange.com/questions/434/how-to-express-trigonometric-equation-in-terms-of-of-given-trigonometric-functio>

How can I express a trigonometric equation / identity in terms of a given trigonometric function?

using following trigonometric identities

$\text{Sin}[x]^2 + \text{Cos}[x]^2 == 1$

$\text{Sin}[x] / \text{Cos}[x] == \text{Tan}[x]$

...

- asked by Prashant Bhate (17 votes), answered by Simon (24 votes)

=====
 ===== Can you answer these?
 =====

[Export 3D plot or Graphics3D object as stereoscopic 3D .jps file]
<http://mathematica.stackexchange.com/questions/86354/export-3d-plot-or-graphics3d-object-as-stereoscopic-3d-jps-file>

I recently came across some Matlab code to output a 3D graph as a stereoscopic left/right .JPS file, viewable e.g. with 3D Media Viewer, Stereoscopic Player or using any 3D television or beamer: ...

- asked by Tom Wenseleers (2 votes)

[DiscretizeRegion of ImplicitRegion too small]
<http://mathematica.stackexchange.com/questions/86600/discretizeregion-of-implicitregion-too-small>

I have a 2D function that has some sharp peaks within the my domain. I need to find a tight region that contains these sharp peaks. The following is an example of what I would like to do.

An example ...

- asked by c186282 (2 votes)

[Is it possible to automatically apply Parallelize when possible]<http://mathematica.stackexchange.com/questions/86373/is-it-possible-to-automatically-apply-parallelize-when-possible>

Parallelize in Mathematica is pretty easy to use. Most of the time, applying Parallelize to an expression, it tries to evaluate expr using automatic parallelization. Is there an option that ...

- asked by Kattern (2 votes)

6.29 Tuesday, June 16, 2015

=====

Top new questions this week:

=====

[Memoization with pure functions?]<http://mathematica.stackexchange.com/questions/85750/memoization-with-pure-functions>

Is this possible?

If I have a simple function, say:

```
f=If[#>0,1,2]&
```

then for each value of # this will re-evaluate f right?

Is it possible to define a pure function like this:

...

- asked by maria (30 votes), answered by Leonid Shifrin (39 votes)

[Trying to Visualize a Collatz - The Collatz conjecture] <http://mathematica.stackexchange.com/questions/85718/trying-to-visualize-a-collatz-the-collatz-conjecture>

So I'm new in this and learning— and I happen to have this collatz

```
collatz[x_, y_] := If[x == 3*y || x == 2*y + 1 || y == 3*x || y == 2*x + 2, 2, 0]
```

```
Array[#1 + 2 #2 &, {4, 4}]
```

output =

3, ...

- asked by Madona (20 votes), answered by Sjoerd C. de Vries (25 votes)

[How to plot an emission spectrum?]<http://mathematica.stackexchange.com/questions/85990/how-to-plot-an-emission-spectrum>

If I have a list of data with various wavelengths in nanometers, how would I plot them on a graph so it looks like this:

So far I have managed to plot a spectrum in DensityPlot, but I have no idea ...

- asked by Alizter (15 votes), answered by MarcoB (18 votes)

[How: 2D scatterplots with quantitative density-dependent coloring]<http://mathematica.stackexchange.com/questions/85530/how-2d-scatterplots-with-quantitative-density-dependent-coloring>

Consider the following scatterplot of a 50K-point dataset:

```
ListPlot[data,
  AspectRatio -&gt; Automatic, PlotRange -&gt; {{x0, x1}, {y0, y1}},
  ImageSize -&gt; Small,
  Frame -&gt; True,
  ...
```

- asked by kjo (15 votes), answered by MarcoB (16 votes)

[How to define a recursive pattern?]<http://mathematica.stackexchange.com/questions/85683/how-to-define-a-recursive-pattern>

I want to translate this recursive syntactic definition into a Mathematica pattern1:

$$\mathbf{x} : \begin{cases} \text{Null} \\ \{\text{integer}, \mathbf{x}\} \end{cases}$$

In other ...

- asked by kjo (12 votes), answered by Leonid Shifrin (17 votes)

[Mathematica: 3D plot based on combined 2D graphs] <http://mathematica.stackexchange.com/questions/85717/mathematica-3d-plot-based-on-combined-2d-graphs>

I have several sigmoidal fits to 3 different datasets, with mean fit predictions plus the 95% confidence limits (not symmetrical around the mean) and the actual data.

I would now like to show these ...

- asked by Tom Wenseleers (11 votes), answered by halmir (13 votes)

[What's the function that takes $X[Y[z_]]$ to $Y[X[z_]]$? ("swap heads")] <http://mathematica.stackexchange.com/questions/85872/whats-the-function-that-takes-xyz-to-yxz-swap-heads>

I've seen the operation described in the title before (basically, swap the heads of the first two levels of an expression), but I can't find it...

Does anyone know the function (or idiom/incantation) ...

- asked by kjo (11 votes), answered by Kuba (13 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by Guess who it is. (351 votes), answered by faysou (323 votes)

[Is it possible to export the equations from Mathematica to MATLAB?] <http://mathematica.stackexchange.com/questions/14035/is-it-possible-to-export-the-equations-from-mathematica-to-matlab>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

- asked by Seyhmus Gungoren (23 votes), answered by The Toad (30 votes)

=====
 ===== Can you answer these? =====

[Sub-processes (like XML.exe, GZIP.exe) not ended properly]<http://mathematica.stackexchange.com/questions/85668/sub-processes-like-xml-exe-gzip-exe-not-ended-properly>

I have difficulties with running MathKernel.exe from .NET and sub-processes like XML.exe and GZIP.exe, which are not terminated properly. Sometimes even the MathKernel.exe task stays active and is ...

- asked by akm (1 vote)

[Fitting data to a complicated function]<http://mathematica.stackexchange.com/questions/85778/fitting-data-to-a-complicated-function>

So, where to begin. I have a certain dataset that I want to fit to a function. However, the function is rather complicated (matrix inversions, linearsolve) and does in general not have a closed form ...

- asked by user129412 (2 votes)

[Partitioning Table]<http://mathematica.stackexchange.com/questions/85820/partitioning-table>

I have a long vector array in the following format:

$x_1, y_1, z_1, a, b, c, x_1, y_1, z_2, d, e, f, \dots, x_1, y_2, z_1, g, h, i, x_1, y_2, z_2, \dots$

- asked by user27670 (3 votes)

6.30 Tuesday, June 9, 2015

=====

Top new questions this week:

=====

[Error "Throw::nocatch: Uncaught Throw[False] returned to top level" given each time I open a new Mathematica 10.1 session]<http://mathematica.stackexchange.com/questions/85013/error-thrownocatch-uncaught-throwfalse-returned-to-top-level-given-each-t>

From a few days now each time I open a new Mathematica session I get the small error messages window with the error

Throw::nocatch: Uncaught Throw[False] returned to top level.

repeatedly given, as ...

- asked by glance (13 votes), answered by ilian (7 votes)

[Is it possible to extract data from an eps plot not generated in Mathematica?]<http://mathematica.stackexchange.com/questions/85320/is-it-possible-to-extract-data-from-an-eps-plot-not-generated-in-mathematica>

I want to extract data from an eps plot not generated in Mathematica and replot it. In general is it possible to extract data from plots in any formats in Mathematica? I searched but unfortunately ...

- asked by Soodeh Z. (11 votes), answered by Alexey Popkov (15 votes)

[Mimic a procedural, recursive clustering algorithm for site percolation using functional programming]<http://mathematica.stackexchange.com/questions/85185/mimic-a-procedural-recursive-clustering-algorithm-for-site-percolation-using-fu>

Sorry in advance for my logorrhea: I just want to make sure all of the information is here.

Context and Question

I am investigating site percolation on a square lattice. I have a working, ...

- asked by march (11 votes), answered by Virgil (7 votes)

[Subtracting two plots from each other after shifting one]<http://mathematica.stackexchange.com/questions/85420/subtracting-two-plots-from-each-other-after-shifting-one>

I have the following lists representing energy spectra that need to be subtracted from each other to produce a difference spectrum.

data1 = ...

- asked by W. Heisenberg (10 votes), answered by Histograms (15 votes)

[Lookup with default broken in Dataset]<http://mathematica.stackexchange.com/questions/85114/lookup-with-default-broken-in-dataset>

Given an Association,

```
data = &lt;|"1" -&gt; &lt;|"A" -&gt; 10, "B" -&gt; 20|&gt;,
      "2" -&gt; &lt;|"C" -&gt; 30, "B" -&gt; 40|&gt;|&gt;
```

Lookup works w/ default:

```
data // Map[Lookup[#, "A", 0] ...
```

- asked by alancalvitti (10 votes), answered by WReach (5 votes)

[Confused by the opts : OptionsPattern[] pattern] <http://mathematica.stackexchange.com/questions/85347/confused-by-the-opts-optionspattern-pattern>

I'm trying to make sense of the syntax in the clause `opts:OptionsPattern[]`, as found in this standard "rule-based" (pseudo-)function definition pattern:

```
aFunction[a1_, a2_, a3_, ...
```

- asked by kjo (9 votes)

[Why Mathematica cannot apply The Fundamental Theorem of Calculus automatically?] <http://mathematica.stackexchange.com/questions/85166/why-mathematica-cannot-apply-the-fundamental-theorem-of-calculus-automatically>

For some reason Mathematica cannot evaluate this definite integral:

```
$Version
```

```
(* 10.1.0 for Microsoft Windows (64-bit) (March 24, 2015) *)
```

```
Integrate[1/(Sqrt[x] Sqrt[1 - x + x^2]), {x, 1, 2}]
```

```
(* ...
```

- asked by Vladimir Reshetnikov (8 votes), answered by Dr. Wolfgang Hintze (4 votes)

=====
Greatest hits from previous weeks: =====

[How to make an inkblot?] <http://mathematica.stackexchange.com/questions/3345/how-to-make-an-inkblot>

How to effectively create a polygon that looks like a realistic inkblot? So far, I could come up with this (borrowing from Ed Pegg Jr.'s Rorschach demonstration):

```
RandomBlot[num_, opts___] := ...
```

- asked by Istvan Zachar (71 votes), answered by Sjoerd C. de Vries (38 votes)

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (84 votes), answered by ArgentoSapiens (77 votes)

==== Can you answer these?
====

[ConvexHullMesh sometimes excludes valid points from convex hull] <http://mathematica.stackexchange.com/questions/85466/convexhullmesh-sometimes-excludes-valid-points-from-convex-hull>

I have a sequence of polytopes that I am trying to visualize, and I find that ConvexHullMesh sometimes excludes points from the convex hull, and it does so inconsistently.

In particular, notice these ...

- asked by Marcus P S (2 votes)

[How to specify finite difference approximation order in 'NDSolve'] <http://mathematica.stackexchange.com/questions/85439/how-to-specify-finite-difference-approximation-order-in-ndsolve>

According to here, NDSolve, when using the method of lines, creates partial derivatives in the spacial coordinate (lets talk just about one spacial coordinate for now) using the finite difference ...

- asked by rspencer (1 vote)

[Better to have infinities in limits or integrands ('NIntegrate')?] <http://mathematica.stackexchange.com/questions/85483/better-to-have-infinities-in-limits-or-integrands-nintegrate>

I'm using ListPlot to plot the integral of a function with respect of the function's s
ListPlot[NIntegrate[integrand[x, #], {x, -Infinity, 0}]&@Range[10, 20]]. The inte

- asked by Love Learning (2 votes)

6.31 Tuesday, June 2, 2015

=====

Top new questions this week:

=====

[Python-style plots in Mathematica] <http://mathematica.stackexchange.com/questions/84877/python-style-plots-in-mathematica>

I love making plots in Mathematica. And i love to spend a lot of time making high-quality plots that maximize readability and aesthetics. For most cases, mathematica can make very beautiful images, ...

- asked by Pablo Galindo Salgado (28 votes), answered by halirutan (29 votes)

[Numerically solving Helmholtz equation in 3D for arbitrary shapes] <http://mathematica.stackexchange.com/questions/84726/numerically-solving-helmholtz-equation-in-3d-for-arbitrary-shapes>

Context

While studying manifold Learning I got interested in finding the eigenvectors of the Laplacian. (also in connection to this problem of solving the heat equation)

Following this and that ...

- asked by chris (22 votes)

[Can A Plot Be Overlaid With A Map?] <http://mathematica.stackexchange.com/questions/84598/can-a-plot-be-overlaid-with-a-map>

Some brief, only slightly important background. I am doing a research project using the data from NASA's GRACE mission. I wrote a short Perl script to take two data files and find the change in ...

- asked by disc otter (16 votes), answered by Mr.Wizard (16 votes)

[How can we make publication-quality PlotMarkers without version 10?] <http://mathematica.stackexchange.com/questions/84857/how-can-we-make-publication-quality-plotmarkers-without-version-10>

Suppose that for certain reasons we are not yet using Mathematica version 10, or we have a version with buggy PlotMarkers. It is well known that the default markers are font glyphs, and as a result ...

- asked by Oleksandr R. (15 votes), answered by Oleksandr R. (13 votes)

[Eigenfunctions of the Laplacian on an arbitrary mesh] <http://mathematica.stackexchange.com/questions/84607/eigenfunctions-of-the-laplacian-on-an-arbitrary-mesh>

So, I've constructed a mesh over which I'd like to find eigenfunctions of Laplace's equation with a free boundary (a zero Neumann boundary condition along the edge).

Mostly because I figured an ...

- asked by Michael Lee (14 votes), answered by Michael Lee (4 votes)

[Why is ListPlot so slow here?] <http://mathematica.stackexchange.com/questions/84739/why-is-listplot-so-slow-here>

While examining How can I monitor the progress of a Plot? I was surprised to discover that in some cases ListPlot in version 10.0 and 10.1 is orders of magnitude slower than it is in version 7. This ...

- asked by Mr.Wizard (13 votes)

[Is there a way to control which special forms Normal converts?] <http://mathematica.stackexchange.com/questions/84783/is-there-a-way-to-control-which-special-forms-normal-converts>

Normal documentation reads:

Normal[expr] converts expr to a normal expression, from a variety of special forms.

But is there a way to control which special forms it converts and which it does ...

- asked by Mr.Wizard (11 votes), answered by Mr.Wizard (13 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Get a "step-by-step" evaluation in Mathematica] <http://mathematica.stackexchange.com/questions/148/get-a-step-by-step-evaluation-in-mathematica>

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it? If so, how does one do it?

...

- asked by Skydreamer (70 votes), answered by Guess who it is. (57 votes)

[Plotting Complex Quantity Functions] <http://mathematica.stackexchange.com/questions/3458/plotting-complex-quantity-functions>

Trying to plot with complex quantities seems not to work properly in what I want to accomplish. I would like to know if there is a general rule/way of plotting when you have complex counterparts in ...

- asked by night owl (17 votes), answered by Artes (19 votes)

=====
 ===== Can you answer these?
 =====

[Why is setting SynchronousUpdating -> True causes mouse motion to pause/freeze Dynamics?] <http://mathematica.stackexchange.com/questions/84826/why-is-setting-synchronousupdating-true-causes-mouse-motion-to-pause-freeze-d>

When making a Manipulate, I noticed that setting SynchronousUpdating -> True have a very annoying side effect. By just moving the mouse anywhere on the same cell the Manipulate is running, causes ...

- asked by Nasser (4 votes)

[Using a Mathematica index as a DiscreteVariable in NDSolve when solving a coupled set of ordinary differential equations] <http://mathematica.stackexchange.com/questions/84471/using-a-mathematica-index-as-a-discretevariable-in-ndsolve-when-solving-a-couple>

Context

Since the explanation below of the problem to be solved is lengthy, let me preamble this by saying that I have code that works to solve the problem, but I don't know whether (1) it's ...

- asked by march (6 votes)

[Why is Transpose Dataset slow in one direction] <http://mathematica.stackexchange.com/questions/84585/why-is-transpose-dataset-slow-in-one-direction>

Transpose is faster when it distributes Keys at the 2nd level of a Dataset than when it factors them out.

```
ds[len_] := &lt;"a" -&gt; Range[len], "b" -&gt; (1/Range[len] // N)|&gt; // Dataset
```

...

- asked by alancalvitti (4 votes)

6.32 Tuesday, May 26, 2015

=====

Top new questions this week:

=====

[A bug in Integrate] <http://mathematica.stackexchange.com/questions/84089/a-bug-in-integrate>

`Integrate[(1 + 16 Tan[2 x - y]^2)/(1 + 4 Tan[2 x - y]^2), {x, 0, 2 Pi}]`

Mathematica (wrong) output is (tested under versions 8 and 10.0, took 1 minute of CPU time)

10 Pi

The correct value of this ...

- asked by Vaclav Kotesovec (17 votes), answered by Histograms (11 votes)

[What is the FrontEnd?] <http://mathematica.stackexchange.com/questions/84173/what-is-the-frontend>

Can anyone sort out what the Front-End is, how it is structured and what its relationship to the Kernel is. The FrontEnd is mentioned quite often but elusively avoids to be caught and clearly defined. ...

- asked by MathLind (15 votes), answered by Mr.Wizard (12 votes)

[Regime Change Stochastic Process] <http://mathematica.stackexchange.com/questions/84054/regime-change-stochastic-process>

I would like to simulate an Ito process in which the drift and diffusion terms change after hitting a boundary for the first time.

For example, a Geometric Brownian Motion X which has 0 drift and ...

- asked by Shffl (12 votes), answered by Sjoerd C. de Vries (9 votes)

[How to speed up Colorize] <http://mathematica.stackexchange.com/questions/83967/how-to-speed-up-colorize>

I have a list of about 500 images similar to the following:

```
A = Import["http://i.stack.imgur.com/1bV40.png"]
AbsoluteTiming[Colorize[A, ColorFunction -> "AvocadoColors"]]
```

Gives 0.6 ...

- asked by DarrenM (11 votes), answered by bill s (7 votes)

[Does Mathematica have an equivalent of Python's `float.as_integer_ratio`?] <http://mathematica.stackexchange.com/questions/84234/does-mathematica-have-a-n-equivalent-of-pythons-float-as-integer-ratio>

The Python programming language has a `float.as_integer_ratio(x)` function which exactly converts an IEEE 754 floating-point number into a numerator/denominator pair of integers. For example:

...

- asked by David Zhang (10 votes), answered by Guess who it is. (15 votes)

[Does Mathematica have an equivalent of C's `nextafter`?] <http://mathematica.stackexchange.com/questions/84237/does-mathematica-have-an-equivalent-of-c-s-nextafter>

In C (and many other programming languages), there is a function

```
double nextafter(double x, double y)
```

which takes two (IEEE 754) floating-point numbers and returns the next representable

...

- asked by David Zhang (9 votes), answered by Michael E2 (5 votes)

[How can I make `FilledCurve` smoother?] <http://mathematica.stackexchange.com/questions/84247/how-can-i-make-filledcurve-smoother>

In How can I generate and randomly assign color to annular sectors? J.M. showed an interesting way to create a sector graphic using `FilledCurve`. Unfortunately it was marred by an inferior rendering ...

- asked by Mr.Wizard (9 votes), answered by Mr.Wizard (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Alternatives to Mathematica]<http://mathematica.stackexchange.com/questions/28162/alternatives-to-mathematica>

Inspired by the recent question Alternatives to LaTeX (currently 58 upvotes) on <http://tex.stackexchange.com/>:

Are there any paid-for or open source alternatives to Mathematica which produce equal or ...

- asked by akk (28 votes), answered by Sumit (17 votes)

[How do I draw a pair of buttocks?]<http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (221 votes), answered by mikuszefski (340 votes)

==== Can you answer these?
=====

[Simplification with absolute value]<http://mathematica.stackexchange.com/questions/83933/simplification-with-absolute-value>

I have a long expression that has absolute values in the exponent. Some parts of the expression would clearly simplify if one assumes that the power is an odd or even integer. When I give one of this ...

- asked by Jools (1 vote)

[Wrong Limit with LaguerreL] <http://mathematica.stackexchange.com/questions/84077/wrong-limit-with-laguerrel>

$\text{Limit}[(n! \text{LaguerreL}[n, -1] / (n^{(n+1/4)} / \text{Sqrt}[2] / E^{(n-2\text{Sqrt}[n]+1/2)}) - 1) \text{Sqrt}[n], n \rightarrow \infty]$

Mathematica (wrong) output

$$13/16 = 0.8125$$

The right result is:

$$31/48 = 0.645833...$$

But numerically it ...

- asked by Vaclav Kotesovec (5 votes)

[Fast construction and reshaping of large tensors]<http://mathematica.stackexchange.com/questions/83999/fast-construction-and-reshaping-of-large-tensors>

I'm trying to construct a large matrix which is derived from some higher rank tensor (the rank of interest to me changes case by case, so it needs to be a general method). Currently, the process of ...

- asked by user12876 (1 vote)

6.33 Tuesday, May 19, 2015

=====

Top new questions this week:

=====

[Why is calling Dot with many arguments so inefficient?] <http://mathematica.stackexchange.com/questions/83412/why-is-calling-dot-with-many-arguments-so-inefficient>

Say I want to multiply a reasonably large list of symbolic matrices.

tab =

Partition[#,4]& /@

Table[

Symbol[CharacterRange["a","z"][[nm]]<>ToString[nm]],{nm,1,12},{nm,1,16}];

...

- asked by murphy (13 votes), answered by Hurkyl (7 votes)

[Performance problems in new Sequence functions]<http://mathematica.stackexchange.com/questions/83325/performance-problems-in-new-sequence-functions>

The new-in-10.1 Sequence* family of functions should provide newly optimized methods for handling sequence problems. Happily in some cases they do! For example Murta reports 28 times faster ...

- asked by Mr.Wizard (12 votes)

[What are SparseArray Properties? How and when should they be used?]<http://mathematica.stackexchange.com/questions/83721/what-are-sparsearray-properties-how-and-when-should-they-be-used>

A strange undocumented form of SparseArray is increasingly used in answers on this site:

```
SparseArray[(* data *)][NonzeroPositions]
```

What is this, and why would anyone want to use this? Are there ...

- asked by Mr.Wizard (11 votes), answered by Mr.Wizard (12 votes)

[A better (but slower) FullSimplify function]<http://mathematica.stackexchange.com/questions/83756/a-better-but-slower-fullsimplify-function>

I am creating this question and posting an answer to it as a help for those who have problems with Mathematica simplification oddities that appear in many other questions on the site.

First of all, ...

- asked by Giovanni (10 votes), answered by Giovanni (10 votes)

[Is there a programmatic equivalent of Edit > Find?]<http://mathematica.stackexchange.com/questions/83492/is-there-a-programmatic-equivalent-of-edit-find>

Most things that can be done via the front-end interface in Mathematica can also be accomplished by some function. Is that the case for find-and-replacing? That is, is there some code I could execute ...

- asked by thecommexokid (10 votes), answered by Mr.Wizard (10 votes)

[Is FullGraphics an abandoned function? Is there an alternative?]<http://mathematica.stackexchange.com/questions/83648/is-fullgraphics-an-abandoned-function-is-there-an-alternative>

FullGraphics hasn't worked entirely for a long time and the situation appears to be getting worse instead of better. In Mathematica 10.0 and 10.1 a simple usage throws numerous errors and returns a ...

- asked by Mr.Wizard (10 votes)

[How to find all the positions of max value of a list efficiently?]<http://mathematica.stackexchange.com/questions/83602/how-to-find-all-the-positions-of-max-value-of-a-list-efficiently>

For Example, `list=RandomInteger[1,100,2000]`. Yes, I know `Position[list,Max[list]]` can do. But it's based on pattern matching! `Ordering[list,-1]` could find one position but not all. So how to ...

- asked by WateSoyan (10 votes), answered by Pickett (14 votes)

=====
Greatest hits from previous weeks: =====

[How to make use of Associations?]<http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (74 votes), answered by Leonid Shifrin (80 votes)

[How to find the position of elements in a list satisfying criteria] <http://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria>

Say I have a list `x={2,4,6,8,10}` and I want to find out the positions of the elements that are greater than 7.

`Select[x, #>7&]` gives the elements themselves, and `Position[x,8]` gives the ...

- asked by PeterR (24 votes), answered by Guess who it is. (19 votes)

=====
Can you answer these? =====

[Indeterminate expression $0(I*\text{Infinity})$ on indefinite integrals on first use only]<http://mathematica.stackexchange.com/questions/83450/indeterminate-expression-0iinfinity-on-indefinite-integrals-on-first-use-onl>

I do not know if this is new or not, I googled before.

Windows 7, 10.1 64 bit: Integrals generate this error message

The strange thing also is that the message shows up the first time the command ...

- asked by Nasser (3 votes)

[Undo automatic update] <http://mathematica.stackexchange.com/questions/83795/undo-automatic-update>

I was working with Predict function (with a neural network and today, and when I executed the same notebook I have been working for some time, Machine Learning package was automatically updated (it ...

- asked by Miguel (2 votes)

[How to match the arguments of the function in any order] <http://mathematica.stackexchange.com/questions/83396/how-to-match-the-arguments-of-the-function-in-any-order>

The issue is the following, with a dumb function with (4) arguments of (4) different heads (for each head is always no grater than one arguments):

```
func[x_a,y_b,z_c,w_d] := Print[x,y,z,w]
```

If I type ...

- asked by d555 (3 votes)

6.34 Tuesday, May 12, 2015

=====
Top new questions this week:
=====

[Documentation of the frequently-used functions in the context of Internal‘ and Compile‘] <http://mathematica.stackexchange.com/questions/82790/documentation-of-the-frequently-used-functions-in-the-context-of-internal-and-compile>

In this site, I have gradually found out that there is a collection of functions in all kinds of answers. For instance, Compile‘GetElement, Internal‘Bag,etc. However, these functions are undocumented. ...

- asked by Shutao Tang (21 votes), answered by blochwave (12 votes)

[Does Mathematica store hidden information for matrix objects?] <http://mathematica.stackexchange.com/questions/82854/does-mathematica-store-hidden-information-for-matrix-objects>

Bug introduced in 10.0.0 and persisting through 10.1.0 or later

I found a case where calling one built-in function (HermitianMatrixQ) for a given matrix changes the behavior of another built-in ...

- asked by user3126814 (20 votes)

[What's going on with performance of Tally here?] <http://mathematica.stackexchange.com/questions/82978/whats-going-on-with-performance-of-tally-here>

Observe:

```
l1 = l2 = RandomInteger[1, 100000, 1000000]; l2[[-1]] = -1; t1 = First@Timing@Tally[l1];
t2 = First@Timing@Tally[l2];
```

```
l1 = l2 = RandomInteger[1, 100000, 1000100]; l2[[-1]] = -1; t3 = ...
```

- asked by ciao (16 votes), answered by Michael E2 (4 votes)

[Highlight all the self-intersections of a Lissajous figure] <http://mathematica.stackexchange.com/questions/83118/highlight-all-the-self-intersections-of-a-lissajous-figure>

This graph also known as a Lissajous figure contains so many self-intersections. How can I highlight them?

```
ParametricPlot[{Sin[100 t], Sin[99 t]}, {t, 0, 2 Pi},
  PlotRange -> All]
```

- asked by WateSoyan (13 votes), answered by 2012rcampion (22 votes)

[Is MathieuC for moderately large imaginary arguments broken?] <http://mathematica.stackexchange.com/questions/83032/is-mathieuc-for-moderately-large-imaginary-arguments-broken>

I'm trying to plot $\text{MathieuC}[-3, 0.3, I x]$ for $x \in [0, 10]$, and here's what I get (using ListPlot and Table instead of Plot to make computation faster and use a regular grid):

...

- asked by Ruslan (13 votes)

[In 10.1.0 BenchmarkPlot doesn't work?] <http://mathematica.stackexchange.com/questions/83226/in-10-1-0-benchmarkplot-doesnt-work>

In Mathematica 10.1.0 BenchmarkPlot from the GeneralUtilities package doesn't work; copying Taliesin Beynon's initial use of the function on this site:

Needs["GeneralUtilities`"]

myPosIdx[x_] := ...

- asked by Mr.Wizard (12 votes), answered by Mr.Wizard (12 votes)

[How to ContourPlot a function of the coordinates on the Earth's surface on a map projection] <http://mathematica.stackexchange.com/questions/83050/how-to-contourplot-a-function-of-the-coordinates-on-the-earths-surface-on-a-map>

There are two similar questions (this and this), but one is too specific and the other is apparently not clear and has no answers. I'll try to make the question more complete.

Suppose you have a ...

- asked by unlikely (12 votes), answered by Kuba (13 votes)

=====
 Greatest hits from previous weeks: =====

[Is it possible to export the equations from Mathematica to MATLAB?] <http://mathematica.stackexchange.com/questions/14035/is-it-possible-to-export-the-equations-from-mathematica-to-matlab>

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

- asked by Seyhmus Gungoren (23 votes), answered by The Toad (30 votes)

[How do I draw a pair of buttocks?] <http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (216 votes), answered by mikuszefski (337 votes)

=====
 Can you answer these?
 =====

[Negative accuracy numerics (0⁻¹²⁸ notation)] <http://mathematica.stackexchange.com/questions/82683/negative-accuracy-numeric-0-128-notation>

What does it mean to have a negative accuracy number?

I understand 0¹²⁸ to mean "the number zero to 128 decimal points". Mathematica corroborates this:

```
In[1]:= 0128 &lt; 1
(* Out[1]= True *)
...
```

- asked by jjstankowicz (6 votes)

[Orthogonal projection of NURBS surface] <http://mathematica.stackexchange.com/questions/82855/orthogonal-projection-of-nurbs-surface>

How can one make an orthogonal projection of NURBS surface? For example the one from wolfram demos <http://demonstrations.wolfram.com/DesigningACarBodyWithSplines/>.

- asked by justartem (2 votes)

[DiracDelta and version 10.0.0] <http://mathematica.stackexchange.com/questions/83198/diracdeltand-version-10-0-0>

Note: This issue seems to affect version 10.0.0 only and is fixed in 10.0.1, 10.0.2, and 10.1

When evaluating the following two inputs:

```
Integrate[DiracDelta[1-x] DiracDelta[y-2] Sin[x] Cos[y], x, ...
```

- asked by Nid (2 votes)

6.35 Tuesday, May 5, 2015

```
=====
Top new questions this week:
=====
```

[Two, maybe related, issues with ParallelTable] <http://mathematica.stackexchange.com/questions/82496/two-maybe-related-issues-with-paralleltable>

I will use a very simple example for demonstrating two issues I face with ParallelTable, one with respect to the speed and one with respect to the use of memory. These issues might be related.

Let us ...

- asked by Fred Simons (14 votes), answered by Mr.Wizard (2 votes)

[Switch from logarithmic to linear scaling partway along a plot's axis] <http://mathematica.stackexchange.com/questions/82581/switch-from-logarithmic-to-linear-scaling-partway-along-a-plots-axis>

In the 2015 Planck satellite results, they give the latest plot of the temperature power spectrum of the cosmic microwave background, which I show below. (I am only interested in the main plot; you ...

- asked by thecommexokid (11 votes), answered by LLIAMnYP (13 votes)

[Solving and Animating Three Body Problem] <http://mathematica.stackexchange.com/questions/81340/solving-and-animating-three-body-problem>

I am attempting to solve a three-body problem using the Lagrange formalism, with a $1/r$ potential.

I started off by defining T and U (kinetic and potential energy) as follows:

$$T_x = .5 m_1 \dot{x}_1^2 + \dots$$

- asked by Puru (11 votes), answered by Vitaliy Kaurov (22 votes)

[Analyze touching particles with holes in a microscopic image] <http://mathematica.stackexchange.com/questions/81176/analyze-touching-particles-with-holes-in-a-microscopic-image>

I am looking for an easy method to count individual particles in a microscopic image. It is quite difficult for Mathematica to detect them, because they are touching each other. I am quite a beginner ...

- asked by Niki (11 votes), answered by niki (15 votes)

[How do I draw a polygon defined by a list of data points?] <http://mathematica.stackexchange.com/questions/81191/how-do-i-draw-a-polygon-defined-by-a-list-of-data-points>

I am attempting to make a 3D model of a device defined by a list of x,y,z points, digitized from a 2D image. The z coordinate is defined in mma.

What I tried so far:

area = 0, 452.45658, ...

- asked by Peter (10 votes), answered by kguler (7 votes)

[Is there a good reason for the removal of this FrameTicks syntax?] <http://mathematica.stackexchange.com/questions/82625/is-there-a-good-reason-for-the-removal-of-this-frameticks-syntax>

In past versions of Mathematica one could use a terse syntax for FrameTicks:

bottom, left, top, right

In 10.1 this syntax is no longer recognized requiring the addition of two sets of brackets:

...

- asked by Mr.Wizard (8 votes)

[How to remove outliers from data] <http://mathematica.stackexchange.com/questions/81121/how-to-remove-outliers-from-data>

I have a data with noise which some times includes significant outliers. The position of the outliers are random.

For example:

```
data1 = Table[PDF[NormalDistribution[3.5, .8], i], i, -5, 15, .01] + ...
```

- asked by Algoi (8 votes), answered by lalmei (8 votes)

==== Greatest hits from previous weeks: =====

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (81 votes), answered by ArgentoSapiens (75 votes)

[How to find the position of elements in a list satisfying criteria] <http://mathematica.stackexchange.com/questions/180/how-to-find-the-position-of-elements-in-a-list-satisfying-criteria>

Say I have a list $x=2,4,6,8,10$ and I want to find out the positions of the elements that are greater than 7.

6.36 Tuesday, April 28, 2015

=====

Top new questions this week:

=====

[Removing a histogram's vertical edges]<http://mathematica.stackexchange.com/questions/80949/removing-a-histograms-vertical-edges>

Let's say I have a histogram:

```
Histogram[RandomVariate[NormalDistribution[10, 2], 500]]
```

How can I remove vertical lines inside the histogram and keep only the edge?

- asked by moso (18 votes), answered by halirutan (12 votes)

[Generating animations of clouds with Mathematica]<http://mathematica.stackexchange.com/questions/80486/generating-animations-of-clouds-with-mathematica>

I'd like to generate some visually-pleasing animations of clouds, fog or smoke with Mathematica. My idea of "visually-pleasing" is along the lines of one of the images on the Wikipedia article for ...

- asked by blochwave (17 votes), answered by Simon Woods (18 votes)

[Better way to visualize cylinder puzzle solution]<http://mathematica.stackexchange.com/questions/80902/better-way-to-visualize-cylinder-puzzle-solution>

The above puzzle has been a recent source of amusement in my clique.

I decided to provide a visualization to motivate solution (here):

My code:

```
s[x_] := Piecewise[{{4 Mod[x, 3]/3,
...

```

- asked by ubpdqn (13 votes), answered by Jens (21 votes)

[Mathematica 10.1.0.0 (OS X) high CPU usage even for empty notebook]<http://mathematica.stackexchange.com/questions/80630/mathematica-10-1-0-0-os-x-high-cpu-usage-even-for-empty-notebook>

Since update to 10.1.0.0 Mathematica has a high CPU usage even when no evaluation is running (even for empty notebook opened). I am running OS X Yosemite 10.10.3 on the following configuration:

...

- asked by Honza Drchal (11 votes), answered by BIBI (0 votes)

[Right Ascension and Declination in astronomical functions] <http://mathematica.stackexchange.com/questions/80787/right-ascension-and-declination-in-astronomical-functions>

In the process of answering this question, I was forced to confront the various astronomical coordinate systems used by Mathematica.

Background

In astronomy, positions of celestial objects (stars, ...

- asked by Virgil (10 votes), answered by Virgil (12 votes)

[Can't inject EncryptedObject] <http://mathematica.stackexchange.com/questions/80763/cant-inject-encryptedobject>

Here are minimal examples:

```
encryptedObj = Encrypt["pass", "TestCase"];
```

```
Decrypt["pass", encryptedObj] (*returns correct "TestCase"*)
```

```
With[{x = encryptedObj}, Button["Try with", Decrypt["pass", ...
```

- asked by Kuba (10 votes), answered by WReach (7 votes)

[Difference between Fitting Algorithms] <http://mathematica.stackexchange.com/questions/80998/difference-between-fitting-algorithms>

I am new to Mathematica, and I don't quite understand, what the difference between the fitting algorithms Fit, FindFit, LinearModelFit, NonLinearModelFit are. Why is the syntax so different ($1, x, x^2$...

- asked by Luca Thiede (9 votes), answered by MarcoB (10 votes)

==== Greatest hits from previous weeks: =====

[How to make Jacobian automatically in Mathematica] <http://mathematica.stackexchange.com/questions/5790/how-to-make-jacobian-automatically-in-mathematica>

If we have two vectors, a and b, how can I make Jacobian matrix automatically in Mathematica?

```


$$a = \begin{pmatrix} x_1^3 + 2x_2^2 \\ 3x_1^4 + 7x_2 \end{pmatrix}$$


```

- asked by George Mills (19 votes), answered by Jens (26 votes)

[Is there an open source implementation of Mathematica-the-language?] <http://mathematica.stackexchange.com/questions/4454/is-there-an-open-source-implementation-of-mathematica-the-language>

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

- asked by sblom (59 votes), answered by Simon (50 votes)

==== Can you answer these? =====

[Easy FindMaximum returns a wrong answer] <http://mathematica.stackexchange.com/questions/81065/easy-findmaximum-returns-a-wrong-answer>

FindMaximum in region is a new function in mma10, but when I tried the following example:

```

region = Polygon[{{0, 0}, {10, 0}, {10, 5}, {5, 5}, {5, 10}, {0, 10}}]
FindMaximum[{x + y, {x, y} \[Element] region} ...

```

- asked by WateSoyan (2 votes)

[Diverging solution to coupled second order ODEs from NDSolve] <http://mathematica.stackexchange.com/questions/80692/diverging-solution-to-coupled-second-order-odes-from-ndsolve>

For a physics application I am considering the radial Bogoliubov-de Gennes equations in two dimensions. In dimensionless form they read as follows

\$\$

`\begin{cases}`

...

- asked by Fonzies (3 votes)

[Does "FiniteRingData" or something like that exist?] <http://mathematica.stackexchange.com/questions/81009/does-finiteringdata-or-something-like-that-exists>

I want to find a function like FiniteGroupData but for finite rings. Does something like that exist?

- asked by kp9r4d (1 vote)

6.37 Tuesday, April 21, 2015

=====

Top new questions this week:

=====

[Bug in MovingMap (breaking change between version 10.1 and 10.0.2)?] <http://mathematica.stackexchange.com/questions/79931/bug-in-movingmap-breaking-change-between-version-10-1-and-10-0-2>

The MovingMap window spec has been changed between version 10.1 and 10.0.2.

Version 10.0.2

MovingMap[h, a, b, c, d, e, f, 2] (* h[a, b], h[b, c], h[c, d], h[d, e], h[e, f] *)

Here we ...

- asked by Edmund (18 votes), answered by Stefan R (9 votes)

[Analogue for Maple's dchange - change of variables in differential expressions] <http://mathematica.stackexchange.com/questions/80241/analogue-for-maples-dchange-change-of-variables-in-differential-expressions>

Maple owns an interesting function called dchange which can change the variables of differential equations, but there seems to be no such function in Mathematica.

Has any one ever tried to write ...

- asked by xzczd (16 votes), answered by Kuba (18 votes)

[Finding the period of an array of integers] <http://mathematica.stackexchange.com/questions/80163/finding-the-period-of-an-array-of-integers>

A simple array of integers is given. The problem is to detect if a pattern is repeatedly occurring in the array, and find the length of that pattern.

For example, for

19, 6, 19, 6, 19, 6, 19, 6, ...

- asked by VividD (12 votes), answered by Chris Degnen (6 votes)

[How to have one or multiple Boxed graphics, mixed with non Boxed, in the same Graphics3D] <http://mathematica.stackexchange.com/questions/80380/how-to-have-one-or-multiple-boxed-graphics-mixed-with-non-boxed-in-the-same-gr>

In the following example, I would like to Boxed only the RegionPlot3D, and not the Sphere.

That is, to obtain this:

instead of this:

Here's the sample code:

```
Show[
  RegionPlot3D[x^2 + y^3 - ...
```

- asked by P. Fonseca (8 votes), answered by kguler (3 votes)

[How to access an already opened Excel file in Mathematica?] <http://mathematica.stackexchange.com/questions/80186/how-to-access-an-already-opened-excel-file-in-mathematica>

This post 4594 shows how to open a existent Excel file with Mathematica. And this 6686886 shows how to do what I need, but in C#. This 12282310 is another related one.

How can I connect to a ...

- asked by Murta (8 votes), answered by Murta (8 votes)

[JoinAcross on nested association by nested key] <http://mathematica.stackexchange.com/questions/80311/joinacross-on-nested-association-by-nested-key>

I would like to join two associations on nested keys. Is this possible?

```
first = {&lt;|"away" -&gt; &lt;|"name" -&gt; "bob", "money" -&gt; 10 |&gt;, "home" -&gt; 10}
```

- asked by Ray Troy (7 votes), answered by WReach (8 votes)

[How to synchronize the display of dynamic objects?] <http://mathematica.stackexchange.com/questions/80027/how-to-synchronize-the-display-of-dynamic-objects>

I was looking at this question, which asks to keep the orientation of some 3D graphics objects constant (relative to the viewer) while rotating the rest with the mouse. I thought that maybe the ...

- asked by Szabolcs (7 votes), answered by Gerli (3 votes)

==== Greatest hits from previous weeks: =====

[How do I draw a pair of buttocks?] <http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (214 votes), answered by mikuszefski (335 votes)

[Plotting Complex Quantity Functions] <http://mathematica.stackexchange.com/questions/3458/plotting-complex-quantity-functions>

Trying to plot with complex quantities seems not to work properly in what I want to accomplish. I would like to know if there is a general rule/way of plotting when you have complex counterparts in ...

- asked by night owl (15 votes), answered by Artes (16 votes)

==== Can you answer these? =====

[MoonPosition and TimeZone support] <http://mathematica.stackexchange.com/questions/80269/moonposition-and-timezone-support>

With this question, I noticed some some weird results of MoonPosition. Consider the following code:

```
dateSunEclipse = DateObject[{2015,03,20,10,32,09},TimeZone-&gt;1];
dateSunEclipse0 = ...
```

- asked by unlikely (5 votes)

[I can create an H2 database with the H2 Console, but I can't find the database with MMA] <http://mathematica.stackexchange.com/questions/80408/i-can-creat-e-an-h2-database-with-the-h2-console-but-i-cant-find-the-database-w>

I can create an H2(Server) database using the tool that H2 provides,

but although i can create a memory based H2 database with the Database Explorer, when I try to create a connection to the ...

- asked by George Wolfe (1 vote)

[Empty Blank regression in v10.1] <http://mathematica.stackexchange.com/questions/80090/empty-blank-regression-in-v10-1>

In v10.1.0.0 on Linux, when Blank[] is used in Alternatives with pattern that can match a sequence, whole pattern unexpectedly matches sequences of any length.

```
ClearAll[matchLists]
matchLists[patt_] ...
```

- asked by jkuczm (5 votes)

6.38 Tuesday, April 14, 2015

=====

Top new questions this week:

=====

[many indefinite integrals do not evaluate in 10.1, looking for the cause] <http://mathematica.stackexchange.com/questions/79367/many-indefinite-integrals-do-not-evaluate-in-10-1-looking-for-the-cause>

Many integrals no longer evaluate in V 10.1 when they did in 10.0.2

Here are some 23 integrals as an example, that all produced results in V 10.0.2, but now all returns unevaluated!

I am hoping ...

- asked by Nasser (19 votes)

[Why does a comma insert a line break in a comment?] <http://mathematica.stackexchange.com/questions/79463/why-does-a-comma-insert-a-line-break-in-a-comment>

I like to include capital letters and punctuation in my comments. But when I put a comma into a Mathematica comment of the (* ... *) type, it usually causes the comment line to break, with a new line ...

- asked by Ralph Dratman (17 votes), answered by sacratus (7 votes)

[Why do lookup times in Dataset and Association differ by orders of magnitude?] <http://mathematica.stackexchange.com/questions/79522/why-do-lookup-times-in-dataset-and-association-differ-by-orders-of-magnitude>

Consider the following three data structures: a list of rules, an association, and a dataset:

```
n = 1000000;
list = (ToString[#] -&gt; #) &amp; /@ Range[n];
assoc = Association@list;
dataset = ...
```

- asked by verse (14 votes), answered by WReach (10 votes)

[How to get the directory of a package?] <http://mathematica.stackexchange.com/questions/79510/how-to-get-the-directory-of-a-package>

I have a package that I have placed in the \$BaseDirectory Applications directory so that Needs can find it. I have a logo in the directory that I will return when a function is called. However, when ...

- asked by Edmund (10 votes), answered by Szabolcs (10 votes)

[RegionPlot returning a number] <http://mathematica.stackexchange.com/questions/79572/regionplot-returning-a-number>

Introduced in 10.0, persists in 10.1.

I had updated my mathematica to version 10 few days ago. And I had been shocked by the following fact:

```
s = FunctionInterpolation[Sin[x], x, 0, 1]; ...
```

- asked by WateSoyan (10 votes)

[Why does Plot try symbolic values?] <http://mathematica.stackexchange.com/questions/79573/why-does-plot-try-symbolic-values>

I have the following code:

```
Test[a_] := (Print[a]; a*2)
```

```
Plot[Test[a], {a, 0, 10}, PlotPoints -> 5, MaxRecursion -> 0]
```

This should plot a^2 for five points between $a = 0$ and $a = 10$, and print ...

- asked by Matthew (10 votes), answered by Simon Woods (9 votes)

[Most efficient way of making pair list from a list] <http://mathematica.stackexchange.com/questions/79622/most-efficient-way-of-making-pair-list-from-a-list>

I have a bunch of datasets which looks like:

```
3 7 1 6 5 8 2 4 1 2 8 1 5 2 5 ...
```

and I need to make a list of pairs such that the first element makes a pair with other elements in the same line.

```
3 7 ...
```

- asked by Mahdi (9 votes), answered by Kuba (11 votes)

=====
Greatest hits from previous weeks: =====

[List of compilable functions] <http://mathematica.stackexchange.com/questions/1096/list-of-compilable-functions>

Is there somewhere a list on the functions that Compile can compile, or the cases in which a particular function can be compiled that I haven't found? I'd be glad even with a list of some of them ...

- asked by Rojo (83 votes), answered by Oleksandr R. (92 votes)

6.39 Tuesday, April 7, 2015

=====

Top new questions this week:

=====

[String-manipulation bugs in v10.1] <http://mathematica.stackexchange.com/questions/78884/string-manipulation-bugs-in-v10-1>

The new version 10.1 has introduced some strange (possibly buggy) behaviour compared to v10.0:

```
StringCases["1472", Except["0", DigitCharacter]]
```

```
(* v10.0 *) {"1","4","7","2"} (* v10.1 *) {"1"
```

...

- asked by Istvan Zachar (25 votes), answered by Stefan R (8 votes)

[What are the cool kids talking about when they use `##&[]`?] [http://mathematica.stackexchange.com/questions/78910/what-are-the-cool-kids-talking-about-when-they-use-##&\[\]](http://mathematica.stackexchange.com/questions/78910/what-are-the-cool-kids-talking-about-when-they-use-##&[])

All the cool kids are apparently using

```
##&[]
```

for

```
Unevaluated @ Sequence[]
```

but I have no idea what either means.

Please explain what these things are so I can be a cool kid!

- asked by raxacoricofallapatorius (23 votes), answered by rasher (18 votes)

[Mathematical morphology: removing text features from image, while keeping connectivity] <http://mathematica.stackexchange.com/questions/79066/mathematical-morphology-removing-text-features-from-image-while-keeping-connectivity>

I have this image of London's road networks.

```
img = Image[ Import["https://maps.googleapis.com/maps/api/staticmap?center="+51.5+
```

...

- asked by andandandand (17 votes), answered by mm.Jang (12 votes)

[What is the difference between Composition (@*) and sequential applications (@)?] <http://mathematica.stackexchange.com/questions/78979/what-is-the-difference-between-composition-and-sequential-applications>

What is the difference between

$f@g@*h@x$

and

$f@g@h@x$

Both evaluate to

$f[g[h[x]]]$

If they're the same, why introduce Composition as a new feature?

- asked by raxacoricofallapatorius (15 votes), answered by Szabolcs (22 votes)

[Random polyhedra walk] <http://mathematica.stackexchange.com/questions/79099/random-polyhedra-walk>

I would like to recreate ssch's random polyhedra random walk, which he posted in the chat. For convenience here it is again:

Since it's been one and a half year since then I've certainly had time ...

- asked by Pickett (14 votes)

[Plot a partition of the sphere given vertices of polygons] <http://mathematica.stackexchange.com/questions/78705/plot-a-partition-of-the-sphere-given-vertices-of-polygons>

I saw in this question that Mathematica can draw spherical triangles. I guess something similar can be done to plot a spherical polygon. I am interested in something similar:

I have a set of ...

- asked by Beni Bogosel (12 votes), answered by Taiki (14 votes)

[Why is a symbol still found after changing its context?] <http://mathematica.stackexchange.com/questions/78926/why-is-a-symbol-still-found-after-changing-its-context>

It seems that we can change the context of symbols:

```
In[1]:= x = 1 Out[1]= 1
```

```
In[2]:= Context[x] = "foo";
```

But then x is still interpreted as foo'x (and not Global'x) even though foo' is not in ...

- asked by Szabolcs (8 votes), answered by penguin77 (0 votes)

=====
Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J.M. (339 votes), answered by faysou (314 votes)

[How do I draw a pair of buttocks?] <http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (212 votes), answered by mikuszefski (333 votes)

=====
Can you answer these? =====

[short cut entry in KeyEventTranslations.tr works on V 10.0.2 but does not work in V 10.1] <http://mathematica.stackexchange.com/questions/79195/short-cut-entry-in-keyeventtranslations-tr-works-on-v-10-0-2-but-does-not-work-i>

I added 2 useful key shortcuts to my V 10.0.2 KeyEventTranslations.tr to allow adding [[and]] using ctrl-[and ctrl-] (thanks to this post by Szabolcs at WRI community some time ago) and these ...

- asked by Nasser (1 vote)

[Compile, "global variables" and recursion] <http://mathematica.stackexchange.com/questions/78768/compile-global-variables-and-recursion>

I am trying to do something similar to this, namely to make a Compile'd function outer that itself calls a Compile'd function inner which accesses a variable defined in outer. Copy-pasting the example ...

- asked by Marius Ladegard Meyer (3 votes)

[Issues reproducing reversible CA from NKS] <http://mathematica.stackexchange.com/questions/78931/issues-reproducing-reversible-ca-from-nks>

I want to recreate the output of the reversible cellular automaton described in this page of the NKS book.

The book specifies that this is a modified version of R214, where the new state (step+1) ...

- asked by andandandand (1 vote)

6.40 Tuesday, March 31, 2015

=====

Top new questions this week:

=====

[How to sort digits in a string while keeping other characters untouched?] <http://mathematica.stackexchange.com/questions/78464/how-to-sort-digits-in-a-string-while-keeping-other-characters-untouched>

Now there is a string with digits and letters, for instance, "95uge678r3gi89hgfe30kgh063d51". And the expected output is "00uge133r3gi55hgfe66kgh788d99".

I am able to do it in this way

...

- asked by Felix (12 votes), answered by Mr.Wizard (8 votes)

[Expansion of a hypergeometric function takes ages with Mathematica 9 and 10 (regression?)] <http://mathematica.stackexchange.com/questions/78534/expansion-of-a-hypergeometric-function-takes-ages-with-mathematica-9-and-10-reg>

Mathematica 8 (Linux version) can evaluate

AbsoluteTiming[Series[Hypergeometric2F1[1, 1 - eps/2, 3 - eps, 1/2], eps, 0, 0]]

in no time. On one of the university machines the result is

0.175840, ...

- asked by vsht (10 votes), answered by Eric Towers (4 votes)

[Opposite of StringSplit]<http://mathematica.stackexchange.com/questions/78405/opposite-of-stringsplit>

What is an appropriate command that does the opposite of the following.

```
StringSplit["a b c d e f g", " "]
```

- asked by William (10 votes), answered by Pickett (16 votes)

[Why can I not replace a Dataset using a rule?]<http://mathematica.stackexchange.com/questions/78131/why-can-i-not-replace-a-dataset-using-a-rule>

Simple replacement of a Dataset object does not seem to follow the expected behavior...

```
Dataset[{}] /. _Dataset->1
```

Returns the empty Dataset not 1 as I would have expected.

Whereas...

- asked by Ymareth (9 votes), answered by WReach (11 votes)

[Turning a set of random walk data 45 degrees] <http://mathematica.stackexchange.com/questions/78347/turning-a-set-of-random-walk-data-45-degrees>

I have a set of data that is just a "random" (generated by me, not by computer) sequence of length 2000 of 1's and (-1)'s. I used it to plot a 1-D random walk where +1 is step up, (-1) is step down, ...

- asked by Solarmew (8 votes), answered by Karsten 7. (4 votes)

[Unexpected slowness checking for empty list?] <http://mathematica.stackexchange.com/questions/78155/unexpected-slowness-checking-for-empty-list>

I thought I had a firm understanding of the differences between Equal and SameQ, but this has me puzzled:

```
test = RandomInteger[100000000, 10000000]; == test // AbsoluteTiming === test // ...
```

- asked by rasher (8 votes), answered by Mr.Wizard (9 votes)

[Mathematica on Raspberry Pi] <http://mathematica.stackexchange.com/questions/78319/mathematica-on-raspberry-pi>

Can I develop BSD/MIT open-source library for Mathematica using free non-commercial version on Raspberry Pi?

To state it differently: does the non-commercial limitation of Mathematica on RPi limit ...

- asked by denfromufa (7 votes), answered by denfromufa (3 votes)

=====
 Greatest hits from previous weeks: =====

[Divide all but the maximal element in a list by 10?]<http://mathematica.stackexchange.com/questions/69547/divide-all-but-the-maximal-element-in-a-list-by-10>

I have a list of numerical data, and I want to write a program that will keep the maximum as it is, but reduce the rest by certain factor (such as 10). For example:

input = 2, 3, 1, -3, -5, 9, 2, 6, ...

- asked by Paul (13 votes), answered by WReach (20 votes)

[Division by zero is slow]<http://mathematica.stackexchange.com/questions/64247/division-by-zero-is-slow>

Suppose I have two arrays of data, which I want to divide:

n = 1000; a = RandomInteger[1, 9, n, n]; b = RandomInteger[1, 9, n, n]; First @ AbsoluteTiming @ (a/b)

0.637064

But suppose ...

- asked by wxffles (12 votes), answered by Michael E2 (6 votes)

=====
 Can you answer these?
 =====

[Display of ConfusionMatrixPlot depends on Stylesheet] <http://mathematica.stackexchange.com/questions/78229/display-of-confusionmatrixplot-depends-on-stylesheet>

I'm using Classify and do the testing via ClassifierMeasurements. Now I observed that ConfusionMatrixPlot is not shown correctly when using StyleSheet Report(default). Maybe you can reproduce (example ...

- asked by mgamer (2 votes)

[How to restart a Clock] <http://mathematica.stackexchange.com/questions/78677/how-to-restart-a-clock>

The code below is to demonstrate color afterimages. The user chooses a color, fixates the changing numbers at the center until they reach 30 (seconds), then manually switches to white to observe the ...

- asked by abwatson (1 vote)

[NDSolve Poisson PDE for rectangle with hole] <http://mathematica.stackexchange.com/questions/78624/ndsolve-poisson-pde-for-rectangle-with-hole>

When I solved the Poisson PDE with function NDSolve in a rectangular domain with hole in the center, and search the first derivative with x and y why appear these protrusions on the diagram around the ...

- asked by wlkyr (1 vote)

6.41 Tuesday, March 24, 2015

=====

Top new questions this week:

=====

[Faster position list construction from a "take instructions" list] <http://mathematica.stackexchange.com/questions/77542/faster-position-list-construction-from-a-take-instructions-list>

Take some list, e.g., 1,2,3,4,5, and a "take instructions" list, say 1,1,2,1,1.

The latter is read as "take the first element from the list, drop it from the list, take the first element of the ...

- asked by rasher (16 votes), answered by 2012rcampion (9 votes)

[Capturing Data from an Android Phone] <http://mathematica.stackexchange.com/questions/77514/capturing-data-from-an-android-phone>

Is there a way to capture Data from an android phone to be later analyzed in Mathematica?

- asked by Zviovich (10 votes), answered by Zviovich (10 votes)

[Match opening and closing parentheses?] <http://mathematica.stackexchange.com/questions/77779/match-opening-and-closing-parentheses>

Suppose I have a List of the form:

```
lst={"(", "(", "(", ")", "(", ")", ")", "}"
```

By running `Position[lst, "("]` and `Position[lst, ")"]`, I can get the positions of the opening and closing parentheses ...

- asked by becko (8 votes), answered by Simon Woods (12 votes)

[Segmenting Sections of Lines in an Image] <http://mathematica.stackexchange.com/questions/77972/segmenting-sections-of-lines-in-an-image>

I have taken several gps readings while driving around town.

```
gpsPositions=GeoPosition[33.657, -84.5197, 33.6687, -84.4977, 33.692, -84.4907, 33.7057, -84.4287, 33.7431, -84.4027, ...
```

- asked by Zviovich (7 votes), answered by niki (8 votes)

[Flatten nested lists] <http://mathematica.stackexchange.com/questions/78030/flatten-nested-lists>

I have a list as follows

```
lis= a, b, c,d,e, f, g,h,i
```

which I would like to flatten to

```
flattenLis=a,b,c,d,e,f,g,h,i
```

Does anyone have a hint. All my flatten attempts did not ...

- asked by Phadreus (7 votes), answered by Kuba (7 votes)

[How to make a binary function associative? (Or define an n-ary function?)] <http://mathematica.stackexchange.com/questions/77913/how-to-make-a-binary-function-associative-or-define-an-n-ary-function>

Suppose I have a simple function that I assign to an operator

```
f[a_, b_] := a + b
CirclePlus = f
```

Then I want to write

```
1 (+) 2 (+) 3
```

But it doesn't work, because it's trying to evaluate f[1,2,3].

...

- asked by Noon Silk (7 votes), answered by halirutan (9 votes)

[Strange answer from StringReplace] <http://mathematica.stackexchange.com/questions/77771/strange-answer-from-stringreplace>

I have a list of strings and I would check if there is an empty string element, that's "", because I need to replace it with a "0". I try the following

```
StringReplace[{"90", "", "20"}, "" -> "0"]
```

...

- asked by bobknight (7 votes), answered by Sjoerd C. de Vries (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to use Mathematica functions in Python programs?] <http://mathematica.stackexchange.com/questions/4643/how-to-use-mathematica-functions-in-python-programs>

I'd like to know how can I call Mathematica functions from Python.

I appreciate a example, for example, using the Mathematica function Prime.

I had search about MathLink but how to use it in Python ...

- asked by GarouDan (28 votes), answered by GarouDan (10 votes)

[A one line proof that one is zero using Mathematica 10] <http://mathematica.stackexchange.com/questions/65624/a-one-line-proof-that-one-is-zero-using-mathematica-10>

```
a = (Sqrt[2] + 1) (Sqrt[2] - 1) - 1; a/a, Simplify[a]/a, b/b == Simplify[b]/b
```

```
1, 0, True
```

This one line "proof" that one equals zero is disturbing (and could possibly lead to wrong results ...

- asked by Gregoire Nicollier (11 votes), answered by Szabolcs (24 votes)

=====
 Can you answer these?
 =====

[How to simplify an expression with a radical sign nesting in a radical sign] <http://mathematica.stackexchange.com/questions/77902/how-to-simplify-an-expression-with-a-radical-sign-nesting-in-a-radical-sign>

Is there a function can simplify an expression with a radical sign nesting in a radical sign in Mathematica? I use V9.

RatDenmon is a function that can rationalize the denominator.

- asked by user27189 (1 vote)

[Plotting data with four variables; two labels for one of the axes] <http://mathematica.stackexchange.com/questions/77727/plotting-data-with-four-variables-two-labels-for-one-of-the-axes>

I am having difficulty related to 3D plotting task. I have a set of data points in the following form :

data= $1x, 1y1, 1y2, 1z, 2x, 2y1, 2y2, 2z, \dots, nx, ny1, ny2, nz$

The set of points ...

- asked by user91411 (2 votes)

[Lisp Interpreter] <http://mathematica.stackexchange.com/questions/77661/lisp-interpreter>

What is the cleanest way to build a lisp interpreter inside Mathematica.

I'm not looking for all the functions to be implemented but instead just the basic syntax.

- asked by William (3 votes)

6.42 Tuesday, March 17, 2015

=====

Top new questions this week:

=====

[White balance correction with Mathematica] <http://mathematica.stackexchange.com/questions/77235/white-balance-correction-with-mathematica>

Does Mathematica include a function to correct the white balance of an image? ImageAdjust would seem to be the first go-to choice, but I haven't found a way to correct white balance without changing ...

- asked by shrx (12 votes), answered by Karsten 7. (11 votes)

[Inline documentation of "Properties"] <http://mathematica.stackexchange.com/questions/77056/inline-documentation-of-properties>

Context

I find the documentation has become a bit of a maze, in particular given the more recent convention of having keywords has strings rather than Mathematica Keywords.

For instance,

...

- asked by chris (10 votes), answered by halirutan (15 votes)

[What is the fastest way to get the nth distinct permutation of a list?] <http://mathematica.stackexchange.com/questions/77443/what-is-the-fastest-way-to-get-the-nth-distinct-permutation-of-a-list>

What is the fastest way to write a function nthPermutation[xs_List, n_Integer] which is equivalent to Permutations[xs][[n]] but does not explicitly compute all the permutations of xs? This feature ...

- asked by David Zhang (8 votes), answered by 2012rcampion (6 votes)

[Area of Self-Intersecting Polygon with Repeated Vertices] <http://mathematica.stackexchange.com/questions/76999/area-of-self-intersecting-polygon-with-repeated-vertices>

So Mathematica uses an even-odd rule for self-intersecting polygons, both when rendering them and when calculating their area:

```
poly = Polygon@{0., 0, 3, 0, 3, 2, 1, 2, 1, 1, 2, 1, 2, 3, ...}
```

- asked by Martin Buttner (8 votes), answered by Michael E2 (7 votes)

[Why does cropping an image improve TextRecognize so much?] <http://mathematica.stackexchange.com/questions/76993/why-does-cropping-an-image-improve-textrecognize-so-much>

I am trying to use the TextRecognize function to extract data from certain screenshots. This is already a cropped version.

```
Using TextRecognize on this yields 12 Catherine FicktEuSC|'\A|V|K. Not ...
```

- asked by timvermeulen (8 votes)

[How to evaluate a function on a list until stable?] <http://mathematica.stackexchange.com/questions/77403/how-to-evaluate-a-function-on-a-list-until-stable>

I need to evaluate a function func on a range of integers (NOT recursively, just sequentially) until the result is stable enough. I can write a not very clever step-by-step program using While:

```
...
```

- asked by Ziofil (7 votes), answered by Pickett (6 votes)

[How to programmatically covert a function-like rule to a pure function?] <http://mathematica.stackexchange.com/questions/77436/how-to-programmatically-covert-a-function-like-rule-to-a-pure-function>

Is there a programmatic way to convert a Mathematica rule that acts like a typical mathematical function of one variable into the equivalent pure function? For example, the code should convert

```
f[x_] ...
```

- asked by ibeatty (7 votes), answered by rasher (7 votes)

=====
 ===== Greatest hits from previous weeks: =====

[List of compilable functions] <http://mathematica.stackexchange.com/questions/1096/list-of-compilable-functions>

Is there somewhere a list on the functions that Compile can compile, or the cases in which a particular function can be compiled that I haven't found? I'd be glad even with a list of some of them ...

- asked by Rojo (82 votes), answered by Oleksandr R. (91 votes)

[Having used Mathematica as a "gateway" language, where to from here?] <http://mathematica.stackexchange.com/questions/25702/having-used-mathematica-as-a-gateway-language-where-to-from-here>

I have been using Mathematica for about a year. It is the first language that I have attempted to learn. I'm still very much a newbie, but there are moments I feel more like I am waving than drowning. ...

- asked by geordie (42 votes), answered by Leonid Shifrin (47 votes)

==== Can you answer these?
====

[What is the "Origin" rule for in a Dataset?] <http://mathematica.stackexchange.com/questions/77186/what-is-the-origin-rule-for-in-a-dataset>

Take an innocuous Dataset.

```
d= Dataset[List[ Association[Rule["A", "K1"],Rule["B",6.]], Association[Rule["A", "K1"],Rule["B",1.]],
Association[Rule["A", "K2"],Rule["B",1.]], ...
```

- asked by Ymareth (1 vote)

[Running Java with Wolfram Workbench on a parallel kernel] <http://mathematica.stackexchange.com/questions/77137/running-java-with-wolfram-workbench-on-a-parallel-kernel>

I'm trying to load my package on a parallel kernel while debugging in Wolfram Workbench 2.0. My project is set up as a Java project and parts of it use Java functions located in jar files. The java ...

- asked by faysou (1 vote)

[Fitting data to a derivative model] <http://mathematica.stackexchange.com/questions/77345/fitting-data-to-a-derivative-model>

I just started using Mathematica. I would like to use Mathematica to do non-linear regression. My model equation is :

...

- asked by Asd (1 vote)

6.43 Tuesday, March 10, 2015

=====

Top new questions this week:

=====

[Different floating-point numbers equal?] <http://mathematica.stackexchange.com/questions/76896/different-floating-point-numbers-equal>

Let's define two different numbers.

```
x = 1.
y = 1. + 2^-52 (* equivalently, 1 + $MachineEpsilon *)
```

Let's make sure they're different with FullForm:

```
x // FullForm (* 1.' *)
y // FullForm (* ...
```

- asked by 2012rcampion (12 votes), answered by Karsten 7. (8 votes)

[Major slowdown when using a ColorFunction with more than one named scheme] <http://mathematica.stackexchange.com/questions/76610/major-slowdown-when-using-a-colorfunction-with-more-than-one-named-scheme>

Earlier Kuba noted a major slowdown with code Simon Woods posted. Here is a simplified example.

First a color function using two different named gradient schemes:

```
fn = ColorData[If[# < 0.5, ...
```

- asked by Mr.Wizard (12 votes), answered by Mr.Wizard (15 votes)

[Min, Max are slow on TimeObjects]<http://mathematica.stackexchange.com/questions/76652/min-max-are-slow-on-timeobjects>

There's something wrong with how Min and Max are implemented for TimeObject:

```
times = TimeObject[List[0, 14, 55.99'], TimeObject[List[0, 14, 57.8'], TimeObject[List[0, 14, 59.09'], ...
```

- asked by alancalvitti (12 votes), answered by Mr.Wizard (10 votes)

[How to properly inject iterators into table?]<http://mathematica.stackexchange.com/questions/76917/how-to-properly-inject-iterators-into-table>

Goofing off on a prior question, I was fiddling with other methods, which led me to the need to inject a constructed set of iterators into a table construct.

Now,

```
ClearAll[a, b, z, z2]
```

```
z = a, 2, ...
```

- asked by rasher (8 votes), answered by Kuba (7 votes)

[How to make a movie from a complex demonstration?]<http://mathematica.stackexchange.com/questions/76832/how-to-make-a-movie-from-a-complex-demonstration>

I have a complex Manipulate-based demonstration containing a few sliders and a Setterbar.

I would like to make a movie out of it, avi, or whatever else. The movie will then be used for a journal ...

- asked by Alexei Boulbitch (8 votes), answered by Karsten 7. (6 votes)

[Mathematica not honoring the distributive property of multiplication?]<http://mathematica.stackexchange.com/questions/76457/mathematica-not-honoring-the-distributive-property-of-multiplication>

```
Reduce[ ForAll[ multiplicand, summandA, summandB, Element[multiplicand, summandA, summandB, Reals], multiplicand*summandA - multiplicand*summandB == multiplicand*(summandA - ...
```

- asked by gaazkam (8 votes), answered by Adam Strzebonski (10 votes)

[How to Map a function with HoldAll attribute]<http://mathematica.stackexchange.com/questions/76558/how-to-map-a-function-with-holdall-attribute>

First of all, I'm not sure about the title of this question, so please correct me if there is any title more sensible than mine. The problem is the following: I have a function f that checks if a ...

- asked by bobknight (7 votes), answered by kguler (5 votes)

=====
Greatest hits from previous weeks: =====

[How to make use of Associations?]<http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (71 votes), answered by Leonid Shifrin (71 votes)

[How to create a new "person curve"?] <http://mathematica.stackexchange.com/questions/17704/how-to-create-a-new-person-curve>

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter WolframAlpha["person curve"] into a Mathematica notebook, or person curve into ...

- asked by Simon (49 votes), answered by Vitaliy Kaurov (21 votes)

=====
Can you answer these? =====

[How to force the writing of buffers onto disk?]<http://mathematica.stackexchange.com/questions/76351/how-to-force-the-writing-of-buffers-onto-disk>

Usually, buffering is good; except when you critically need to write data to disk. Is there a way to force the writing of buffers onto disk? (I'm using a binary file)

I believe a Close[] followed ...

- asked by richard (4 votes)

[Trouble using Solve and NSolve with functions involving Erf]<http://mathematica.stackexchange.com/questions/76429/trouble-using-solve-and-nsolve-with-functions-involving-erf>

I have the following functions:

```
R[k_, x_, t_] := -.5*(k - x)*(1 + Erf[-(k - x)/t])
L[k_, c_, x_, t_] := .5*c*(k - x)*(1 + Erf[(k - x)/t])
```

I'm interested in finding the k that solves some equation ...

- asked by Pburg (1 vote)

[Packages and Notebooks as a Databin]<http://mathematica.stackexchange.com/questions/76474/packages-and-notebooks-as-a-databin>

The new Data Drop product sounds interesting. Can I use Databin to share Packages and Notebooks?

If yes. How? Something like:

```
bin = CreateDatabin[]
DatabinAdd[bin, <|"myPack" -> "???"|>]
```

...

- asked by Murta (1 vote)

6.44 Tuesday, March 3, 2015

=====

Top new questions this week:

=====

[Finding a function that fits the shape of an image]<http://mathematica.stackexchange.com/questions/75855/finding-a-function-that-fits-the-shape-of-an-image>

How can I find a function that fits the given shape of an image? Or instead extract a point set from the shape and then find an interpolating function fits the shape.

An example image is attached.

- asked by Mikayel (12 votes), answered by belisarius (21 votes)

[Adding Trace produces error messages]<http://mathematica.stackexchange.com/questions/76082/adding-trace-produces-error-messages>

This is very strange. As I was trying to debug this problem, I noticed when I add Trace then I get lots of internal errors generated. This also happens the first time after the kernel is started. ...

- asked by Nasser (11 votes), answered by WReach (9 votes)

[How can I define or use a new coordinate system in Mathematica?]<http://mathematica.stackexchange.com/questions/75815/how-can-i-define-or-use-a-new-coordinate-system-in-mathematica>

I want to use the dipole coordinate system as defined in this paper: <http://arxiv.org/abs/physics/0606044>

I see that Mathematica can do all kinds of vector analysis using different kinds of ...

- asked by jvriesem (7 votes), answered by Itai Seggev (0 votes)

[Inconsistent behavior of undocumented Encode->Import->StringToStream->Get on password-locked stream]<http://mathematica.stackexchange.com/questions/76085/inconsistent-behavior-of-undocumented-encode-import-stringtostream-get-on-pas>

Let's save a definition. Encode it with password/key and Get it again.

We will not use Get directly on directory but with combination of Get+StringToStream+Import.

Get works with streams since V9.0 ...

- asked by Kuba (7 votes), answered by Jinxed (1 vote)

[Ghost trails with Animate?]<http://mathematica.stackexchange.com/questions/75936/ghost-trails-with-animate>

What are some approaches to integrate Ghost trails methods with Animate, which otherwise seem more suited for exporting individual frames?

For example, given this rootPlot function, how can trails ...

- asked by alancalvitti (7 votes), answered by Pickett (9 votes)

[how to build matrix from set of vectors and other matrices using ArrayFlatten]<http://mathematica.stackexchange.com/questions/76311/how-to-build-matrix-from-set-of-vectors-and-other-matrices-using-arrayflatten>

I want to build a 6 by 3 matrix, from the following: one vector is 3 by 1, then a matrix, which is 3 by 2. These will go to the top 3 rows. Now the bottom 3 rows, I'll have 3 vectors each is 3 by 1. ...

- asked by Nasser (6 votes), answered by Kuba (5 votes)

[Computing launch parameters for hitting a point in 3D with projectile under influence of wind]<http://mathematica.stackexchange.com/questions/75945/computing-launch-parameters-for-hitting-a-point-in-3d-with-projectile-under-infl>

The end goal of this problem is to compute functions which describe the launch parameters which are needed to hit a specified goal in 3D in the presence of wind disturbances. This is as far I have ...

- asked by Julian (6 votes), answered by belisarius (7 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Where can I find examples of good Mathematica programming practice?] <http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J.M. (333 votes), answered by faysou (308 votes)

[How do I draw a pair of buttocks?]<http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks>

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (209 votes), answered by mikuszefski (327 votes)

=====
 ===== Can you answer these? =====

[FindMinimum's WorkingPrecision behaviour]<http://mathematica.stackexchange.com/questions/76259/findminimums-workingprecision-behaviour>

I discovered the following behaviour when using FindMinimum for constrained optimization:

```
Clear@f
f[x_?NumericQ] := (Print@Precision@x; x^2)
FindMinimum[{f[x], x &lt; 1}, {x, 1}, WorkingPrecision ...
```

- asked by sebhofer (1 vote)

[Font style in Mathematica and .tex file]<http://mathematica.stackexchange.com/questions/76250/font-style-in-mathematica-and-tex-file>

I am using Mathematica 8. I want to label the axes of figure in "Times" font.

```
Plot[Sin[z], {z, -2 Pi, 2 Pi}, Frame -&gt; True,
FrameLabel -&gt; {"z", "a(z)"},
LabelStyle -&gt; Directive[FontSize ...
```

- asked by zenith (3 votes)

[ParametricNDSolveValue over a region]<http://mathematica.stackexchange.com/questions/75887/parametricndsolvevalue-over-a-region>

I'm getting the following behavior I don't understand when using ParametricNDSolveValue over a region. You can reproduce the behavior considering Poisson's equation as shown below

The below works as ...

- asked by user2162855 (1 vote)

6.45 Tuesday, February 17, 2015

Tuesday, February 24, 2015

==== Top new questions this week: =====

[Can Mathematica's random number generation be improved?]<http://mathematica.stackexchange.com/questions/75303/can-mathematicas-random-number-generation-be-improved>

Performance on Random Number generation is intolerable. Whenever you need many deviates from the same distribution but with different parameters it takes forever.

Here is a thread on Poisson ...

- asked by JEP (11 votes), answered by JEP (4 votes)

[The efficiency compare between Flatten[#, 1] & and Join @@ #&] <http://mathematica.stackexchange.com/questions/75590/the-efficiency-compare-between-flatten-1-and-join>

Err..Often I met the situation to join lists at the first level and I used to just Flatten[#, 1] & Join @@ them. However, I found (when glance over the mathematica.stackexchange.com) someone else prefer ...

- asked by Harry (11 votes), answered by Michael E2 (8 votes)

[Is Mathematica 'ContourPlot' function really so efficient?] <http://mathematica.stackexchange.com/questions/75352/is-mathematica-contourplot-function-really-so-efficient>

I wanted to find the roots of the function $f(x, y) = \sin(3.2x) \sin(1.3y) - 2.1 \sin(1.3x) \sin(3.2y)$. This is what the function looks like:

```
f[x_, y_] = Sin[3.2 x]*Sin[1.3*y] - 2.1*Sin[1.3*x]*Sin[3.2*y]
...
```

- asked by anderstood (11 votes), answered by george2079 (16 votes)

[How to randomly select subsets] <http://mathematica.stackexchange.com/questions/75431/how-to-randomly-select-subsets>

I have a list of around 300 elements. I want to sample subsets of length 25 such that my samples are all distinct. My first inclination was to use something like RandomSample[Subsets[list, 25], ...

- asked by mtiano (7 votes), answered by Mr.Wizard (8 votes)

[Prevent Export from overwriting files] <http://mathematica.stackexchange.com/questions/75745/prevent-export-from-overwriting-files>

Export["filepath", Expression1] works for me, but if filepath1 already exists, it will be overwritten. I'd like Export to notify me and ask for a confirmation, if it tries to overwrite filepath1.

I ...

- asked by user1541776 (6 votes), answered by Mr.Wizard (11 votes)

[How trustworthy is NMaximize?]<http://mathematica.stackexchange.com/questions/75668/how-trustworthy-is-nmaximize>

Suppose I solve a constrained optimisation problem using NMaximize. How confident can I be of the accuracy of the result?

For concreteness, suppose that F,G are (exactly known) functions (say, ...

- asked by Feanor (6 votes), answered by mikeagibson (8 votes)

[Mathematica and POV-Ray workflow: ListContourPlot3D]<http://mathematica.stackexchange.com/questions/75497/mathematica-and-pov-ray-workflow-listcontourplot3d>

I have the following function describing a molecular electronic Orbital.

```
f[r_] = E^-((r - R0)/\[CapitalDelta]r)^2;
```

```
r = Sqrt[x^2 + y^2 + z^2];
```

```
cosphi[x_, y_, z_] := If[x == 0 && y == 0 ...
```

- asked by DPengel (6 votes)

==== Greatest hits from previous weeks: =====

[How to generate a random snowflake]<http://mathematica.stackexchange.com/questions/39361/how-to-generate-a-random-snowflake>

'Tis the season... And it's about time I posed my first question on Mathematica Stack Exchange. So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

- asked by Peltio (100 votes), answered by Silvia (132 votes)

[Where can I find examples of good Mathematica programming practice?]<http://mathematica.stackexchange.com/questions/18/where-can-i-find-examples-of-good-mathematica-programming-practice>

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J.M. (333 votes), answered by faysou (308 votes)

=====
 ===== Can you answer these?
 =====

[Precision loss in FourierDCT]<http://mathematica.stackexchange.com/questions/75292/precision-loss-in-fourierdct>

I have high precision data that I want to do Fourier transform with, but it looks like the precision is lost dramatically.

data = ...

- asked by xslittlegrass (2 votes)

 [Can I use Mathematica 9.0 to open an MX file produced by Mathematica 10?]<http://mathematica.stackexchange.com/questions/75581/can-i-use-mathematica-9-0-to-open-an-mx-file-produced-by-mathematica-10>

I have used Mathematica 10 installed on a workstation of university's lab to run a NDSolve code that produced a .mx file. Then I copy the .mx file to my laptop which has Mathematica 9.0. When I try to ...

- asked by lxy (1 vote)

 [Is it possible to circumvent this overflow?]<http://mathematica.stackexchange.com/questions/75329/is-it-possible-to-circumvent-this-overflow>

I'm trying to evaluate the following function numerically:

\$

$$f(A,B)=\frac{2A\pi^{5/2}(-1)^B(A!)^{2B}}{4\tilde{F}_3\left(\frac{1}{2},1-A,1-A,1-B\right)} \dots$$

- asked by Ziofil (1 vote)

6.46 Tuesday, February 17, 2015

=====

Top new questions this week:

=====

[Change Values in Dataset under Condition]<http://mathematica.stackexchange.com/questions/74165/change-values-in-dataset-under-condition>

I have the following Dataset:

```
ds = Dataset@*Map[AssociationThread[{"ID", "VAL1", "VAL2", "VAL3",
  "Type"} -&gt; #] &amp;];@
{"C09", 18.5, 18.5, 18.5, "FE"}, {"C11", 21, 21, 21, "FE"},
{"C10", ...
```

- asked by Lea (10 votes), answered by WReach (6 votes)

[Drawing a Gradient Between Two Circular Arcs]<http://mathematica.stackexchange.com/questions/73928/drawing-a-gradient-between-two-circular-arcs>

Suppose I wanted to use Mathematica graphics primitives to create a gradient of colors between two circular arcs. It's easy enough to make an area between two circles a solid color, but what if I ...

- asked by Noah Rubin (10 votes), answered by ybeltukov (11 votes)

[How to search Dataset to find all keys share same Value]<http://mathematica.stackexchange.com/questions/74200/how-to-search-dataset-to-find-all-keys-share-same-value>

If I have the following Dataset

```
ds=Dataset[{
&lt;|"a" -&gt; 1, "b" -&gt; "x", "c" -&gt; 6|&gt;;
&lt;|"a" -&gt; 2, "b" -&gt; "y", "c" -&gt; {2, 3}|&gt;;
&lt;|"a" -&gt; "x", "b" -&gt; "z", "c" ...
```

- asked by Algoi (8 votes), answered by Leonid Shifrin (5 votes)

[Windows command line arguments, stdin & stdout] <http://mathematica.stackexchange.com/questions/74032/windows-command-line-arguments-stdin-stdout>

Is it possible to utilize all three: commandline arguments, stdin, and stdout all at once in script for Windows? Unix is fairly easy, but I can't get the following to work with Windows.

Using the ...

- asked by William (8 votes), answered by WReach (7 votes)

[How can I replace the Greek symbols in an expression with their plain text names?] <http://mathematica.stackexchange.com/questions/74047/how-can-i-replace-the-greek-symbols-in-an-expression-with-their-plain-text-names>

Suppose I have an expression with Greek symbols in it. How would I convert that expression to another expression where the Greek symbols have been replaced with their names in plain text? I've ...

- asked by jmbejara (8 votes), answered by Mr.Wizard (11 votes)

[Convert number to word] <http://mathematica.stackexchange.com/questions/73717/convert-number-to-word>

I have a big number like: 123 456 789. Now I'll to write it like this

123 million 456 thousand 789

I've search on the internet but nothing found that works.

How can you do that? Thanks.

- asked by Luis (8 votes), answered by Mr.Wizard (10 votes)

[Why does an inert ReplaceAll modify this Dataset?] <http://mathematica.stackexchange.com/questions/73855/why-does-an-inert-replaceall-modify-this-dataset>

I cannot see any reason for this behavior besides a bug, but I've been wrong before so I put it before the community:

```
ds = Dataset[{
<| "ID" -> "Alpha", "v1" -> 1, "v2" -> 0 |>,
...

```

- asked by Mr.Wizard (7 votes), answered by Leonid Shifrin (7 votes)

==== Greatest hits from previous weeks: =====

[Image processing: Floor plan - detecting rooms' borders (area) and room names' texts]<http://mathematica.stackexchange.com/questions/19546/image-processing-floor-plan-detecting-rooms-borders-area-and-room-names-t>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

- asked by s.s.o (39 votes), answered by niki (39 votes)

[Generating visually pleasing circle packs]<http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (70 votes), answered by level1807 (42 votes)

=====
 ===== Can you answer these?
 =====

[Exclusion disappears but style doesn't work]<http://mathematica.stackexchange.com/questions/73894/exclusion-disappears-but-style-doesnt-work>

Consider this code:

```
f[x_]:= (6 + 4 x + x^2 - x^3)/(x-2)
Plot[f[x], {x, -10, 10},
Exclusions -> {2},
ExclusionsStyle -> Directive[Red, Dashed]]
```

It produces this image.

Note that the vertical ...

- asked by David (4 votes)

[What is Association[Rule["ID",number]] and how it is used]<http://mathematica.stackexchange.com/questions/74197/what-is-associationruleid-number-and-how-it-is-used>

I am trying to understand the structure and the use of Dataset and I came across something new to me.

First check this example:

```
ds1=Dataset[{
  &lt;|"a" -&gt; 1, "b" -&gt; "x", "c" -&gt; 6|&gt;,
  ...
}
```

- asked by Algohi (4 votes)

[Can I get a symbol cross-reference of a Mathematica Notebook?]<http://mathematica.stackexchange.com/questions/73927/can-i-get-a-symbol-cross-reference-of-a-mathematica-notebook>

Is there a way to get a cross reference listing for a notebook or set of notebooks?

- asked by Ralph Dratman (1 vote)

6.47 Tuesday, February 10, 2015

=====
 Top new questions this week:
 =====

[Messages leak out from Block]<http://mathematica.stackexchange.com/questions/73458/messages-leak-out-from-block>

When assigning message to a symbol localized by Block, I would expect that this message is not accessible outside of Block, but I observe different behavior:

```
ClearAll[x] Block[x, x::test1 = ...
```

- asked by jkuczm (12 votes), answered by Mr.Wizard (6 votes)

[Copy Built-in function to new name]<http://mathematica.stackexchange.com/questions/73454/copy-built-in-function-to-new-name>

It is know that some built-in functions are system function and changing their properties may cause trouble.

Suppose for example I want to change features of Cases:

```
SetAttributes[Cases, HoldFirst]
```

...

- asked by AlgoHi (10 votes), answered by Mr.Wizard (8 votes)

[Possible bug: Quantity[2,"meters"] returns 2 None meters]<http://mathematica.stackexchange.com/questions/73259/possible-bug-quantity2-meters-returns-2-none-meters>

I'm using 10.0 for Linux.

Trial 1:

Quantity[2,"meters"] 2 None meters

Trial 2:

Quantity[2,"Meters"] 2 meters

Trial 3:

Quantity[2,"meters"] //InputForm Quantity[2*None, "Meters"]

It seems ...

- asked by Jacob Schwartz (10 votes)

[How does \$CellContext' work?] <http://mathematica.stackexchange.com/questions/73530/how-does-cellcontext-work>

The only official info about \$CellContext' I was able to find is:

placeholder for the context of a symbol inside Dynamic

from StandardNamespaces

I have some intuitive understanding how it works ...

- asked by Kuba (9 votes), answered by Kuba (5 votes)

[Solve a PDE over a region defined by a Bezier patch]<http://mathematica.stackexchange.com/questions/73350/solve-a-pde-over-a-region-defined-by-a-bezier-patch>

I am using NDSolve to find the solution to a PDE over an arbitrary domain. The domain is specified by a Bezier patch.

pts = 10, 0, 0, 30, 15, 10, 8, 30, 25, 37, 20, 37, 35, ...

- asked by cfdguy (9 votes), answered by Michael E2 (3 votes)

[Triangular mesh of random points on a sphere] <http://mathematica.stackexchange.com/questions/73354/triangular-mesh-of-random-points-on-a-sphere>

My employer with a new logo (shown below). I do not have information on how this was created (as it was done by an outside company), though I'm fairly sure it was not done in any formal mathematical ...

- asked by user1375062 (9 votes), answered by ybeltukov (15 votes)

[Slow work of SQLInsert with MS SQL Server in V10] <http://mathematica.stackexchange.com/questions/73444/slow-work-of-sqlinsert-with-ms-sql-server-in-v10>

This question is very similar to: Slow work of SQLInsert with SQLite, but for MS SQL Server. Unfortunately the use of SQLBeginTransaction and SQLCommitTransaction do not improved the performance as in ...

- asked by Murta (8 votes), answered by Murta (8 votes)

=====
 ===== Greatest hits from previous weeks: =====

[How to use Mathematica functions in Python programs?] <http://mathematica.stackexchange.com/questions/4643/how-to-use-mathematica-functions-in-python-programs>

I'd like to know how can I call Mathematica functions from Python.

I appreciate a example, for example, using the Mathematica function Prime.

I had search about MathLink but how to use it in Python ...

- asked by GarouDan (28 votes), answered by GarouDan (10 votes)

[How do I clear all user defined symbols?] <http://mathematica.stackexchange.com/questions/850/how-do-i-clear-all-user-defined-symbols>

Is there some way to do this other than going to Evaluation -> Quit kernel and firing a new one up?

- asked by niklasfi (27 votes), answered by Artes (24 votes)

=====
 ===== Can you answer these? =====

[Problem with DiscretizeRegion] <http://mathematica.stackexchange.com/questions/73470/problem-with-discretizeregion>

```
R = RegionUnion[Disk[{0, 0}, 1, {0, Pi}], Disk[{1/2, 0}, 1/2]] //
RegionDifference[#, RegionUnion[Disk[{1/2, 0}, 1/6], Disk[{-1/2, 0},
1/2]]] &amp;
(dr = DiscretizeRegion[R]) // Timing
```

If you run ...

- asked by Apple (6 votes)

[How to get the correct latitude and longitude coordinates using FindGeoLocation on street addresses] <http://mathematica.stackexchange.com/questions/73656/how-to-get-the-correct-latitude-and-longitude-coordinates-using-findgeo-location>

Have a list of street addresses:

```
addresses = {"123 D st, Davis, CA 95616",
"140 B St, Davis, CA 95616", "212 E st, Davis, CA 95616",
"325 G St, Davis, CA 95616"};
```

I used FindGeoLocation to ...

- asked by Rebecca (2 votes)

[Why does Mathematica provide inconsistent convergence conditions?] <http://mathematica.stackexchange.com/questions/73652/why-does-mathematica-provide-inconsistent-convergence-conditions>

```
In[1]:= Clear[a, n]
In[2]:= SumConvergence[(n^(n - 2))/((a^n)*(n!)), n]
Out[2]= Abs[a] &gt; E
In[3]:= SumConvergence[(n^(n - 2))/((E^n)*(n!)), n]
Out[3]= True
```

All right. So, according to Out[2], the ...

- asked by gaazkam (2 votes)

6.48 Tuesday, February 3, 2015

=====

Top new questions this week:

=====

[Mathematica and POV-Ray workflow (Q&A)] <http://mathematica.stackexchange.com/questions/72899/mathematica-and-pov-ray-workflow-qa>

A couple of years ago, Alexey Popkov asked this question: Which ray tracing software is compatible with Graphics3D? It is my opinion, for various reasons, that out of the many ray tracing programs ...

- asked by Kim Fierens (18 votes), answered by xslittlegrass (17 votes)

[Confused about how Partition works] <http://mathematica.stackexchange.com/questions/72740/confused-about-how-partition-works>

I have a problem about the padding list about Partition command. For instance,

```
Partition[a, b, c, d, e, f, g, 3, 1, -2, 1, x, y, z]
```

```
z, a, b, a, b, c, b, c, d, c, d, e, d, e, f, ...
```

- asked by ShutaoTang (16 votes), answered by Mr.Wizard (15 votes)

[I define a variable as local to a module BUT then the module uses its global value! Why?] <http://mathematica.stackexchange.com/questions/72758/i-define-a-variable-as-local-to-a-module-but-then-the-module-uses-its-global-val>

I have a question about modules and local variables.

Here's my example:

```
h = 5;
```

```
Module[{a, h}, a[h_]= h^2; a[4]]
```

```
(*Out[2] = 25*)
```

I expected the module to return 16 and not 25! I believed h to be ...

- asked by pan_e_gaban (12 votes), answered by Leonid Shifrin (13 votes)

[Floating point operations division vs multiplication; how do they affect accuracy?] <http://mathematica.stackexchange.com/questions/72801/floating-point-operations-division-vs-multiplication-how-do-they-affect-accuracy>

Given two functions:

$$f[x_] := x ((x + 1)^{(1/2)} - x^{(1/2)})$$

$$g[x_] := x / ((x + 1)^{(1/2)} + x^{(1/2)})$$

Which one is more accurate?

Side note: If you could explain why, that would really help me out, I ...

- asked by Claire Blackman (10 votes), answered by DumpsterDoofus (8 votes)

[A better "VisibleSpectrum" function?] <http://mathematica.stackexchange.com/questions/73161/a-better-visible-spectrum-function>

Since `ColorData["VisibleSpectrum"]` is wrong I would like to have a more accurate function to use. Can this information be extracted from Mathematica itself?

- asked by Mr.Wizard (9 votes), answered by Mr.Wizard (10 votes)

[Why can `AppendTo` modify a referenced list in-place but `Part` cannot?] <http://mathematica.stackexchange.com/questions/72624/why-can-appendto-modify-a-referenced-list-in-place-but-part-cannot>

`Part`, `AppendTo`, `PrependTo`, `AddTo`, etc. allow in-place modification of a list, but only `Part` requires that the list be referenced through a simple symbol, e.g. the following all does what you'd ...

- asked by Eric Parker (9 votes), answered by Leonid Shifrin (11 votes)

[Is there a way to identify a symbolic fraction?] <http://mathematica.stackexchange.com/questions/73075/is-there-a-way-to-identify-a-symbolic-fraction>

Is there a way to use `Head` to detect a symbolic fraction? In particular I find,

`Head[a/b]` `Head[1/5]`

`Times`

`Rational`

where I would like to get `Head[a/b] = Rational`. I want to test if a ...

- asked by JeffDror (8 votes), answered by ybeltukov (11 votes)

=====
 Greatest hits from previous weeks: =====

[Division by zero is slow] <http://mathematica.stackexchange.com/questions/64247/division-by-zero-is-slow>

Suppose I have two arrays of data, which I want to divide:

```
n = 1000; a = RandomInteger[1, 9, n, n]; b = RandomInteger[1, 9, n, n]; First @ AbsoluteTiming @ (a/b)
```

0.637064

But suppose ...

- asked by wxffles (12 votes), answered by Michael E2 (6 votes)

[Alternatives to procedural loops and iterating over lists in Mathematica] <http://mathematica.stackexchange.com/questions/7924/alternatives-to-procedural-loops-and-iterating-over-lists-in-mathematica>

While there are some cases where a For loop might be reasonable, it's a general mantra one I subscribe to myself that "if you are using a For loop in Mathematica, you are probably doing it wrong". ...

- asked by Mr.Wizard (101 votes), answered by Mr.Wizard (66 votes)

=====
 Can you answer these? =====

[Extra spaces when exporting strings into pdf (bug, linux)] <http://mathematica.stackexchange.com/questions/72896/extra-spaces-when-exporting-strings-into-pdf-bug-linux>

Rationale: Imagine you would like to create a publication quality figure in Mathematica, from under Linux. Naturally, it will contain text/labels.

Problem: Here is a simple string "Amin,new".

...

- asked by Alexey Bobrick (1 vote)

[LayeredGraphPlot Vertex Spacing] <http://mathematica.stackexchange.com/questions/72847/layeredgraphplot-vertex-spacing>

For anyone who has used LayeredGraphPlot, you have probably seen that the vertex spacing is consistent throughout, that vertices have the same minimum unit of spacing in the vertical and horizontal ...

- asked by [iwantmyphd](#) (1 vote)

[Header and footer banners in Slide Show style] <http://mathematica.stackexchange.com/questions/72903/header-and-footer-banners-in-slide-show-style>

I would like to create Mathematica slide shows that contain several tailored, fixed banners as headers and footers, much as MS Powerpoint, MS Word, Apple Pages, and LaTeX documents allow one to ...

- asked by [David G. Stork](#) (3 votes)

6.49 Tuesday, January 27, 2015

=====

Top new questions this week:

=====

[Can Mathematica solve Plateau's problem (finding a minimal surface with specified boundary)?] <http://mathematica.stackexchange.com/questions/72203/can-mathematica-solve-plateaus-problem-finding-a-minimal-surface-with-specified>

Given a closed curve \mathcal{C} in three dimensions, is it possible to use Mathematica's built-in functionality to compute a minimal surface whose boundary is \mathcal{C} ? For simplicity, let us ...

- asked by [Rahul](#) (20 votes), answered by [ybeltukov](#) (17 votes)

[Maximize[Cos[x - 1], x] is not evaluated] <http://mathematica.stackexchange.com/questions/72444/maximizecosx-1-x-is-not-evaluated>

No explanation needed:

Maximize[Cos[x + 1], x] Maximize[Cos[x - 1], x]

producing

{1, {x -> -1 + 2 Pi}}

Maximize[Cos[1 - x], x]

Needless to say, this is pretty amusing.

Does anyone know why ...

- asked by DumpsterDoofus (18 votes), answered by Michael E2 (8 votes)

[Reading from a socket stream] <http://mathematica.stackexchange.com/questions/72551/reading-from-a-socket-stream>

I noticed an undocumented socket package (SocketLink) in Mathematica (Using version 10, not sure when it was actually added) and wrote a barebones HTTP responder using it:

```
&lt;&lt;SocketLink'
```

```
host = ...
```

- asked by MBryn (10 votes)

[For a given expression: if it appears, remove it, but if it is absent, add it] <http://mathematica.stackexchange.com/questions/72380/for-a-given-expression-if-it-appears-remove-it-but-if-it-is-absent-add-it>

While reformatting Szabolcs's code from (42660) I noticed this interesting operation:

```
expr/.{{-\[Infinity],mid___,\[Infinity]}:>{mid},{-\[Infinity],mid___}>{mid,\[In
```

- asked by Mr.Wizard (10 votes), answered by Mr.Wizard (5 votes)

[Unexpected pattern matching behaviour: PatternSequence vs. Optional] <http://mathematica.stackexchange.com/questions/72290/unexpected-pattern-matching-behaviour-patternsequence-vs-optional>

Consider the following pattern-matching expressions:

```
MatchQ[{1, 2}, {a_, b_}] (* True *)
```

```
MatchQ[{1, 2}, {a_, b_:0}] (* True *)
```

```
MatchQ[{1, 2}, ...
```

- asked by WReach (10 votes)

[Incorrect use of Scaled causes crash] <http://mathematica.stackexchange.com/questions/72560/incorrect-use-of-scaled-causes-crash>

Bug introduced in 8.0 and persisting through 10.0.2 or later

While playing with Scaled, I made a syntax error which caused a crash instead of an error message ...

Do you get the same ? (I have ...

- asked by SquareOne (9 votes)

[Using map projections with astronomical data]<http://mathematica.stackexchange.com/questions/72426/using-map-projections-with-astronomical-data>

I noticed that all important "Geoprojections" are available in projections for a spherical reference models: GeoProjectionData function;

1 - I am trying using the sinusoidal projection for ...

- asked by locometro (8 votes), answered by Kuba (7 votes)

=====
Greatest hits from previous weeks: =====

[How to find all the local minima/maxima in a range]<http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range>

I want to find :

all local maxima in range all local minima in range

>From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (46 votes), answered by Daniel Lichtblau (45 votes)

[Alternatives to procedural loops and iterating over lists in Mathematica]<http://mathematica.stackexchange.com/questions/7924/alternatives-to-procedural-loops-and-iterating-over-lists-in-mathematica>

While there are some cases where a For loop might be reasonable, it's a general mantra one I subscribe to myself that "if you are using a For loop in Mathematica, you are probably doing it wrong". ...

- asked by Mr.Wizard (101 votes), answered by Mr.Wizard (66 votes)

=====
Can you answer these?
=====

[Is there a notebook to create entries for OEIS?] <http://mathematica.stackexchange.com/questions/72451/is-there-a-notebook-to-create-entries-for-oeis>

Is there a notebook to create entries for OEIS?

I seem to recall something like this a few years ago, but I haven't been able to find one. It might be from MathWorld. Any suggestions?

Edit If I had ...

- asked by Fred Kline (2 votes)

[SumConvergence fails in version 10] <http://mathematica.stackexchange.com/questions/72361/sumconvergence-fails-in-version-10>

`SumConvergence[(-1)^(n + 1) ((Cos[n^2] + Sin[n + 2])/7^n), n]`

Mathematica fails to provide a result (true/false) but wolfram alpha works. What should I do ?

It gives ...

- asked by Parhs (5 votes)

[How can I detect certain letters by shape in an image?] <http://mathematica.stackexchange.com/questions/72497/how-can-i-detect-certain-letters-by-shape-in-an-image>

I have a website where people can post Flipbook animations, called Flipnotes. Unfortunately, most of the Popular flipnotes are in the following categories:

MV (Music Video) AV (Audio Video) AMV ...

- asked by Austin Burk (1 vote)

6.50 Tuesday, January 20, 2015

=====

Top new questions this week:

=====

[Excessive memory use by Mathematica kernel in 10.0.2 after executing simple commands] <http://mathematica.stackexchange.com/questions/71889/excessive-memory-use-by-mathematica-kernel-in-10-0-2-after-executing-simple-comm>

Warning: the code below may hang your system if you have the Suggestions Bar enabled.

When issuing the following simple statements to Mathematica, it responds with a valid answer. However, ...

- asked by Simon (18 votes), answered by Simon (8 votes)

[What is the purpose of Internal'LocalizedBlock?]<http://mathematica.stackexchange.com/questions/71881/what-is-the-purpose-of-internallocalizedblock>

I have come across the (internal) use of of the function:

Internal'LocalizedBlock

I am trying to determine its purpose. It seem to behave like Internal'InheritedBlock except that a starting value ...

- asked by Mr.Wizard (14 votes), answered by Dan Fortunato (19 votes)

[Least effort to handle a point source inside the domain of PDE(s)]<http://mathematica.stackexchange.com/questions/71902/least-effort-to-handle-a-point-source-inside-the-domain-of-pdes>

By point source I mean a constrained condition at one point inside the domain of PDE(s). For example:

$$\frac{\partial^2 u(t,x,y)}{\partial t^2} = \frac{\partial^2 u(t,x,y)}{\partial \dots}$$

- asked by xzczd (13 votes), answered by Rahul (10 votes)

[Partitioning with constraints on subsets]<http://mathematica.stackexchange.com/questions/71827/partitioning-with-constraints-on-subsets>

Given the following data:

constraints = 11, 2, 11, 3, 11, 4, 11, 6, 11, 9, 1, 6, 5, 6, 2, 5;

weights = 3, 7, 3, 2, 4, 2, 2, 2, 3, 2, 1;

I wish to partition the integers from 1 ...

- asked by Simon Woods (13 votes), answered by ybeltukov (6 votes)

[Filling to Axis as Arrow]<http://mathematica.stackexchange.com/questions/72002/filling-to-axis-as-arrow>

In version 9 I could do the following with the output as shown.

```
ListPlot[Table[{x, x^2}, {x, 0, 1, 0.1}], PlotRange -> All,
Filling -> Axis, FillingStyle -> (Arrow[#] &);]
```

Now in ...

- asked by Hugh (11 votes), answered by Mr.Wizard (9 votes)

[Label multiple edges between same vertices]<http://mathematica.stackexchange.com/questions/72003/label-multiple-edges-between-same-vertices>

I have a simple graph with multiple edges between two vertices, say:

```
Graph[{
Labeled[a -> b, "A"],
Labeled[a -> b, "B"]
}]
```

Unfortunately, Mathematica labels both edges "A".

How can I ...

- asked by Thomas Fankhauser (9 votes), answered by kguler (6 votes)

[Synchronizing the camera view of multiple Image3D panels within a Manipulate interface]<http://mathematica.stackexchange.com/questions/71653/synchronizing-the-camera-view-of-multiple-image3d-panels-within-a-manipulate-int>

I'm trying to synchronize the camera view of multiple Image3D panels displayed within a Manipulate interface.

A random 3D image will do for demonstration purposes.

```
theimg = Image3D[RandomReal[1, ...
```

- asked by Matt (9 votes), answered by bobthechemist (8 votes)

==== Greatest hits from previous weeks: =====

[How to use Mathematica functions in Python programs?]<http://mathematica.stackexchange.com/questions/4643/how-to-use-mathematica-functions-in-python-programs>

I'd like to know how can I call Mathematica functions from Python.

I appreciate a example, for example, using the Mathematica function Prime.

I had search about MathLink but how to use it in Python ...

- asked by GarouDan (27 votes), answered by GarouDan (10 votes)

[How to make use of Associations?]<http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations>

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (67 votes), answered by Leonid Shifrin (70 votes)

=====
 ===== Can you answer these?
 =====

[How to rewrite a nested loop with Reap and Sow]<http://mathematica.stackexchange.com/questions/71838/how-to-rewrite-a-nested-loop-with-reap-and-sow>

I was wondering if anyone know how to rewrite the following nested loop but using Reap and Sow. I need to reduce the execution time. Thank you.

```
list = ; AbsoluteTiming[ Do[ AppendTo[list, ]; ...
```

- asked by Paul (1 vote)

[PlotRange->Automatic the exact function used to calculate outliers]<http://mathematica.stackexchange.com/questions/71808/plotrange-automatic-the-exact-function-used-to-calculate-outliers>

I know that `PlotRange->Automatic` does the following:

"the distribution of coordinate values is found, and any points sufficiently far out in the distribution are dropped. Such points are often ...

- asked by Nick (2 votes)

[How to reduce a quartic form to a quadratic form with equal roots]<http://mathematica.stackexchange.com/questions/72083/how-to-reduce-a-quartic-form-to-a-quadratic-form-with-equal-roots>

Preface: To clear the theoretical background this question is cross-posted on math.stackexchange here.

I have a polynomial in n variables of the form

...

- asked by E.O. (3 votes)

6.51 Tuesday, January 13, 2015

=====

Top new questions this week:

=====

[Why is my data 10 times slower than random data when doing matrix multiplication] <http://mathematica.stackexchange.com/questions/71377/why-is-my-data-10-times-slower-than-random-data-when-doing-matrix-multiplication>

I have some data generated from some program, and it appears that matrix multiplication on these data are about 10 times slower than on some random data:

```
Get["tb.dat"];
```

```
xls = Range[-500, 500, ...
```

- asked by xslittlegrass (14 votes), answered by DumpsterDoofus (10 votes)

[What happens when you divide by ##?] <http://mathematica.stackexchange.com/questions/71348/what-happens-when-you-divide-by>

I've been playing around with sequences a bit. In particular with using ## with unary and binary operators.

Let's start simple, the following all make some kind of sense:

```
+ ## & [a,b] (* a + b ...
```

- asked by Martin Buttner (13 votes), answered by Pickett (11 votes)

[How can FactorInteger be so slow if PrimeQ is fast?] <http://mathematica.stackexchange.com/questions/71489/how-can-factorinteger-be-so-slow-if-primeq-is-fast>

My 8th grade son had a homework problem to find a prime factor of $99!-1$. I thought to be clever/lazy and used `FactorInteger[99!-1]`, but it takes forever. `PrimeQ[99!-1]` very quickly gives False. It ...

- asked by Martin Rommel (11 votes), answered by sn6uv (16 votes)

[Orderless pattern matching] <http://mathematica.stackexchange.com/questions/71463/orderless-pattern-matching>

The MMA docs state that "In matching patterns with Orderless functions, all possible orders of arguments are tried".

Why then does the following not work?

```
plus[x_Integer, y_Real] := x+y
...
```

- asked by sn6uv (9 votes), answered by Mr.Wizard (11 votes)

[Why is this evaluation halved when adding units?] <http://mathematica.stackexchange.com/questions/71496/why-is-this-evaluation-halved-when-adding-units>

Why does this strange behavior occur when dealing with units and quantities?

```
A[t_] := A0 Exp[-b t / (2m)]
```

```
FullSimplify[A[Quantity[0, "Seconds"]]]
```

```
A0 - ...
```

- asked by WChargin (8 votes)

[Multiple bwspec for BoxWhiskerChart] <http://mathematica.stackexchange.com/questions/71478/multiple-bwspec-for-boxwhiskerchart>

If I want to make a horizontal boxplot (with outliers) for y:

```
y = {5.5, 5.61, 4.88, 5.07, 5.42, 5.55, 5.36, 5.29, 5.58, 5.65, 5.57,
5.53, 5.62, 5.29, 5.44, 5.34, 5.79, 5.1, 5.27, 5.39, 5.42, 5.47, ...
```

- asked by shidangai (7 votes), answered by m_goldberg (6 votes)

[The longest run of at most k different elements in a list] <http://mathematica.stackexchange.com/questions/71587/the-longest-run-of-at-most-k-different-elements-in-a-list>

I have a long list with ca. 500K elements. The list contains about 10K different elements.

For simplicity lets assume the list is of the following form:

```
list={a,c,b,a,a,a,b,c,e,f,b,a,e,e,e,a}
```

I ...

- asked by stat_facts (6 votes), answered by Mr.Wizard (5 votes)

=====
 Greatest hits from previous weeks: =====

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (188 votes), answered by Michael E2 (101 votes)

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (17 votes), answered by Artes (10 votes)

=====
 Can you answer these?
 =====

[Extracting an equation from an interpolated function] <http://mathematica.stackexchange.com/questions/71595/extracting-an-equation-from-an-interpolated-function>

Im trying to use LibraryLink to do some calculations in C but part of the expression i want to calculate is an Interpolating Function. C cant use that obviously so I'm trying to shift it to a data ...

- asked by Nicholas Gaffney-Henderson (3 votes)

[Input 'Reduce[Mod[a + x, l] == 0, x]' and output 'x == -a + kl'?] <http://mathematica.stackexchange.com/questions/71365/input-reducemoda-x-l-0-x-and-output-x-a-kl>

```
Reduce[a + x == k l && k > 0, x]
(* k > 0 && x == -a + k l *)
```

I think $a + x == k \mid$ and $\text{Mod}[a + x, 1] == 0$ are equivalent, but when I replace $a + x == k \mid$ by Mod , Mathematica ...

- asked by LoveRight (1 vote)

[ListPlot3D keeps crashing] <http://mathematica.stackexchange.com/questions/71559/listplot3d-keeps-crashing>

I have some data, and I want to plot it by ListPlot3D:

```
image1 = Import["image1.dat", "TSV"];
image1 // Dimensions
(* -&gt; {150000, 3} *)
```

I used:

```
ListPlot3D[image1[[1 ;; 50000]], MaxPlotPoints ...
```

- asked by yashar (1 vote)

6.52 Tuesday, January 6, 2015

=====

Top new questions this week:

=====

[Generating 250 random points crashes the kernel, but not 249] <http://mathematica.stackexchange.com/questions/69891/generating-250-random-points-crashes-the-kernel-but-not-249>

Consider the following function, which generates uniformly random points on the surface of the 2-sphere:

```
randSphere[] := Block[{z = RandomReal[{-1, 1}, 3]},
If[Total[z^2] &gt; 1, randSphere[], ...
```

- asked by David Zhang (23 votes), answered by Szabolcs (22 votes)

[How to add lines in TableForm] <http://mathematica.stackexchange.com/questions/69970/how-to-add-lines-in-tableform>

```
m = {  
  {3, 5, 5, 5, 5, 5, 5, 5},  
  {3, 6, 8, 8, 8, 8, 8, 8},  
  {3, 6, 10, 11, 11, 11, 11, 11},  
  {3, 6, 10, 14, 14, 14, 14, 14},  
  {3, 6, 10, 15, 17, 17, 17, 17},  
  {3, 6, 10, 15, ...
```

- asked by Chen Stats Yu (17 votes), answered by kguler (10 votes)

[Gap in a continuous plot] <http://mathematica.stackexchange.com/questions/69976/gap-in-a-continuous-plot>

Why do I get a gap in the plot below and how can I fix it? (If you are interested in it, you can see a new related question: How to plot an implicit value function, which is also a little challenging)

...

- asked by ben (13 votes), answered by kguler (9 votes)

[Max element of a list with a custom ordering function] <http://mathematica.stackexchange.com/questions/69971/max-element-of-a-list-with-a-custom-ordering-function>

I need a function to find max element of a list according to some custom ordering function, assuming that the function implements a total order (elements being compared might not even be numbers). ...

- asked by Vladimir Reshetnikov (10 votes), answered by Mr.Wizard (8 votes)

[Choose between 'Apply' and 'Map'] <http://mathematica.stackexchange.com/questions/70201/choose-between-apply-and-map>

Even though this might be too general question(or not answerable), I want to get some advice here. I apologize in advance if it is not a relevant question.

I frequently have to process large list of ...

- asked by Sungmin (8 votes)

[Collatz optimization] <http://mathematica.stackexchange.com/questions/69902/collatz-optimization>

I'm VERY new to Mathematica programming (and by new I mean two days), and was solving Project Euler question 12, which states:

Which starting number, under one million, produces the longest ...

- asked by globby (8 votes), answered by mgamer (9 votes)

[How to connect discrete points and make them become continuous curve?] <http://mathematica.stackexchange.com/questions/70102/how-to-connect-discrete-points-and-make-them-become-continuous-curve>

Given that I have two variables θ, t , for the variable t , θ always owns several values. Namely,

$$\{t, \theta_1, \theta_2, \theta_3, \theta_4 \dots\}$$

where t in the interval $[0, 1]$ and ...

- asked by ShutaoTang (7 votes), answered by Yi Wang (12 votes)

=====
 Greatest hits from previous weeks: =====

[Image processing: Floor plan - detecting rooms' borders (area) and room names' texts] <http://mathematica.stackexchange.com/questions/19546/image-processing-floor-plan-detecting-rooms-borders-area-and-room-names-t>

Here is a simple building floor plan. I would like to derive the rooms as (rectangular) components and the names of the rooms. This is very common representation of building floor plans.

The ...

- asked by s.s.o (37 votes), answered by niki (38 votes)

[1 Plot, 2 Scale/Axis] <http://mathematica.stackexchange.com/questions/627/1-plot-2-scale-axis>

I would like to plot those two datasets on top of each other. But they have very different range on the y axis. How can I have two different axis?

I found the following on the help menu but quite ...

- asked by 500 (77 votes), answered by ArgentoSapiens (70 votes)

=====
 Can you answer these? =====

[How to control pedestrians to enter the simulation region with random functions?] <http://mathematica.stackexchange.com/questions/70173/how-to-control-pedestrians-to-enter-the-simulation-region-with-random-functions>

I am working on simulating crowds of a cross-typed region, given that pedestrians entering from 4 gates of north, east, west and south,

```
spacesize = 100; width = Floor[0.1 spacesize];  
npeople = ...
```

- asked by Andy Huang (2 votes)

[Why does Mathematica show 4095/4096 terms in TrigExpand?] <http://mathematica.stackexchange.com/questions/70092/why-does-mathematica-show-4095-4096-terms-in-trigexpand>

```
Clear[x, n];  
expr = Cos[x]^(n - 2) (1 - Cos[x]^2 + Sin[x]);  
r=TrigExpand[expr]
```

Where do those 4095/4096 comes from? It is correct, but it seems very strange way to represent the result.

...

- asked by Nasser (3 votes)

[How to get the SIFT features of an image?] <http://mathematica.stackexchange.com/questions/70165/how-to-get-the-sift-features-of-an-image>

According to the documentation, the function `KeyPoints[]` computes features only using SURF, but what about SIFT or FAST features?

- asked by M.R. (1 vote)

CHAPTER 7

YEAR 2014

7.1 Tuesday, December 30, 2014

=====
Top new questions this week:
=====

[How would I return a random Mathematicacommand?] <http://mathematica.stackexchange.com/questions/69627/how-would-i-return-a-random-mathematica-command>

I'm doing some metaprogramming. How would I make a Mathematica function that returns a random Mathematica command? Is there a list of command names that I could use RandomChoice on?

I'm looking for ...

- asked by Alexander Gruber (10 votes), answered by bill s (16 votes)

----- [Rendering thousands ofpoints] <http://mathematica.stackexchange.com/questions/69774/rendering-thousands-of-points>

I am trying to render an image with some 120,000 Points. Technically it's just 10,000 points, plus their reflection, plus 5 rotations of both of those sets, but I'm not sure that's relevant. The code ...

- asked by Martin Buttner (9 votes), answered by Sjoerd C. de Vries (11 votes)

[Truncating a list once all members of a set have appeared?] <http://mathematica.stackexchange.com/questions/69613/truncating-a-list-once-all-members-of-a-set-have-appeared>

Consider if you would the case where we have some list of elements:

```
list0 = 54, 4, 7, 9, 3, 54, 4, 20, 2, 456, 2, 3;
```

And we have some target list:

```
targetList = 2, 3, 4, 7;
```

We'd like to scan ...

- asked by GreenField (9 votes), answered by Mr.Wizard (4 votes)

[Find the minimum integer r such that $(10^r - 1)/37$ is an integer] <http://mathematica.stackexchange.com/questions/69811/find-the-minimum-integer-r-such-that-10r-1-37-is-an-integer>

I know `Element[(10r - 1)/37, Integers]` tests the condition.

So what is the command that gives me the minimum integer value r such that the condition is true?

- asked by LoveRight (7 votes), answered by Oleksandr R. (10 votes)

[Definite integral incorrectly giving a nonreal value] <http://mathematica.stackexchange.com/questions/69718/definite-integral-incorrectly-giving-a-nonreal-value>

In Mathematica 10.0, when I enter

```
N[Integrate[Sqrt[1+x^3],{x,-1,3}]]
```

, I get a nonreal value. (I.e., the imaginary part is nonzero.) Why?

This arose when I was seeing if `Sqrt[1_x^3]` has an ...

- asked by Stephen Herschkorn (7 votes), answered by Nasser (6 votes)

[LetterCharacter for Cyrillic symbols]<http://mathematica.stackexchange.com/questions/69728/lettercharacter-for-cyrillic-symbols>

Why does the code

```
StringMatchQ["bl", LetterCharacter]
```

return False?

Probably because:

```
StringMatchQ["bl", LetterCharacter] // HoldForm // FullForm
...
```

- asked by molekyla777 (7 votes), answered by Karsten 7. (7 votes)

[How discretize a region placing vertices on a specific non-uniform grid] <http://mathematica.stackexchange.com/questions/69584/how-discretize-a-region-placing-vertices-on-a-specific-non-uniform-grid>

Given a generic region, for example:

```
\[CapitalOmega] = ImplicitRegion[((2*x^2 + 3*y^2 + 2*x*y - 2 & ) *lt; ) = (0^x^2 + y^2
```

and a non-uniform grid, for example:

```
\[CapitalOmega]b = RegionBounds[\[CapitalOmega]];
{ xg, yg } = ...
```

- asked by unlikely (6 votes), answered by kguler (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (17 votes), answered by Artes (10 votes)

[What are the most common pitfalls awaiting new users?] <http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users>

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (184 votes), answered by Michael E2 (99 votes)

=====
 ===== Can you answer these?
 =====

[DSolve versus DSolveValue] <http://mathematica.stackexchange.com/questions/69793/dsolve-versus-dsolvevalue>

I've just discovered the new command DSolveValue in Mathematica 10. Is this new command now the preferred instead of DSolve? Is it the better command to teach to students? Same question for ...

- asked by David (2 votes)

[Font rendering difference between .jpg & .pdf] <http://mathematica.stackexchange.com/questions/69825/font-rendering-difference-between-jpg-pdf>

I have some planar graphics involving lines and text, produced by Line[] and Text[], accepting the default font on the latter. When I Save Graphics as .jpg, it looks fine, left below. When I save as ...

- asked by Joseph O'Rourke (2 votes)

[Regular Polyhedra coordinate points generation] <http://mathematica.stackexchange.com/questions/69839/regular-polyhedra-coordinate-points-generation>

Is it possible to get all points on a Polyhedron surface using two surface parameters, say

ϕ, θ spherical co-ordinates?

Just like in ParametricPlot3D, can we start with PolyhedronData ...

- asked by Narasimham (1 vote)

7.2 Tuesday, December 16, 2014

=====
 Top new questions this week:
 =====

[Buying a new computer (specifically for Mathematica)] <http://mathematica.stackexchange.com/questions/69404/buying-a-new-computer-specifically-for-mathematica>

My current computer is a MacBook Air, the mid-2011 version: 4 GB RAM, 1.7 GHz Intel dual core. It runs Mathematica 9 smoothly, but a bit too slowly for my taste. I use Mathematica almost exclusively ...

- asked by Kim Fierens (14 votes), answered by halirutan (15 votes)

[Difference between Association and Dispatch] <http://mathematica.stackexchange.com/questions/69291/difference-between-association-and-dispatch>

In the example below, Association has a different behavior from Dispatch:

```
{1, 2, 3} /. Association@{1 -> "test", 2 -> "test" , _Integer -> Null}
```

```
{1, 2, 3} /. Dispatch@{1 -> "test" , 2 -> ...
```

- asked by Murta (13 votes), answered by Leonid Shifrin (15 votes)

[Real Numbers in the Wolfram Language] <http://mathematica.stackexchange.com/questions/69525/real-numbers-in-the-wolfram-language>

This is more of a request for advice and input than a solution to a programming challenge, but I thought it might be useful to raise here nonetheless.

I am wondering if Mathematica and the Wolfram ...

- asked by David Carraher (11 votes)

[InverseFourierTransform of simple function takes forever] <http://mathematica.stackexchange.com/questions/69477/inversefouriertransform-of-simple-function-takes-forever>

i'm quite new to Mathematica. I'm trying to do something along the lines of:

```
InverseFourierTransform[1/(w^2 - I*w*b + c) , w, t, FourierParameters -> {1, -1}, Assumptions -> {b > 0, c > ...
```

- asked by pnjun (9 votes), answered by bbgodfrey (8 votes)

[Divide all but the maximal element in a list by 10?] <http://mathematica.stackexchange.com/questions/69547/divide-all-but-the-maximal-element-in-a-list-by-10>

I have a list of numerical data, and I want to write a program that will keep the maximum as it is, but reduce the rest by certain factor (such as 10). For example:

input = {2, 3, 1, -3, -5, 9, 2, 6, ...

- asked by Paul (8 votes), answered by WReach (10 votes)

[Select a particular rules out of a list] <http://mathematica.stackexchange.com/questions/69299/select-a-particular-rules-out-of-a-list>

```
rule = {beta -> 4, alpha -> 2, x -> 4, z -> 2, w -> 0.8}
```

```
Select[rule, beta]
```

```
Select[rule, beta &]
```

```
Select[rule, beta -> _ &]
```

How would I select the rule that applies to beta ...

- asked by Chen Stats Yu (8 votes), answered by kguler (12 votes)

[10.0.2 another Dataset type system (inference?) warning] <http://mathematica.stackexchange.com/questions/69542/10-0-2-another-dataset-type-system-inference-warning>

Bug introduced in 10.0.2

The warning below seems unrelated to these issues: Did 10.0.2 break some forms for named slots? and 10.0.2 mapping Association to Dataset warning.

First noticed w/ ...

- asked by alancalvitti (7 votes), answered by Stefan R (11 votes)

=====
Greatest hits from previous weeks: =====

[How to find all the local minima/maxima in a range] <http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range>

I want to find :

all local maxima in range all local minima in range

>From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (45 votes), answered by Daniel Lichtblau (43 votes)

[How to create animated snowfall?] <http://mathematica.stackexchange.com/questions/16881/how-to-create-animated-snowfall>

Well, the title is self-explanatory. What sorts of snowfall can we generate using Mathematica? There are two options I suggest to consider:

1) Continuous GIF animations with smallest possible number ...

- asked by faleichik (30 votes), answered by Simon Woods (35 votes)

=====
 ===== Can you answer these?
 =====

[How to execute code on FrontEnd quit?] <http://mathematica.stackexchange.com/questions/69385/how-to-execute-code-on-frontend-quit>

I would like to execute a block of code whenever the FrontEnd quits. I know about \$Epilog, but it seems that this would execute every time the kernel quits, which is not what I want. Does anyone know ...

- asked by rdjain1 (4 votes)

[Logarithmic vertex placement in large tree graphs] <http://mathematica.stackexchange.com/questions/69555/logarithmic-vertex-placement-in-large-tree-graphs>

This question about graph layout is fairly general, but can be illustrated in the case of the Collatz Conjecture. Collatz created the following function over positive integers: If the integer n is ...

- asked by David G. Stork (1 vote)

[Background color does not display in InputField unless Appearance option is also specified] <http://mathematica.stackexchange.com/questions/69446/background-color-does-not-display-in-inputfield-unless-appearance-option-is-also>

I get the same behavior for v.10.0.2 and v.9 with OS X (10.9.5) :

No background color is displayed in InputField if I just set properly the option. For example, the background just remains white if ...

- asked by SquareOne (2 votes)

7.3 Tuesday, December 16, 2014

=====

Top new questions this week:

=====

[Bug in ArcLength?] <http://mathematica.stackexchange.com/questions/69122/bug-in-arclength>

With Mathematica 10.0.2:

```
ArcLength[Line[{{0, 0}, {1, 0}, {2, 0}}]]
```

```
ArcLength[Line[{{0}, {1}, {2}}]]
```

```
(* 2 *)
```

```
(* 2 *)
```

However,

```
ArcLength[Line[{{0, 0}, {1, 0}, {2.0, 0}}]]
```

```
ArcLength[Line[{{0}, {1}, ...
```

- asked by qwerty (15 votes)

[Save as pdf broken in version 10.0.2?] <http://mathematica.stackexchange.com/questions/68893/save-as-pdf-broken-in-version-10-0-2>

It looks like the save as pdf is broken after I update to version 10.0.2. The labels in the plot become a mess.

Are there ways to fix it? The Export function works well though.

Here is a screenshot

...

- asked by xslittlegrass (12 votes)

[What does `f_[whoCalled]^:=f` really mean?] <http://mathematica.stackexchange.com/questions/68823/what-does-f-whocalled-f-really-mean>

I came across the following post by John Doty in this Google Groups discussion:

On Friday, January 11, 2013 8:23:16 PM UTC-7, amzoti wrote:

It is clear the Mathematica uses Lisp as one ...

- asked by Shredderroy (11 votes), answered by Chris Degnen (1 vote)

[10.0.2 mapping Association to Dataset warning] <http://mathematica.stackexchange.com/questions/68875/10-0-2-mapping-association-to-dataset-warning>

In 10.0.2

```
ExampleData[{"Dataset", "Titanic"}][All, &lt;| "gender" -&gt; #sex|&gt;
&amp;]
```

Outputs the expected result, but also throws:

```
MapAt::partw: Part {1,All,2} of
```

```
...
```

- asked by alancalvitti (10 votes), answered by Taliesin Beynon (12 votes)

[Sampling phase space uniformly for a given energy] <http://mathematica.stackexchange.com/questions/69029/sampling-phase-space-uniformly-for-a-given-energy>

For example, for the 1D harmonic oscillator, the energy is given by:

$$E = \frac{1}{2m}p^2 + \frac{m\omega^2}{2}x^2$$

where x is position and p is the momentum.

I would like to sample phase ...

- asked by user29165 (8 votes), answered by bbgodfrey (5 votes)

[representation of custom deformation on a meshgrid] <http://mathematica.stackexchange.com/questions/69132/representation-of-custom-deformation-on-a-meshgrid>

I am trying to represent 2D deformations on a rectangular grid. In Mathematica 10, there is a method to solve the elastic differential equations and then represent the deformation as presented here:

...

- asked by Botond (7 votes), answered by Michael E2 (9 votes)

[Processing a circular rainbow in an image] <http://mathematica.stackexchange.com/questions/69092/processing-a-circular-rainbow-in-an-image>

I was flying cross country last week. We were at about 35000 feet with a complete cloud deck below us. I looked down and saw a complete circular rainbow above the clouds. It was in view about 10 ...

- asked by Rob (7 votes), answered by bill s (9 votes)

=====
 Greatest hits from previous weeks: =====

[How to find the domain and range of a function with Mathematica?] <http://mathematica.stackexchange.com/questions/8016/how-to-find-the-domain-and-range-of-a-function-with-mathematica>

I'm studying calculus and in some exercises I am asked to find the domain and range of a function. Does Mathematica have already a built-in function for this?

I can imagine some ways of doing so, ...

- asked by Vyska (17 votes), answered by Szabolcs (18 votes)

[How to ask Mathematica to imitate Andy Warhol's pop-art painting?] <http://mathematica.stackexchange.com/questions/59132/how-to-ask-mathematica-to-imitate-andy-warhols-pop-art-painting>

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait so that it looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

- asked by Putterboy (37 votes), answered by belisarius (41 votes)

=====
 Can you answer these?
 =====

[Linux: Mathematica crashes when clicking documentation links very fast] <http://mathematica.stackexchange.com/questions/68927/linux-mathematica-crashes-when-clicking-documentation-links-very-fast>

Can someone confirm the following behavior: Open a new Mathematica and go to the documentation. Navigate to any reference page (I used RegionPlot) and click repeatedly and very fast the RegionPlot ...

- asked by halirutan (5 votes)

[Import/Export a FIT file, Fitness file created by Garmin GPS's and others] <http://mathematica.stackexchange.com/questions/69085/import-export-a-fit-file-fitness-file-created-by-garmin-gpss-and-others>

A FIT file is a binary replacement for GPX and TCX text files containing GPS and fitness data (heart monitors, etc.). Mathematica reads GPX and TCX files and represents them as XML. I would like to ...

- asked by Douglas Kubler (1 vote)

[Creating REST Web Service with webMathematica] <http://mathematica.stackexchange.com/questions/69021/creating-rest-web-service-with-webmathematica>

Someone knows how can I implement a REST Web Service with webMathematica?

The SOAP service is well documented here and in the webMathematica User Guide.

I saw that is possible to create a REST ...

- asked by Murta (4 votes)

7.4 Tuesday, December 9, 2014

=====
 Top new questions this week:
 =====

[Where is the old option TraceInternal->True?] <http://mathematica.stackexchange.com/questions/67305/where-is-the-old-option-traceinternal-true>

Already at least in version 2 (I think), the function Solve calls the function Roots. At that time, I had a rather dirty trick, that still works, to verify this:

```
Unprotect[Roots];
Roots[x__] /; ...
```

- asked by Fred Simons (14 votes), answered by WReach (13 votes)

[What are the purposes of functions in FrontEnd' context which are duplicates of those in System'?] <http://mathematica.stackexchange.com/questions/67179/what-are-the-purposes-of-functions-in-frontend-context-which-are-duplicates-of>

I noticed that for notebook-related heads, there are usually a pair of same functions, one in System context, another in FrontEnd context. I filtered out a list of functions of this kind:

candidates ...

- asked by Naitree (9 votes), answered by Naitree (6 votes)

[Modify existing color scheme] <http://mathematica.stackexchange.com/questions/67212/modify-existing-color-scheme>

I am using the "TemperatureMap" color scheme for image processing. How can I set the lowest color value to Black?

Generally speaking, is it possible to exchange a specific color (at a certain value ...

- asked by Milenko Rubin-Zuzic (8 votes), answered by rm -rf (13 votes)

[Get rational and irrational parts] <http://mathematica.stackexchange.com/questions/67293/get-rational-and-irrational-parts>

Consider an expression of the form $a + b\sqrt{2}$, where $a, b \in \mathbb{Q}$. How can I extract b (or equivalently a) from this expression?

- asked by Tyson Williams (8 votes), answered by Michael E2 (6 votes)

[Implementation of Partial Least Squares (PLS)?] <http://mathematica.stackexchange.com/questions/67282/implementation-of-partial-least-squares-pls>

I'm looking for a PLS implementation for Wolfram Mathematica. I just cant seem to find any implementation for it - do you know one? In general, I'm a bit confused that there exist only so few ...

- asked by tim (6 votes)

[A short notation to fix the assumption that all involved parameters are, say, positive] <http://mathematica.stackexchange.com/questions/67601/a-short-notation-to-fix-the-assumption-that-all-involved-parameters-are-say-po>

Often I make simplifications or other operations with assumptions. Sometimes the assumptions simply state that all parameters involved are positive.

I wonder, if there is a short notation for such a ...

- asked by Alexei Boulbitch (5 votes), answered by kguler (2 votes)

[Why are TimeSeries objects reported with head "TemporalData"?] <http://mathematica.stackexchange.com/questions/67597/why-are-timeseries-objects-reported-with-head-temporaldata>

I am quite surprised to find that

```
ts = TimeSeries[ {1,2,3,4}, {{1,2,3,4}}];
Head @ ts
```

returns

```
(* TemporalData *)
```

I do find this quite inconsistent as the object is also reported with ...

- asked by gwr (5 votes)

==== Greatest hits from previous weeks: =====

[Even Fibonacci numbers] <http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers>

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by ShutaoTang (24 votes), answered by rcollyer (31 votes)

[Implementing efficient multiple undo] <http://mathematica.stackexchange.com/questions/1953/implementing-efficient-multiple-undo>

At the time this question was asked, version 10 was not out yet. The Front End of Mathematica 10 does have multiple undo, see the answer by John Fultz.

The Mathematica Front End's built-in Undo ...

- asked by Rojo (112 votes), answered by John Fultz (38 votes)

==== Can you answer these? =====

[The CorrelationMatrix is equal to corrcoef of Matlab?] <http://mathematica.stackexchange.com/questions/67348/the-correlationmatrix-is-equal-to-corrcoef-of-matlab>

I know that my question imply to know matlab, and this is not the right place, but i'm a physics student and i don't quite yet understand this concepts. When i make a LinearModelFit i can get a ...

- asked by Kafkarudo (2 votes)

[How to assemble and disassemble a function into steps] <http://mathematica.stackexchange.com/questions/67325/how-to-assemble-and-disassemble-a-function-into-steps>

I've watched many programmers (both novice and expert) write functions in Mathematica and have observed a common behavioral pattern. This pattern has many elements that would be automated and thus ...

- asked by user5601 (3 votes)

[Mathematica 10 and Mac] <http://mathematica.stackexchange.com/questions/67552/mathematica-10-and-mac>

This might be a the wrong place to post the question, but I am sure that there would be few places where I would find people who would know more about how mathematica works.

I am looking to buy a new ...

- asked by ALEXANDER (2 votes)

7.5 Tuesday, December 2, 2014

=====
 Top new questions this week:
 =====

[Wind Map Artwork] <http://mathematica.stackexchange.com/questions/66936/wind-map-artwork>

I would like some help generating an image like the one seen below.

The image above is an art piece called Wind Map by artists Fernanda Viegas and Martin Wattenberg.

I would like to take wind ...

- asked by James Rohal (15 votes), answered by Silvia (10 votes)

[Visual representation of a Ranking over time (image provided)] <http://mathematica.stackexchange.com/questions/66581/visual-representation-of-a-ranking-over-time-image-provided>

[Disclaimer: I initially posted this question on stackOverflow 2 months ago and think it might be better suited for this forum (link to original question)]

The graph below shows a ranking of ...

- asked by Seb (15 votes), answered by belisarius (17 votes)

[Drawing a square root spiral] <http://mathematica.stackexchange.com/questions/66969/drawing-a-square-root-spiral>

Here is a start, i'm looking for a nice way.

```
Graphics[{EdgeForm[Black], White,
Polygon@{{0, 0}, {-1, 0},
Sqrt[2] {Cos[#], Sin[#]} & Pi - (ArcCot[1])}},
Polygon@{{0, 0}, Sqrt[2] ...
```

- asked by mathe (12 votes), answered by Bob Hanlon (7 votes)

[Mathematica, animations, and external ray tracing programs] <http://mathematica.stackexchange.com/questions/66638/mathematica-animations-and-external-ray-tracing-programs>

As much as I enjoy and admire Mathematica's animation capabilities, I would like to take my animations to the next level by exporting the geometry of every frame to an external ray tracing program ...

- asked by Kim Fierens (11 votes), answered by Alexey Popkov (4 votes)

[Combine Stereographic "Entity" Plot of Arctic Sea with Contour Plot] <http://mathematica.stackexchange.com/questions/66562/combine-stereographic-entity-plot-of-arctic-sea-with-contour-plot>

In the announcement of Mathematica 10 there were some very cool features for every geo-related researcher. Like this one

what i'm trying to do is to overlay an ContourPlot onto this beautiful arctic ...

- asked by Julian Carpenter (10 votes), answered by FJRA (3 votes)

[Generating Random Real numbers with certain numbers not included] <http://mathematica.stackexchange.com/questions/66756/generating-random-real-numbers-with-certain-numbers-not-included>

I'm writing a program that i need 1000 real number between -3 and 6. the code that I used for generating and saving them was

```
l = RandomReal[-3, 6, 1000]
```

But I want to be sure none of these ...

- asked by user2838619 (9 votes), answered by belisarius (9 votes)

[Detect implicit grid in image with monospaced characters] <http://mathematica.stackexchange.com/questions/66886/detect-implicit-grid-in-image-with-monospaced-characters>

I'm trying to detect the monospaced-grid in a possibly slightly deformed image of a receipt. Example input (full size here)

My idea is to obtain the centroids or bounding boxes of all components ...

- asked by Thijs (8 votes), answered by belisarius (9 votes)

=====
 ===== Greatest hits from previous weeks: =====

[Assign the results from a Solve to variable(s)] <http://mathematica.stackexchange.com/questions/6669/assign-the-results-from-a-solve-to-variables>

I understand Mathematica can't assign the results of a Solve to the unknowns because there may be more than 1 solution. How can I assign the 4 values of following result to variables?

- asked by stevenvh (16 votes), answered by Artes (10 votes)

[Generating visually pleasing circle packs] <http://mathematica.stackexchange.com/questions/40334/generating-visually-pleasing-circle-packs>

EDIT: (my conclusion and thank you note) I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you had fun and enjoyed it the same as I did.

I would like to ...

- asked by VividD (67 votes), answered by level1807 (42 votes)

=====
 ===== Can you answer these?
 =====

[Lists for built-in functions that can work without brackets] <http://mathematica.stackexchange.com/questions/67039/lists-for-built-in-functions-that-can-work-without-brackets>

I just noticed that Exit and Quit can work without brackets i.e. a single

Exit

or

Quit

will quit the kernel. Quite surprising!

This isn't mentioned in the document of them. Is there a list for ...

- asked by xzczd (3 votes)

[ImportString JSON possible bug] <http://mathematica.stackexchange.com/questions/67076/importstring-json-possible-bug>

My problem is when I catch up some json output of whatever method and process it with ImportString[%, "JSON"], The first time when it executes, it works and then without doing anything, it stops ...

- asked by d555 (4 votes)

[Fractals or other patterns in the quadruple linked pendulum] <http://mathematica.stackexchange.com/questions/67012/fractals-or-other-patterns-in-the-quadruple-linked-pendulum>

This will seem like a physics question, but I'm looking for something to do in Mathematica specifically. I've successfully modeled a quadruple linked pendulum by setting up the ODEs and solving them ...

- asked by Lonely Mathematician (3 votes)

7.6 Tuesday, November 25, 2014

=====

Top new questions this week:

=====

[Is it possible to draw really thin lines in Mathematica?]\url{http://mathematica.stackexchange.com/questions/66177/is-it-possible-to-draw-really-thin-lines-in-mathematica}

I want to have in Mathematica the same result I have in Python:

I have this nice effect simply by using very thin lines. But it seems in Mathematica thickness property has some limit and i just got ...

- asked by funnypony (18 votes), answered by Alexey Popkov (18 votes)

[How to write Morse code into Plot Dashing?]\url{http://mathematica.stackexchange.com/questions/66267/how-to-write-morse-code-into-plot-dashing}

How can we define a dashing pattern in a plot such that it reads arbitrary text in Morse code?

For instance

```
Graphics[{DotDashed, Line[{0, 0}, {5, 0}]}
```

this could be interpreted as ".-" ...

- asked by rhermans (14 votes), answered by rhermans (20 votes)

[How do I draw a pair of buttocks?]\url{http://mathematica.stackexchange.com/questions/66538/how-do-i-draw-a-pair-of-buttocks}

I'm trying to develop a function which 3D plot would have a buttocks like shape.

Several days of searching the web and a dozen my of own attempts to solve the issue have brought nothing but two ...

- asked by Simpleton Jack (11 votes), answered by gpap (20 votes)

[Automatically execute command after save]\url{http://mathematica.stackexchange.com/questions/66239/automatically-execute-command-after-save}

I want to run some code automatically after saving my notebook. Is there a \$ variable or setting for this?

- asked by Giovanni (10 votes), answered by funnypony (13 votes)

[Minesweeper beta : How to Dynamic a lot of graphics with high-speed]\url{http://mathematica.stackexchange.com/questions/66133/minesweeper-beta-how-to-dynamic-a-lot-of-graphics-with-high-speed}

Recently I want to write a game,Minesweeper.Here is my completed code.

```
Clear["Global'*"]
path = "http://i.stack.imgur.com/" &lt;&gt; # &amp;;
filenames1 = {"P22Go.jpg", "Zh27M.jpg", "vKZZr.jpg", ...
```

- asked by Chenminqi (8 votes)

[Is plot polluting my
context?]\url{http://mathematica.stackexchange.com/questions/66255/is-plot-
polluting-my-context}

Whenever I plot something 3 temporary variables get added to my current
context.

Example (fresh Kernel):

```
Plot[x, {x, -1, 1}];  
Names["Global'*"]
```

Output:

```
{"x", "$3", "$4", "$5"}
```

When I do the ...

- asked by Max1 (8 votes)

[How to subtract one list from another, treating each elements as
distinct?]\url{http://mathematica.stackexchange.com/questions/66079/how-to-
subtract-one-list-from-another-treating-each-elements-as-distinct}

Suppose that I have

```
a = {"A", "A", "A", "B", "B", "C"}  
b = {"A", "B"}
```

How can I subtract b from a such that the result is {"A", "A", "B",

"C"}?

One solution I can think of is to use

...

- asked by Taiki (8 votes), answered by Kuba (8 votes)

=====
 Greatest hits from previous weeks:
 =====

[Get a "step by step" evaluation in Mathematica]
`\url{http://mathematica.stackexchange.com/questions/148/get-a-step-by-step-evaluation-in-mathematica}`

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (60 votes), answered by J.M. (51 votes)

 [How to create a new "person curve"?]
`\url{http://mathematica.stackexchange.com/questions/17704/how-to-create-a-new-person-curve}`

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter `WolframAlpha["person curve"]` into a Mathematica notebook, or `person curve` into ...

- asked by Simon (48 votes), answered by Vitaliy Kaurov (21 votes)

=====

Can you answer these?

=====

[Mod[1.2, 0.2] is not equal to zero]\url{http://mathematica.stackexchange.com/questions/66386/mod1-2-0-2-is-not-equal-to-zero}

I'm new to mathematica but this doesn't seem to make any sense

```
In[1]:=Mod[1.2, 0.2]
Out[1]=0.2
```

Why is it not zero?

Edit:

This is what I wanted to do:

```
xgrid = Table[{i,If[Mod[i, 0.2] == 0 , ...
```

- asked by Patrick Chin (2 votes)

[Parsing RLink RObject for summary.aovlist]\url{http://mathematica.stackexchange.com/questions/66506/parsing-rlink-robect-for-summary-aovlist}

There's some slightly similar requests out there (e.g. Getting R textual output into Mathematica) but I'm wondering if anyone has put together a more general purpose solution to parsing RObject[] ...

- asked by flip (1 vote)

[Implement a piecewise function elegantly and efficiently]\url{http://mathematica.stackexchange.com/questions/66209/implement-a-piecewise-function-elegantly-and-efficiently}

ment-a-piecewise-function-elegantly-and-efficiently}

Given that

\$\$

$g(x)=$

`\begin{cases}`

`max(x_{min},x-m) & \text{amp; } 0.5x \leq \max(x_{min},x-m) \ \backslash`

`0.5x & \text{amp; } \max(x_{min},x-m) < 0.5x < \min(1,x+m) \ \backslash`

`min(1,x+m) & \text{amp; } \min(1,x+m) \leq 0.5x`

`\end{cases}`\$\$

...

- asked by ShutaoTang (4 votes)

7.7 Tuesday, November 18, 2014

=====

Top new questions this week:

=====

[How to extract a list of available

Method-s]\url{http://mathematica.stackexchange.com/questions/65680/how-to-extract-a-list-of-available-method-s}

The option Methodapplies for several functions, such as NDSolve, FindRoot, NIntegrate and some others. It is difficult, however, to find a list of Methods for a given function. By digging through ...

- asked by Alexei Boulbitch (16 votes), answered by Nasser (18 votes)

[How to programmatically extract mathematical formulas from Word with Mathematica

9?]\url{http://mathematica.stackexchange.com/questions/65666/how-to-programmatically-extract-mathematical-formulas-from-word-with-mathematica}

I have a bunch of(1000+) Microsoft Word document in .Docx format. How can I programmatically extract the mathematical formulas from MS Word using Mathematica 9?

This is what example looks like (or ...

- asked by Xiang Li (15 votes), answered by WolframFan (15 votes)

[Why is TextString[-0.5] a positive number?]\url{http://mathematica.stackexchange.com/questions/65600/why-is-textstring-0-5-a-positive-number}

I want to format numbers in decimal notation and chose TextString for this task. But today, when looking at the final result of my 3-weeks measurement, the sign seemed odd. I traced it to the ...

- asked by Martin J.H. (14 votes), answered by Szabolcs (10 votes)

[Quickly test if all element in list is the same]\url{http://mathematica.stackexchange.com/questions/65782/quickly-test-if-all-element-in-list-is-the-same}

I'm running a Monte Carlo simulation. At the end, I want to count how many simulations return a list of same element.

My problem:

SimulationResult = (* n x m matrix of real numbers *)

c = ...

- asked by Zoff Dino (12 votes), answered by Michael E2 (9 votes)

[Efficient way to compare animated images to tell if they are the

same]\url{http://mathematica.stackexchange.com/questions/65794/efficient-way-to-compare-animated-images-to-tell-if-they-are-the-same}

I have a Student license for Mathematica, and felt like I wasn't making full use of the wonderful toolkit that it is; so I looked into things like its image processing capabilities. Now, I made and ...

- asked by Austin Burk (11 votes), answered by Pickett (7 votes)

[A one line proof that one is zero using Mathematica 10]\url{http://mathematica.stackexchange.com/questions/65624/a-one-line-proof-of-that-one-is-zero-using-mathematica-10}

```
a = (Sqrt[2] + 1) (Sqrt[2] - 1) - 1;
{a/a, Simplify[a]/a, b/b == Simplify[b]/b}
```

```
{1, 0, True}
```

This one line "proof" that one equals zero is disturbing (and could possibly lead to wrong results ...

- asked by Gregoire Nicollier (11 votes), answered by Szabolcs (22 votes)

[Curve fitting by running through hundreds of models and return the one with best fit]\url{http://mathematica.stackexchange.com/questions/65757/curve-fitting-by-running-through-hundreds-of-models-and-return-the-one-with-best}

In the past, I used to solve a lot of my regression analysis (curve fitting) problems with a program called DataFit which runs on Windows.

It has hundreds of regression models which it runs through in ...

- asked by MathLind (9 votes), answered by kguler (17 votes)

=====
 Greatest hits from previous weeks:
 =====

[How to create a new "person
 curve"?]\url{http://mathematica.stackexchange.com/questions/17704/how-to-cr
 eate-a-new-person-curve}

Wolfram|Alpha has a whole collection of parametric curves that create
 images of famous people. To see them, enter WolframAlpha["person curve"]
 into a Mathematica notebook, or person curve into ...

- asked by Simon (47 votes), answered by Vitaliy Kaurov (20 votes)

 [Numerically solving Helmholtz equation in 2D for arbitrary
 shapes]\url{http://mathematica.stackexchange.com/questions/56305/numericall
 y-solving-helmholtz-equation-in-2d-for-arbitrary-shapes}

I would like to solve the Helmholtz equation with dirichlet boundary
 conditions in 2 dimensions for an arbitrary shape. (for a qualitative
 comparison of the eigenstates to periodic orbits in the ...

- asked by Julian S. (35 votes), answered by Mark McClure (30 votes)

=====
 Can you answer these?
 =====

[Find d'Alembertian in the output and convert into Einstein summation
 convention
 form]\url{http://mathematica.stackexchange.com/questions/65469/find-dalembere}

rtian-in-the-output-and-convert-into-einstein-summation-convention}

I am trying to do field variations in Mathematica and would like some nice formatting. My output is in the form

$$\frac{1}{c^2} V^{(1,0,0,0)}[t,x,y,z] + \dots$$

- asked by SlipStream (2 votes)

[remote kernel through

SSH]\url{http://mathematica.stackexchange.com/questions/65953/remote-kernel-through-ssh}

Is it possible to setup connection to remote kernels through ssh?

I'm able to SSH into the remote server(linux) and start a kernel in the terminal, but it can't connect back to my local front end. I ...

- asked by xslittlegrass (3 votes)

[Understanding polyharmonic

splines]\url{http://mathematica.stackexchange.com/questions/65763/understanding-polyharmonic-splines}

Raul Narain and J.M. gives implementation of the thin plate polyharmonic splines in this post. Raul Narian's method is clear. J.M.'s is convenient to reuse. But J.M. used too many ...

- asked by xibinke (1 vote)

7.8 Tuesday, November 11, 2014

=====

Top new questions this week:

=====

[Exclude data from a list]\url{http://mathematica.stackexchange.com/questions/65246/exclude-data-from-a-list}

Let's create some random sample data

```
data = Table[{RandomReal[{-10, 10}], RandomReal[{-10, 10}]}, {i, 1, 300}];
```

Then we plot them using ListPlot

```
L0 = ListPlot[data, Frame -&gt; True, Axes -&gt; ...
```

- asked by Vaggelis_Z (13 votes), answered by kguler (15 votes)

[How do I understand ListCorrelate(contains $\{k_L, k_R\}$) when it works for 2-dimensional data?]\url{http://mathematica.stackexchange.com/questions/64925/how-do-i-understand-listcorrelatecontains-k-l-k-r-when-it-works-for-2-di}

Two months ago, I asked a question here

And @nikie give me a solution:

The intuitive way to understand ListCorrelate is that the kernel is "moved" to every position in the array, and the sum of ...

- asked by ShutaoTang (12 votes), answered by Simon Woods (11 votes)

[Using 0 to create new columns in a list with Part]\url{http://mathematica.stackexchange.com/questions/65200/using-0-to-create-new-columns-in-a-list-with-part}

I just discovered a nice way to create intermediary columns in a list, and I would like to know if I can have some problem with it. It Works like this:

Imagine I have this list, 5x3:

SeedRandom[0]

...

- asked by Murta (10 votes), answered by Mr.Wizard (12 votes)

[Glitch in Filling?]\url{http://mathematica.stackexchange.com/questions/64988/glitch-in-filling}

I ran into a problem while plotting and I was able to narrow it to this. Before I start "spelunking" I'd like to know if I am overlooking something or if this is a problem others have worked through.

...

- asked by Mr.Wizard (9 votes), answered by ybeltukov (5 votes)

[Multiple-colored regions on a Sphere in Mathematica]\url{http://mathematica.stackexchange.com/questions/65174/multiple-colored-regions-on-a-sphere-in-mathematica}

The problem: I would like to draw a sphere where the bottom half is one color, and the top half is split into 3 equal regions, each with its own

color.

I have come up with the following code, by ...

- asked by Nick Lassonde (8 votes), answered by Michael E2 (8 votes)

[Is there a way to control V10's undo length?]\url{http://mathematica.stackexchange.com/questions/65055/is-there-a-way-to-control-v10s-undo-length}

This may be a duplicate (if so I will remove this), but I was having trouble finding the relevant bit of documentation to fix it. I noticed that my FrontEnd memory use was growing out of control when ...

- asked by DumpsterDoofus (8 votes), answered by rm -rf (6 votes)

[What is the best way to draw a shaded table?]\url{http://mathematica.stackexchange.com/questions/65356/what-is-the-best-way-to-draw-a-shaded-table}

I'm trying to format a raster-style table with row and column headings and in which each cell is shaded according to the value in the cell, and the value of the cell is displayed in as text in a ...

- asked by raxacoricofallapatorius (6 votes), answered by Arnoud Buzing (7 votes)

=====
Greatest hits from previous weeks:

=====
[Get a "step by step" evaluation in Mathematica]
\url{http://mathematica.stackexchange.com/questions/148/get-a-s

tep-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (58 votes), answered by J.M. (50 votes)

[Why round to even integers?]

\url{http://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers}

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

Round[{0.5, 1.5, 2.5, 3.5, 4.5}]

gives

{0, 2, 2, 4, 4}

What's the ...

- asked by wxffles (26 votes), answered by Per Alexandersson (22 votes)

=====

Can you answer these?

=====

[Sizing elements correctly in a DistributionChart with custom ChartElementFunction]\url{http://mathematica.stackexchange.com/questions/65395/sizing-elements-correctly-in-a-distributionchart-with-custom-chartelementfunctio}

This is a follow-up question to Histogram scale error when using DistributionChart; Weird output of DistributionChart is also related. I'd like to make a DistributionChart where the elements are ...

- asked by Daniel Weissman (1 vote)

[Capturing microphone data]\url{http://mathematica.stackexchange.com/questions/65276/capturing-microphone-data}

How to capture current microphone data, just like using the function CurrentImage[] for capturing image?

For example, this captures an image:

```
Dynamic [x = CurrentImage []; EdgeDetect [x, 3]]
```

But I ...

- asked by Dragan Mrakovic (3 votes)

[How to download and combine S&P 500 stock prices]\url{http://mathematica.stackexchange.com/questions/65386/how-to-download-and-combine-sp-500-stock-prices}

I want to download historical S&P 500 stock prices and combined them into one big file, having only one column of date referencing all

stocks. Here is what I have do so far.

stdate = ...

- asked by rka (5 votes)

7.9 Tuesday, November 4, 2014

=====

Top new questions this week:

=====

[DumpsterDoofus's captivating generative art]\url{http://mathematica.stackexchange.com/questions/64492/dumpsterdoofuss-captivating-generative-art}

How can I render these beautiful images that DumpsterDoofus posted?

- asked by Mr.Wizard (23 votes), answered by DumpsterDoofus (24 votes)

[Is there an easy way to use Matteo Niccoli's perceptual color maps for 2D plots in Mathematica?]\url{http://mathematica.stackexchange.com/questions/64513/is-there-an-easy-way-to-use-matteo-niccolis-perceptual-color-maps-for-2d-plots}

I have been using the ubiquitous Jet color palette for 2D plots for some time now, and don't really care for it. Then I came across the series of blog posts, The rainbow is dead...long live the ...

- asked by Jason B (22 votes), answered by Jason B (20 votes)

[How to wrap a plot around a circle?]\url{http://mathematica.stackexchange.com/questions/64534/how-to-wrap-a-plot-around-a-circle}

```
ap-a-plot-around-a-circle}
```

Consider the code

```
a = Table[BesselJ[i, x], {i, 0, 3}]
Plot[a, {x, 0, 20}, Axes -&gt; False]
```

producing

I'd like to transform the plot into a circle. In other words, I'd like to wrap the plot ...

- asked by Sigur (14 votes), answered by Junho Lee (15 votes)

[Which Mathematica function has the longest name (by character length?)]\url{http://mathematica.stackexchange.com/questions/64718/which-mathematica-function-has-the-longest-name-by-character-length}

I came across DamerauLevenshteinDistance[u,v] in the documentation center so that got me thinking:

Which documented Mathematica function has the longest name?

Also, is there is a limit to the length ...

- asked by QuantumDot (11 votes), answered by Artes (18 votes)

[Phase portrait on a cylinder]\url{http://mathematica.stackexchange.com/questions/64407/phase-portfolio-on-a-cylinder}

It is very nice and very easy to make a sketch of a phase portrait with

StreamPlot. For example, for the classical pendulum, defined by

```


$$\begin{aligned} \dot{x} &= y, \\ \dot{y} &= -\sin x, \end{aligned}$$


```

The code

```
StreamPlot[{y, ...
```

- asked by Artem (10 votes), answered by Kuba (12 votes)

[Why does the documentation call functions "pure"?] [\url{http://mathematica.stackexchange.com/questions/64577/why-does-the-documentation-call-functions-pure}](http://mathematica.stackexchange.com/questions/64577/why-does-the-documentation-call-functions-pure)

Clearly, functions in mathematica are not pure functions according to the definition on Wikipedia (no side effects - basically implementable with table lookups):

```

x = 4;
y = 1;
a = Function[y = 0; x + ...

```

- asked by masterxilo (9 votes), answered by WReach (7 votes)

[Rasterize: Resolution option not working properly] [\url{http://mathematica.stackexchange.com/questions/64758/rasterize-resolution-option-not-working-properly}](http://mathematica.stackexchange.com/questions/64758/rasterize-resolution-option-not-working-properly)

Something about Rasterize which doesn't seem to work as intended.

Recipe:

Make some simple vector graphics:

```
Test = Graphics[Circle[{0, 0} 1]]
```

Try to rasterize it having defined ImageSize and ...

- asked by Alexey Bobrick (8 votes), answered by Alexey Popkov (5 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[How can I draw the Olympic rings with
Mathematica?]\url{http://mathematica.stackexchange.com/questions/8885/how-c
an-i-draw-the-olympic-rings-with-mathematica}
```

How can I draw the 5 interlocking Olympic rings with Mathematica?

(SVG version)

Edit

Hard choice, but some pretty cool answers here. I didn't have 3D answers in mind when I posted the question ...

- asked by Mike Honeychurch (33 votes), answered by cormullion (15 votes)

```
-----
```

```
[Why round to even
integers?]\url{http://mathematica.stackexchange.com/questions/2116/why-roun
d-to-even-integers}
```

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

`Round[{0.5, 1.5, 2.5, 3.5, 4.5}]`

gives

`{0, 2, 2, 4, 4}`

What's the ...

- asked by wxffles (26 votes), answered by Per Alexandersson (22 votes)

=====

Can you answer these?

=====

[Dependent probabilities distributions?]\url{http://mathematica.stackexchange.com/questions/64719/dependent-probabilities-distributions}

What's the best way to model situations with dependencies--I pick a world state, then pick a distribution to draw samples from based on that state. Here's a concrete version:

If I choose a 6-sided ...

- asked by Victor Shnayder (1 vote)

[How to get data from DB into dataset with keys]\url{http://mathematica.stackexchange.com/questions/64391/how-to-get-data-from-db-into-dataset-with-keys}

I'm a Mathematica newbie and I have the following problem: I connect to a Oracle DB and read out a set of variables, further on I want to histogram some of the variables. A Dataset seems to be the ...

- asked by Lea (4 votes)

[Max iterations in K-means clustering algorithm]\url{http://mathematica.stackexchange.com/questions/64343/max-iterations-in-k-means-clustering-algorithm}

I want to use k-means for clustering. I have used the ClusteringComponents function but I said how can I control the max-iteration for k-means ?

- asked by Developer2000 (2 votes)

7.10 Tuesday, October 28, 2014

=====

Top new questions this week:

=====

[Why do big-0 terms disappear in definite integrals since Mathematica 9?]\url{http://mathematica.stackexchange.com/questions/64318/why-do-big-o-terms-disappear-in-definite-integrals-since-mathematica-9}

In Mathematica 8, when I computed the following input:

Integrate[Series[Cos[x], {x, 0, 2}], {x, 0, a}]

Mathematica returned an expression that had a $O[a^4]$ in it. (In other words, the result had ...

- asked by Martin J.H. (4 votes)

[How to track Part of Symbol or How to symbolize Parts of Symbol without copying

`data`]\url{http://mathematica.stackexchange.com/questions/64312/how-to-track-part-of-symbol-or-how-to-symbolize-parts-of-symbol-without-copying}

Let's create simple function:

```
SetAttributes[h, HoldFirst];
```

```
h[data_] := Dynamic[Grid[data], TrackedSymbols :> {data}]
```

```
test = RandomReal[1, {2, 2}];
```

```
h[test]
```

Now you can evaluate somewhere else:

...

- asked by Kuba (1 vote)

[Unimportant change in

`Dynamic`]\url{http://mathematica.stackexchange.com/questions/64310/unimportant-change-in-dynamic}

I just observed an unimportant change in version 10 with respect to `Dynamic`.

The command

```
x=0; Dynamic[x=x+1]
```

returns a cell showing an infinite loop for the value of x.

Before Mathematica 10, ...

- asked by Fred Simons (2 votes)

```
[Classify Function : Sentiment  
Polarity]\url{http://mathematica.stackexchange.com/questions/64306/classify  
-function-sentiment-polarity}
```

I have been working on a project involving the new `Classify[]` function.
More specifically, the sentiment analysis function.
It works perfectly well, as in the documentation:

```
Classify["Sentiment", { ...
```

- asked by afentis (1 vote), answered by rcollyer (0 votes)

```
[User defined functions and decimal places  
displayed]\url{http://mathematica.stackexchange.com/questions/64284/user-de  
fined-functions-and-decimal-places-displayed}
```

I have a couple of complicated user-defined functions, one which calls
the other, and I wish to control the number of decimal places displayed
when I call the "mother" function. I have tried the ...

- asked by Freakalien (1 vote), answered by Mr.Wizard (1 vote)

```
[aligning the axeslabel in a 3D list  
plot]\url{http://mathematica.stackexchange.com/questions/64280/aligning-the
```

`-axeslabel-in-a-3d-list-plot}`

I have the following code

```
plot = ListPlot3D[mydata5, DataRange -&gt; {{0, 6}, {0, 6}},
PerformanceGoal -&gt; "Quality", BoxRatios -&gt; {1, 1, .7}, AxesLabel
-&gt; {Style[Subscript[t, 1], FontSize ...
```

- asked by Seyhmus Gungoren (1 vote), answered by xzczd (1 vote)

[Solving system of differential equations using loops]\url{http://mathematica.stackexchange.com/questions/64278/solving-system-of-differential-equations-using-loops}

I have F system of differential equations. Out of those F equations except for first and last I have general form for the remaining equations (say dP_i/dt).

Let $dP_0/dt, dP_F/dt$ denotes the ...

- asked by user1659936 (1 vote), answered by Michael E2 (1 vote)

=====

Greatest hits from previous weeks:

=====

[Implementing efficient multiple undo]\url{http://mathematica.stackexchange.com/questions/1953/implementing-efficient-multiple-undo}

At the time this question was asked, version 10 was not out yet. The Front End of Mathematica 10 does have multiple undo, see the answer by John Fultz.

The Mathematica Front End's built-in Undo ...

- asked by Rojo (111 votes), answered by John Fultz (34 votes)

 [Programming paradigm
 change]\url{http://mathematica.stackexchange.com/questions/45829/programm
 ing-paradigm-change}

I'm new to Mathematica, I've been learning by myself, and, being a Java
 developer for some time, it makes it hard to adapt.

I've tried to solve a Reddit challenge, and I came up with this
 solution:

...

- asked by MHero (29 votes), answered by WReach (49 votes)

=====
 Can you answer these?
 =====

[FindSequenceFunction for sum of hypergeometric
 terms]\url{http://mathematica.stackexchange.com/questions/64168/findsequenc
 efunction-for-sum-of-hypergeometric-terms}

Mathematica's built-in function FindSequenceFunction is quite good at
 recognizing hypergeometric terms, i.e. terms c_k for which
 c_{k+1}/c_k is a rational function of k .

For instance.

...

- asked by Eckhard (4 votes)

 [Finding the minimum vertex cut of a

graph]\url{http://mathematica.stackexchange.com/questions/63783/finding-the-minimum-ve

It seems that Mathematica is not correctly finding the smallest set of vertices that will disconnect a graph. Here is an example:

```
g = GraphData[{"Cycle", 5}]
FindVertexCut[g];
HighlightGraph[g, %]
...
```

- asked by Lonely Mathematician (3 votes)

[NMaximize gives wrong answer when using high precision]

\url{http://mathematica.stackexchange.com/questions/64256/nmaximize-gives-wrong-answer}

I'm using NMaximize to find the maximum of a function under constrain, but it seems to gives wrong answer when using high precisions.

```
f[t_, t1_] := (Cos[2 Pi t] - Cos[2 Pi t1] + 2 Pi (t - t1) Sin[2 Pi ...
```

- asked by xslittlegrass (1 vote)

7.11 Tuesday, October 21, 2014

=====

Top new questions this week:

=====

[Total much slower in version

10]\url{http://mathematica.stackexchange.com/questions/63209/total-much-slower-in-version-10}

Compilation nowadays may give very fast functions. Here is an example for finding the sum of a list of machine numbers, just as the built-in

function Total:

```
myTotal = Compile[{{lst, _Real, 1}},
...

```

- asked by Fred Simons (15 votes), answered by Karsten 7. (5 votes)

[Drawing the schematic diagram of algorithm]\url{http://mathematica.stackexchange.com/questions/63471/drawing-the-schematic-diagram-of-algorithm}

The B-Spline function used the alogrithm as shown below:

I would like to draw it in Mathematica (Although this is my first time to use TreePlot)

```
TreePlot[
{1 -&gt; 2, 1 -&gt; 3, 2 -&gt; 4, ...

```

- asked by ShutaoTang (14 votes), answered by kguler (9 votes)

[How can I evaluate only a single step of a recursive function?]\url{http://mathematica.stackexchange.com/questions/63256/how-can-i-evaluate-only-a-single-step-of-a-recursive-function}

Let's say have a simple recursive function for the Fibonacci sequence

```
f[0] := 1
f[1] := 1
f[n_] := f[n - 1] + f[n - 2]
```

but I want to see how it will expand in a given number of steps, but not all ...

- asked by Jakub Arnold (12 votes), answered by Daniel Lichtblau (16 votes)

[How to build a 3D graph from a 3D matrix?]\url{http://mathematica.stackexchange.com/questions/63428/how-to-build-a-3d-graph-from-a-3d-matrix}

Following this
and that question
and the corresponding answers, Mathematica can build 2D graph from 2D matrices.

Question

How to make the corresponding 3D graphs from 3D cubes?

Attempt

...

- asked by chris (11 votes), answered by kguler (5 votes)

[Listable functions thread over Associations; is this documented?]\url{http://mathematica.stackexchange.com/questions/63293/listable-functions-thread-over-associations-is-this-documented}

Thanks to a somewhat misapplied use of MapThread I learned of this

behavior:

```
&lt;|a -&gt; 1, b -&gt; 2|&gt; + &lt;|a -&gt; 5, b -&gt; 6|&gt;
```

```
&lt;|a -&gt; 6, b -&gt; 8|&gt;
```

Furthermore this ...

- asked by Mr.Wizard (10 votes), answered by m_goldberg (3 votes)

```
[Bug(?) in version 10: Tooltip and
ListPointPlot3D]\url{http://mathematica.stackexchange.com/questions/63667/b
ug-in-version-10-tooltip-and-listpointplot3d}
```

Bug introduced in 10.0.0

The coordinates of a point in a three dimensional graph can be shown in a tooltip:

```
ListPointPlot3D[Tooltip[RandomReal[{0, 1}, {50, 3}]], PlotStyle -&gt;
{PointSize[.02]}]
```

...

- asked by Fred Simons (9 votes)

```
[How to align rotated BarChart
labels?]\url{http://mathematica.stackexchange.com/questions/63263/how-to-al
ign-rotated-barchart-labels}
```


I'd like to use long text labels for a simple BarChart, but when I apply a rotation to label strings with different lengths the end of the text is no longer aligned with the bars in the chart:

...

- asked by dionys (9 votes), answered by Brett Champion (10 votes)

=====
Greatest hits from previous weeks:
=====

[How to make use of Associations?]\url{http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations}

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (53 votes), answered by Leonid Shifrin (54 votes)

[Programming paradigm change]\url{http://mathematica.stackexchange.com/questions/45829/programming-paradigm-change}

I'm new to Mathematica, I've been learning by myself, and, being a Java developer for some time, it makes it hard to adapt.

I've tried to solve a Reddit challenge, and I came up with this solution:

...

- asked by MHero (28 votes), answered by WReach (48 votes)

=====
 Can you answer these?
 =====

[Visualise sets giving some relations on those sets]\url{http://mathematica.stackexchange.com/questions/63391/visualise-sets-giving-some-relations-on-those-sets}

I'm not very experienced with wolfram, but I'm searching for a function that can basicly do the following.

Giving some sets A, B, C and some relations for example $B \subset A, C \subset B$. I would ...

- asked by Kasper (1 vote)

 [StyleSheet for custom application]\url{http://mathematica.stackexchange.com/questions/63313/style-sheet-for-custom-application}

I'm working on a package that for some reasons needs to be installed into a "non standard" path, that means neither $BaseDirectory$ or $UserBaseDirectory$

I added the package's path to the variable ...

- asked by bobknight (1 vote)

 [ListContourPlot in V10]\url{http://mathematica.stackexchange.com/questions/63653/listcontourplot-in-v10}

It seems that I obtain different results when using `ListContourPlot` under `V9` and `V10`.

Using this datafile <http://pastebin.com/2p4ew0NJ> (modified to use pastebin), this code:

```
ListContourPlot[cm, ...
```

- asked by alessandro (1 vote)

7.12 Tuesday, October 14, 2014

=====

Top new questions this week:

=====

[Assign a randomly generated list to variable]\url{http://mathematica.stackexchange.com/questions/62921/assign-a-randomly-generated-list-to-variable}

I don't know if this is a silly question, but it really baffles me. So please help me understand this behavior.

```
list=RandomInteger[100,100]
```

I interpret the (silly) code above as randomly generating ...

- asked by Naitree (19 votes), answered by rhermans (5 votes)

[Dataset seems unable to handle `ListDensityPlot` and `ListContourPlot`]\url{http://mathematica.stackexchange.com/questions/61572/dataset-seems-unable-to-handle-listdensityplot-and-listcontourplot}

If I create a Dataset:

```

dataSet = Dataset[
AssociationThread[{"a", "b", "c", "d", "e"} -&gt; #] &amp; /@
RandomReal[{-1, 1}, {1000, 5}]
];

```

It should be easy to use a plotting function on it

...

- asked by gpap (15 votes), answered by RunnyKine (14 votes)

[Make my data-structure atomic]\url{http://mathematica.stackexchange.com/questions/61587/make-my-data-structure-atomic}

Lately, and by lately I mean since version 7 or so, the number of atomic expressions in Mathematica constantly grew. In former times only the native types like integers and optimised arrays were ...

- asked by halirutan (14 votes), answered by Leonid Shifrin (10 votes)

[Applying different functions to different columns of a Dataset]\url{http://mathematica.stackexchange.com/questions/61710/applying-different-functions-to-different-columns-of-a-dataset}

Suppose I have different functions: Total, Mean and Max and the following Dataset

```

SeedRandom[0]
dataSet = Dataset[AssociationThread[{"a", "b", "c", "d"} -&gt; #] &amp; /@
RandomReal[4, {10, 4}]]

```

...

- asked by smayhem (13 votes), answered by RunnyKine (9 votes)

[Sorting Lists of lists of arbitrary length]\url{http://mathematica.stackexchange.com/questions/61560/sorting-lists-of-lists-of-arbitrary-length}

I'm trying to sort a list of lists. The sublists are defined in length, but the length of the list containing it varies.

A simplified set might be:

$\{\{1, 2, 3\}, \{7, 1, 4\}, \{3, 5, 6\}, \{10, 7, 1\}\}$

...

- asked by Rick R (10 votes), answered by RunnyKine (11 votes)

[Best way to find permutation with specific total]\url{http://mathematica.stackexchange.com/questions/62956/best-way-to-find-permutation-with-specific-total}

Can anyone suggest a good way to find permutations of 12 digits, 0 to 4, totalling 24.

I.e. two such permutations:-

$\{2, 1, 4, 1, 2, 2, 2, 2, 2, 2, 1, 3\}$ // Total

{4, 4, 4, 4, 4, 4, 0, 0, ...

- asked by Chris Degnen (9 votes), answered by thils (6 votes)

 [Segmentation of a microscopy image with uneven illumination]\url{http://mathematica.stackexchange.com/questions/62976/segmentation-of-a-microscopy-image-with-uneven-illumination}

I am trying to do a little image segmentation on some cells taken from microscopy images that have uneven illumination. I am having trouble getting the background of the image cleaned up after ...

- asked by user13999 (9 votes), answered by bobthechemist (4 votes)

=====
 Greatest hits from previous weeks:
 =====

[Alternatives to procedural loops and iterating over lists in Mathematica]\url{http://mathematica.stackexchange.com/questions/7924/alternatives-to-procedural-loops-and-iterating-over-lists-in-mathematica}

While there are some cases where a For loop might be reasonable, it's a general mantra one I subscribe to myself that "if you are using a For loop in Mathematica, you are probably doing it wrong". ...

- asked by Mr.Wizard (91 votes), answered by Mr.Wizard (59 votes)

 [How to make use of Associations?]\url{http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations}

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (53 votes), answered by Leonid Shifrin (54 votes)

=====

Can you answer these?

=====

[Error messages from TensorContract and TensorReduce]\url{http://mathematica.stackexchange.com/questions/61719/error-messages-from-tensorcontract-and-tensorreduce}

I am struggling with a few errors when using symbolic tensors. I am using mathematica 9.0.1.0, linux x86.

The following code generates what seems to me an incorrect tensor, this is the smallest ...

- asked by Artur Gower (4 votes)

[Oddify an even function and vice versa?]\url{http://mathematica.stackexchange.com/questions/62957/oddify-an-even-function-and-vice-versa}

I want to know how to construct a function in Mathematica which would produce even analog of odd function and vice versa in closed form?

The mathematical definitions are as follows:

...

- asked by Anixx (2 votes)

[Create SQL Database on a manually specified directory]\url{http://mathematica.stackexchange.com/questions/61568/create-sql-database-on-a-manually-specified-directory}

I am inserting lots of data into the preinstalled SQL Database in MM:

```
con= OpenSQLConnection["demo"] > SQLCreateTable[con,
SQLTable["anyname"], SQLcolumns] > ...
```

I am running out of disk space on my ...

- asked by Patrick Bernhard (2 votes)

7.13 Tuesday, October 7, 2014

=====
Top new questions this week:
=====

[Visualisation of a recursive function]\url{http://mathematica.stackexchange.com/questions/61323/visualisation-of-a-recursive-function}

Is there a way to nicely visualize recursive functions? (diagrams/plots)

More specifically I'm looking for a way to make contrast (visually) between e.g. the cosine function which if continuously ...

- asked by Phonon (16 votes), answered by ybeltukov (23 votes)

[Using an Image as the Fill/Texture (not background) of a Plot (not polygon)]\url{http://mathematica.stackexchange.com/questions/61341/using-an

`-image-as-the-fill-texture-not-background-of-a-plot-not-polygon}`

Is it possible to use an image, rather than a color, or ColorFunction, as the filling for a plot?

For instance, I want to make a plot using DateListPlot, and have set Filling->Axis, and would like ...

- asked by `iwantmyphd` (11 votes), answered by `Jens` (4 votes)

[Intelligently formatting PDFs]\url{http://mathematica.stackexchange.com/questions/61209/intelligently-formatting-pdfs}

I'm exporting a Grid[] to a PDF. It's working, but it's real ugly. Here is an example of what it looks like:

Possibly the first problem is the reason I posted a picture of (rather than sharing) the ...

- asked by `F dot Floss` (11 votes), answered by `Lou` (5 votes)

[How to show matrix multiplication step by step?]\url{http://mathematica.stackexchange.com/questions/61377/how-to-show-matrix-multiplication-step-by-step}

Given a matrix, A:

`A = {{1, 2, 3}, {4, 5, 6}, {7, 8, 9}};`

How can I do the matrix multiplication A times A step by step?

- asked by Mats Granvik (8 votes), answered by ybeltukov (22 votes)

 [How to deal with recursion formula in
 Mathematica?]\url{http://mathematica.stackexchange.com/questions/61050/how-
 to-deal-with-recursion-formula-in-mathematica}

In engineering problems, I am always seeing many recursion formula.

For instance, In the book "The NURBS book", I discovered many recursion
 formula

Fibonacci $f(n+2)=f(n+1)+f(n)$
 deCasteljau ...

- asked by Tangshutao (8 votes), answered by Igor Rivin (6 votes)

 [Is there a way to revert to the built-in function after overwriting it
 using
 Unprotect]\url{http://mathematica.stackexchange.com/questions/61472/is-ther-
 e-a-way-to-revert-to-the-built-in-function-after-overwriting-it-using-u
 n}

When using Unprotect, we can overwrite a functions definition:

```
Unprotect[Sqrt]
Sqrt[x_]="blahblah"
Protect[Sqrt]
```

Once this is done, can we revert to the built-in version of Sqrt?

- asked by user13675 (7 votes), answered by eldo (8 votes)

[Why PlotStyle->Dashed make everything dashed?]\url{http://mathematica.stackexchange.com/questions/61058/why-plots-tyle-dashed-make-everything-dashed}

Bug introduced in 10.0.0 -- appears to affect Linux only.

It has been really strange for me. I am not sure it's regression after v10.0.1, or something went wrong with my system. After running this ...

- asked by Yi Wang (7 votes), answered by Neven Caplar (2 votes)

=====
Greatest hits from previous weeks:

=====
[Are you interested in purchasing David Wagner's "Power programming with Mathematica"?]\url{http://mathematica.stackexchange.com/questions/16485/are-you-interested-in-purchasing-david-wagners-power-programming-with-mat}

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

- asked by Todd Allen (109 votes), answered by Todd Allen (159 votes)

[How should I reproduce this colorful swirling gif?]\url{http://mathematica.stackexchange.com/questions/47597/how-should-i-reproduce-this-colorful-swirling-gif}

Surfing on the web, I came upon this cool gif:

Does any one know how to reproduce this in Mathematica? I have some ideas myself, so I will try to answer this question as well.

- asked by Ali (10 votes), answered by Kuba (23 votes)

=====

Can you answer these?

=====

[How to update bundled SQLite library (or driver?) in V10 for OS X]\url{http://mathematica.stackexchange.com/questions/61116/how-to-update-bundled-sqlite-library-or-driver-in-v10-for-os-x}

I've been using undocumented Database functions with Mathematica V9 to access my SQLite database, which is a Firefox-generated database that contains cookies.

```
db = Database'OpenDatabase[
...

```

- asked by shrx (3 votes)

[Is it possible to implement symbolic submatrices?]\url{http://mathematica.stackexchange.com/questions/61442/is-it-possible-to-implement-symbolic-sub-matrices}

The accepted answer in the following link:

<http://stackoverflow.com/questions/5708208/symbolic-matrices-in-mathematica-with-unknown-dimensions>

provides a functionality to create symbolic matrices ...

- asked by Kagaratsch (1 vote)

[Format Mathematica complex number for fortran code
use]\url{http://mathematica.stackexchange.com/questions/61432/format-mathem
atica-complex-number-for-fortran-code-use}

I'm using Mathematica 10. I am trying to write into a file complex
number output to then be read by a Fortran code.

But when I do :

```
Print[comp, " ", FortranForm[comp]]
```

I get this :

...

- asked by berhan (1 vote)

7.14 Tuesday, September 30, 2014

=====
Top new questions this week:
=====

[Join lists with nested list] <http://mathematica.stackexchange.com/questions/60666/join-lists-with-nested-list>

Is there a way of smarter way of joining list of the form

$l1 = a,b,c; l2 = d,e,f; l3 = g,h,i;$

To obtain

a,d,g,b,c,e,f,h,i

The code I have is

```
{Sequence @@ #1, Flatten[#2]} ...
```

- asked by mete (14 votes), answered by Junho Lee (9 votes)

[Different results between V9 and V10 when using Style with Listplot]<http://mathematica.stackexchange.com/questions/60929/different-results-between-v9-and-v10-when-using-style-with-listplot>

Consider this example:

```
data = Table[{x, x^2}, {x, -2, 2, 0.1}];
ListPlot[Style[{#1, #2}, PointSize[Abs[#2]/50], Hue[#2]] & @@ data]
```

the results from V9 and V10 are as follows:

V9

V10

It ...

- asked by Algohi (13 votes), answered by Brett Champion (7 votes)

[Bug in Operator Form of StringCases]<http://mathematica.stackexchange.com/questions/60871/bug-in-operator-form-of-stringcases>

According to the documentation there's an operator form for StringCases

?StringCases

Here is the normal form

```
StringCases["abcdcacb", "a" ~~ x_ ~~ "c"]
```

```
{"abc", "adc"}
```

Now, the operator ...

- asked by RunnyKine (12 votes), answered by WReach (8 votes)

[Around the Clock]<http://mathematica.stackexchange.com/questions/60728/around-the-clock>

I want to produce with Mathematica something like this

Or this

12 hours should be arranged in a pleasing ("rotated") style around / within a rectangle. I don't ask for the hands - depending on ...

- asked by eldo (12 votes), answered by belisarius (15 votes)

[How to assign a list of numbers into letter grades]<http://mathematica.stackexchange.com/questions/60497/how-to-assign-a-list-of-numbers-into-letter-grades>

Here is my list:

collection = 76.6256, 51.9264, 50.238, 14.4203, 80.9205, 12.2036, 2.39568, 38.2747, 12.4422, 29.9621

collection /. {x_ /; x < 50 -> "F"}

and this gives me

...

- asked by Lonely Mathematician (12 votes), answered by belisarius (14 votes)

[Joining ordered set of points with splines in spiral]<http://mathematica.stackexchange.com/questions/60619/joining-ordered-set-of-points-with-splines-in-spiral>

I have a collection of points

-0.137445, -0.0103507, -0.0452845, 0.0343154, 0.30498, -0.0118266, -0.0224633, 0.0197979, -0.168469, -0.0197066, 0.0973217, 0.0478612, -0.0441388, ...

- asked by martin (11 votes), answered by Rahul Narain (11 votes)

[Fitting ellipse to 5 given points on the plane]<http://mathematica.stackexchange.com/questions/60779/fitting-ellipse-to-5-given-points-on-the-plane>

Five points are required to define a unique ellipse. An ellipse has five degrees of freedom: the x and y coordinates of each focus, and the sum of the distance from each focus to a point on the ...

- asked by user153012 (11 votes), answered by Mark McClure (21 votes)

=====
 Greatest hits from previous weeks: =====

[Efficient way to build a certain quadratic matrix]<http://mathematica.stackexchange.com/questions/51798/efficient-way-to-build-a-certain-quadratic-matrix>

For odd n I'm looking for a short and swift way to construct with (f.e.)

$n = 3$

$n = 11$

$n=1111$

- asked by eldo (15 votes), answered by RunnyKine (15 votes)

[Finding all simple paths between two vertices in a graph]<http://mathematica.stackexchange.com/questions/25779/finding-all-simple-paths-between-two-vertices-in-a-graph>

There are built-in methods to find a shortest path between two vertices in a graph, and the question on finding all shortest paths between two vertices has gathered quite a bit of attention.

A path ...

- asked by mrm (11 votes), answered by trybik (10 votes)

=====
 ===== Can you answer these?
 =====

[Weird glitch again!]<http://mathematica.stackexchange.com/questions/60623/weird-glitch-again>

I have been struggling with these glitches for two days...

A related question I asked is here [How to eliminate the white gaps in the graph](#)

Here is the code,

```
Show[Plot[Sin[x], x, -2 Pi, 2 Pi, ...
```

- asked by Tony (2 votes)

[How to solve a PDE with Robin Boundary Condition inside considered region?]<http://mathematica.stackexchange.com/questions/60890/how-to-solve-a-pde-with-robin-boundary-condition-inside-considered-region>

I'm trying to solve the heat diffusion equation in cylindrical coordinates. The main problem is that I would like to include the Robin Boundary Condition inside considered region in order to simulate ...

- asked by Jerry (1 vote)

[FITS metadata problem]<http://mathematica.stackexchange.com/questions/60639/fits-metadata-problem>

Looks to me that the FITS Export is borged. Here is the problem:

When I export out images with accustom metadata into a FITS file, Mathematica truncates and overwrites it.

Here is the metadata I ...

- asked by infocean (1 vote)

7.15 Tuesday, September 23, 2014

=====
 Top new questions this week:
 =====

[Maple vs.

Mathematica][\url{http://mathematica.stackexchange.com/questions/60124/maple-vs-mathematica}](http://mathematica.stackexchange.com/questions/60124/maple-vs-mathematica)

I am reading the document "How Maple Compares to Mathematica" found at <http://www.maplesoft.com/products/maple/compare/HowMapleComparestoMathematica.pdf>.

On page 15 there is an example where ...

- asked by Milenko Rubin-Zuzic (16 votes), answered by Mr.Wizard (22 votes)

[StringCases is Confused with Patterns in Version 10.0.1][\url{http://mathematica.stackexchange.com/questions/60156/stringcases-is-confused-with-patterns-in-version-10-0-1}](http://mathematica.stackexchange.com/questions/60156/stringcases-is-confused-with-patterns-in-version-10-0-1)

I observed the following with StringCases when trying to use

rules/patterns. Here is a screenshot of the behavior:

Not only is the pattern highlighted in red, hovering the mouse over it claims it's ...

- asked by RunnyKine (14 votes)

 [How can I restore the old 'ImageCompose' behaviour?]\url{http://mathematica.stackexchange.com/questions/60048/how-can-i-restore-the-old-imagecompose-behaviour}

Prior to version 10, if ImageCompose was used to overlay a partially transparent image region over a completely transparent image region, the result would keep the colour of the overlay. Like this:

...

- asked by Simon Woods (13 votes), answered by Karsten 7. (3 votes)

 [Better way to test that a matrix is upper-triangular?]\url{http://mathematica.stackexchange.com/questions/60081/better-way-to-test-that-a-matrix-is-upper-triangular}

Today, I got to thinking about how to test that a matrix was upper-triangular. So I had a try at it.

Algorithm

$\forall i, j \quad a_{ij} = 0 \quad \text{Or} \quad i \leq j \quad \Rightarrow \quad \text{True}$

My solution is

...

- asked by Tangshutao (13 votes), answered by Mr.Wizard (9 votes)

[How to get Company Logo or
Image]\url{http://mathematica.stackexchange.com/questions/60041/how-to-get-
company-logo-or-image}

I can see that companies have a logo in Wolfram|Alpha when I type in
their name but I can't get them in Mathematica.

For example searching for Apple, Inc. in W|A one of the outputs is the
Apple logo. ...

- asked by Edmund (12 votes), answered by eldo (15 votes)

[How to make a 3D topographic
globe?]\url{http://mathematica.stackexchange.com/questions/60427/how-to-mak
e-a-3d-topographic-globe}

I've made some attempt with this dataset of elevation.

But I have some trouble with ListSurfacePlot3D, which can not show the
globe correctly:

And I've checked that the data is out of problem, ...

- asked by RexDiego (11 votes), answered by bobthechemist (10 votes)

[Is there a better way to "grow" black
tulips?]\url{http://mathematica.stackexchange.com/questions/59905/is-there-

a-better-way-to-grow-black-tulips}

I used the following clumsy way to obtain a bundle of black tulips. Is there a better way to do so?

```
im = Import["http://i.stack.imgur.com/qclHT.jpg"]
```

```
cols = DominantColors[im, 9]
```

```
rim1 = ...
```

- asked by Putterboy (11 votes), answered by ybeltukov (17 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[Can Mathematica do symbolic linear algebra?]\url{http://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra}
```

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices,

`Simplify[Transpose[Transpose[A].Transpose[B]]]`" and Mathematica would simplify it to $B.A$?

...

- asked by nokie (24 votes), answered by helen (12 votes)

```
-----
[Why round to even integers?]\url{http://mathematica.stackexchange.com/questions/2116/why-round-to-even-integers}
```

According to the Mathematica help:

Round rounds numbers of the form $x.5$ toward the nearest even integer.

For example:

```
Round[{0.5, 1.5, 2.5, 3.5, 4.5}]
```

gives

```
{0, 2, 2, 4, 4}
```

What's the ...

- asked by wxffles (26 votes), answered by Per Alexandersson (22 votes)

```
=====
```

Can you answer these?

```
=====
```

[Solving a system of two nonlinear equations with many symbolic parameters]\url{http://mathematica.stackexchange.com/questions/59930/solving-a-system-of-two-nonlinear-equations-with-many-symbolic-parameters}

I have two nonlinear equations with two unknowns, x and y , and many symbolic parameters, a, b, c, d . They look something like:

$$\frac{1}{x}(1+x)^a(1-b)(cx+dy)=0$$

...

- asked by jim (2 votes)

```
-----
```

[Example in Help File does not evaluate as claimed]\url{http://mathematica.stackexchange.com/questions/60281/example-in-help-file-does-not-evaluate-as-claimed}

In the help file, under BellB, I read at 'Properties and Relations':
 "Sum can give results involving BellB ":

```
Sum[k^n/k!, {k, 0, Infinity}]
E BellB[n]
```

but, in my version 10.0.1.0 it does not ...

- asked by Wouter (2 votes)

[How to get the centroids of the ClusterComponents function]\url{http://mathematica.stackexchange.com/questions/60301/how-to-get-the-centroids-of-the-clustercomponents-function}

I use the ClusterComponent function to get the k-means clustering:

```
Needs["HierarchicalClustering"]
cl = ClusteringComponents[data, 4, 1,
DistanceFunction -&gt; CorrelationDistance, Method -&gt; ...
```

- asked by user13675 (2 votes)

7.16 Tuesday, September 16, 2014

=====

Top new questions this week:

=====

[How many triangles are there?]\url{http://mathematica.stackexchange.com/questions/59350/how-many-triangles-are-there}

Some time ago I found a puzzle and it stopped my work until I solved it.

One of the possible solutions:

Let us sum upright and upside down triangles whose top lies in the i -th row.

\$\$

...

- asked by ybeltukov (22 votes), answered by george2079 (20 votes)

[Composition a la Mondrian]

`\url{http://mathematica.stackexchange.com/questions/59620/composition-a-la-mondrian}`

I would like to paint something like this

or, even better, like this

I have tried

colors =

{Red, Blue, Yellow, White, Black};

cells =

ConstantImage[RandomChoice[colors], #] & /@

...

- asked by eldo (21 votes), answered by Simon Woods (11 votes)

[Homotopy

Visualization]\url{http://mathematica.stackexchange.com/questions/59463/homeotopy-visualization}

I noticed that both the lower cased 'i' and the Apple logo are topologically equivalent to the disjoint union of two closed discs.

I'd like to animate a homeomorphism from the left to the right, ...

- asked by Tobi Lehman (18 votes), answered by Michael E2 (28 votes)

[Finding all paths of certain length between vertices in path graph, non-simple ones

too]\url{http://mathematica.stackexchange.com/questions/59554/finding-all-paths-of-certain-length-between-vertices-in-path-graph-non-simple-ones}

First I will tell you what my ultimate goal is, because maybe there's another way of doing it other than what I am trying.

I need a list of all (a_1, a_2, \dots, a_N) tuples that satisfy certain ...

- asked by luke (12 votes), answered by ybeltukov (7 votes)

[How to manipulate a circle in GeoGebra

style?]\url{http://mathematica.stackexchange.com/questions/59726/how-to-manipulate-a-circle-in-geogebra-style}

I want to emulate the GeoGebra app. I want to get an effect like this in Mathematica.

I don't know how to move whole circle without changing the radius of the

circle.

My sample code:

...

- asked by mathe (11 votes), answered by Kuba (5 votes)

[Splitting strings into letter keys and integers]\url{http://mathematica.stackexchange.com/questions/59690/splittin-g-strings-into-letter-keys-and-integers}

I have strings of the following form:

```
string = "ABC123DEFG456HI89UZXX1";
```

Letter keys of variable lengths are followed by (positive) integers.

I want to get this transformation:

```
{{"ABC", 123}, ...
```

- asked by eldo (11 votes), answered by RunnyKine (10 votes)

[Mathematica isn't sure whether a sum of two positives is positive or not]\url{http://mathematica.stackexchange.com/questions/59589/mathematica-i-snt-sure-whether-a-sum-of-two-positives-is-positive-or-not}

Mathematica is not able to tell whether a summation of two positive expressions is positive or not. Which is very strange.

My three symbolic arguments, $\$x\$$, $\$y\$$, and $\$z\$$, are all real numbers bounded ...

- asked by jim (10 votes), answered by Jens (9 votes)

=====
 Greatest hits from previous weeks:
 =====

[Generating visually pleasing circle
 packs]\url{http://mathematica.stackexchange.com/questions/40334/generating-
 visually-pleasing-circle-packs}

EDIT: I want to thank you all guys for this unexpected intellectual and
 artistic journey. Hope you enjoyed as I did.

I would like to generate a circle pack that mimics this: (don't pay
 attention on ...

- asked by VividD (62 votes), answered by level1807 (39 votes)

 [Finding real roots of negative numbers (for example,
 $\sqrt[3]{-8}$)]\url{http://mathematica.stackexchange.com/questions/3886/fi
 nding-real-roots-of-negative-numbers-for-example-sqrt3-8}

Say I want to quickly calculate $\sqrt[3]{-8}$, to which the most
 obvious solution is -2 .

When I input $\sqrt[3]{-8}$ or $\text{Power}[-8, 3^{-1}]$, Mathematica gives the
 result " $2 (-1)^{\{1/3\}}$ ". Not what I ...

- asked by jtbandes (33 votes), answered by Brett Champion (13 votes)

=====
 Can you answer these?
 =====

[NIntegrate::ncvbr: How should we interpret and handle this error not mentioned in any documentation?]\url{http://mathematica.stackexchange.com/questions/59371/nintegrate-ncvbr-how-should-we-interpret-and-handle-this-error-not-mentioned-i}

I have some user-defined module describing my integrand which has to be computed numerically (it's much more complicated than this but bear with me):

```
foo[x_?NumericQ, y_?NumericQ, z_?NumericQ] := ...
```

- asked by Sarah (3 votes)

[How can I solve an equation where indexed variables get updated during iteration?]\url{http://mathematica.stackexchange.com/questions/59776/how-can-i-solve-an-equation-where-indexed-variables-get-updated-during-iteration}

I am trying to solve for a root for a certain equation, but some of the variables in this equation are indexed and get updated during iteration. The code that I am interested in is like the following:

```
...
```

- asked by erickwy (1 vote)

[Generalize WASD Function First Person Viewing]\url{http://mathematica.stackexchange.com/questions/59655/generalize-wasd-function-first-person-viewing}

How might I generalize the following WASD question such that it works with any Graphics3D object and includes q and e for z(up and down) movement? For example qweasd[gr_].

In addition, how might I ...

- asked by Liam William (2 votes)

7.17 Tuesday, September 9, 2014

=====
 Top new questions this week:
 =====

[Finding length of intersection of two surfaces]\url{http://mathematica.stackexchange.com/questions/58768/finding-length-of-intersection-of-two-surfaces}

I would like to know how we find the length of the intersection of two surfaces. For instance, in the following example, a surface intersects with a plane:

How do we find the length of intersection ...

- asked by user19522 (25 votes), answered by RunnyKine (18 votes)

 [How to ask Mathematica to imitate Andy Warhol's pop-art painting?]\url{http://mathematica.stackexchange.com/questions/59132/how-to-ask-mathematica-to-imitate-andy-warhols-pop-art-painting}

I tried to ask Mathematica to imitate Andy Warhol, let it convert a Marilyn Monroe's portrait looks like Warhol's world famous pop-art painting. However, the result shown below is far from ...

- asked by Putterboy (24 votes), answered by Karsten 7. (16 votes)

 [How to speed up my Project Euler code]\url{http://mathematica.stackexchange.com/questions/58751/how-to-speed

`-up-my-project-euler-code}`

The evaluation speed of Mathematica often depresses me. It did it again when I wrote a code to solve a Project Euler problem.

<https://projecteuler.net/problem=206>

Here's my code:

```
ClearAll[a];
a =
...
```

- asked by Eric (17 votes), answered by Teake Nutma (13 votes)

[How do you turn off the Dashed graphics directive?]\url{http://mathematica.stackexchange.com/questions/58992/how-do-you-turn-off-the-dashed-graphics-directive}

I'm looking at Graphics Directives but can't figure out a way to turn off the Dashed graphics directive. For example, given

```
ListPlot[{Table[Sin[i], {i, 25}], Table[Cos[i], {i, 25}]},
Joined -&gt; ...
```

- asked by Andrew Cheong (16 votes), answered by m_goldberg (15 votes)

[symbolic integration error]\url{http://mathematica.stackexchange.com/questions/58940/symbolic-integration-error}

I'm running Mathematica 10.0.0 and encountered a disturbing error in the symbolic integration of a rather simple function

```
Integrate[(1 - x)*(1 + 2*x)^6/Sqrt[1 - x^2], {x, -1, 1}]/Pi
```

The correct ...

- asked by Carlo Beenakker (16 votes), answered by Artes (11 votes)

 [How to generate a blank crossword
 sheet?]\url{http://mathematica.stackexchange.com/questions/59001/how-to-generate-a-blank-crossword-sheet}

I attempted to generate a blank crossword sheet. My method is by combining the rows and columns as shown on the graph below. However, some of the across and down numbers then appeared out of place ...

- asked by Putterboy (14 votes), answered by ybeltukov (17 votes)

 [Where to see all Mathematica
 units]\url{http://mathematica.stackexchange.com/questions/58793/where-to-see-all-mathematica-units}

Is there a tutorial page that have all Mathematica units? I sometimes have hard time figuring out the correct unit spelling when using quantities

- asked by Yituo (13 votes), answered by paw (17 votes)

=====
 Greatest hits from previous weeks:

=====
 [Finding unit tangent, normal, and binormal vectors for a given
 $r(t)$]\url{http://mathematica.stackexchange.com/questions/18598/finding-unit-tangent-normal-and-binormal-vectors-for-a-given-rt}

For my Calc III class, I need to find $T(t)$, $N(t)$, and $B(t)$ for $t=1, 2$, and -1 , given $r(t)=\{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...

- asked by a98 (12 votes), answered by Artes (29 votes)

 [Get a "step by step" evaluation in Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-step-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (55 votes), answered by J.M. (47 votes)

=====
 Can you answer these?
 =====

[CUDALink Error: A CUDALink kernel timed out?]\url{http://mathematica.stackexchange.com/questions/58853/cudalink-error-a-cudalink-kernel-timed-out}

I'm following the CUDALink tutorial [http://reference.wolfram.com/language/CUDALink/tutorial/Introduction.html] and everything is going fine until I get to the part that calls CUDADot on the ...

- asked by Edmund (2 votes)

 [Using ParallelMap to run multiple Game of Life simulations simultaneously]\url{http://mathematica.stackexchange.com/questions/59224/us

```
ing-parallelmap-to-run-multiple-game-of-life-simulations-simultaneously>
)
```

My Assignment and Code

As an exercise in Parallel computing I've been tasked with implementing Conway's GoL in a way such that at every iteration only a fraction of cells are updated. I'm then to run ...

- asked by Jason Houtekamer (2 votes)

[How to syntax check that all instance of symbol must be contained in Subscript[]]\url{http://mathematica.stackexchange.com/questions/59202/how-to-syntax-check-that-all-instance-of-symbol-must-be-contained-in-subscript}

I have a function `f[expr]` that is only allowed to take an expression `expr` that is a polynomial in `Subscript[x, _]`. By this, I mean that `expr` can be a sum/difference of terms (up to other ...

- asked by QuantumDot (2 votes)

7.18 September 2, 2014

=====

Top new questions this week:

=====

[Object separation from a 2.5D surface]\url{http://mathematica.stackexchange.com/questions/58269/object-separation-from-a-2-5d-surface}

I'm trying to identify the shape and the boundaries of objects. The data was generated with a laser scanner and represent the surface of an area in which many boulders lay on the ground and making up ...

- asked by zeckra (18 votes), answered by shrx (3 votes)

[Site - Cell Correspondence in Voronoi Diagram obtained via VoronoiMesh]\url{http://mathematica.stackexchange.com/questions/58395/site-cell-correspondence-in-voronoi-diagram-obtained-via-voronoimesh}

Consider the following:

```
pts = RandomReal[4, {10, 2}];
vor = VoronoiMesh[pts, {{0, 4}, {0, 4}}];
```

```
Graphics[{GraphicsComplex[
MeshCoordinates[vor], {Thick, Blue, MeshCells[vor, 1],
...}
```

- asked by RunnyKine (12 votes), answered by ybeltukov (7 votes)

[How to create a neon light effect in Mathematica?]\url{http://mathematica.stackexchange.com/questions/58602/how-to-create-a-neon-light-effect-in-mathematica}

I tried to use Glow to create a neon light effect on a torus object. The result shown on the left of the picture below looks quite different from the real one on the right. Is there a way to obtain a ...

- asked by Putterboy (12 votes), answered by DaveStrider (26 votes)

[Find maximum value of interpolation function - obviously wrong result]\url{http://mathematica.stackexchange.com/questions/58244/find-maximum-value-of-interpolation-function-obviously-wrong-result}

Minimizing and maximizing interpolation function has already been asked and answered, see here for example.

Yet, I observe a strange behaviour. Well, I can understand that the wrong guess of ...

- asked by anderstood (11 votes), answered by Karsten 7. (12 votes)

[Set of integers not divisible by smaller set of primes]\url{http://mathematica.stackexchange.com/questions/58520/set-of-integers-not-divisible-by-smaller-set-of-primes}

Let p_n be the sequence of prime numbers, and $s(x,n)$ the set of integers less or equal than x that are not divisible by p_1, \dots, p_n . I can define it as follows:

...

- asked by martin (10 votes), answered by Mr.Wizard (14 votes)

[Neumann boundary conditions in NDSolve over nontrivial region]\url{http://mathematica.stackexchange.com/questions/58412/neumann-boundary-conditions-in-ndsolve-over-nontrivial-region}

The problem I would like to solve involves diffusion in the following region

```
reg = ImplicitRegion[-5 <= x <= 5 && -5 <= y <= 5
&& x^2 + y^2 >= 1^2, {x, y}];
```

...

- asked by Greg P (10 votes), answered by user21 (9 votes)

[Is garbage collection broken in version 10.0.0?]\url{http://mathematica.stackexchange.com/questions/58375/is-garbag

```
e-collection-broken-in-version-10-0-0}
```

In version 10.0.0 under Windows I am observing the following behavior:

```
Do[Module[{foo}, foo[x_] := 1; foo[0]], {10}]
```

```
Names["foo$*"]
```

```
{"foo$593", "foo$594", "foo$595", "foo$596", "foo$597", ...
```

- asked by Mr.Wizard (9 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[Can Mathematica do symbolic linear algebra?]\url{http://mathematica.stackexchange.com/questions/3242/can-mathematica-do-symbolic-linear-algebra}
```

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, `Simplify[Transpose[Transpose[A].Transpose[B]]]`" and Mathematica would simplify it to $B.A$?

...

- asked by nokie (24 votes), answered by helen (12 votes)

```
-----
[How to force 2+2=5]\url{http://mathematica.stackexchange.com/questions/48929/how-to-force-2-2-5}
```

I was looking at this question (writing a program such that $2 + 2 = 5$) and tried to write something in Mathematica, but I couldn't get

something to work without completely replacing Plus. Neither of ...

- asked by Artefacto (4 votes), answered by halirutan (7 votes)

=====
 Can you answer these?
 =====

[SyntaxForm not correctly parsed by
 FrontEnd]\url{http://mathematica.stackexchange.com/questions/58531/syntaxfo
 rm-not-correctly-parsed-by-frontend}

When using TagBox with SyntaxForm, I noticed sometimes it is not well
 parsed by the FrontEnd. Here is a minimal example. First input

```
TagBox["f", "test", SyntaxForm -&gt; "^"] // DisplayForm
```

Then ...

- asked by Yi Wang (1 vote)

 [Segmentation of
 sunspots]\url{http://mathematica.stackexchange.com/questions/58673/segmenta
 tion-of-sunspots}

I recently went for a walk with my camera and snapped a few pictures of
 the sun. The pictures didn't turn out too well, but this was to be
 expected without a telescope. I thought it might be a nice ...

- asked by paw (6 votes)

 [Implementation of Series
 function]\url{http://mathematica.stackexchange.com/questions/58343/implemen

tation-of-series-function}

I'm trying to evaluate the partial derivatives of some function $F[x,y]$ at some point, i.e.

```
Limit[Limit[D[F[x,y] ,{x,m},{y,n}],x->x0],y->y0]
```

However, for higher derivatives I find that it fails ...

- asked by Barefeg (2 votes)

7.19 August 26, 2014

=====
 Top new questions this week:
 =====

[Proving the hairy ball theorem using
 xAct]\url{http://mathematica.stackexchange.com/questions/57726/proving-the-hairy-ball-theorem-using-xact}

I would to formally prove the hairy ball theorem in Mathematica, initially just for the S^2 , and then see about generalizing.

An approach I thought about to use the xAct package to define S^2 and ...

- asked by Daniel Mahler (15 votes)

[How to understand the usage of Inner and Outer figuratively?]\url{http://mathematica.stackexchange.com/questions/57760/how-to-understand-the-usage-of-inner-and-outer-figuratively}

Description:

In Mathematica the functions like `Thread`, `Inner`, `Outer` etc. are very important and are used frequently.

For the function `Thread`:

`ThreadUsage1`:

`Thread[f[{a, b, c}]]`

`{f[a], f[b], ...}`

- asked by Tangshutao (15 votes), answered by Timothy Wofford (5 votes)

[Make `MapIndexed` listable]\url{http://mathematica.stackexchange.com/questions/57898/make-map-indexed-listable}

My goal is to apply `MapIndexed` to every element of a nested list without destroying the arithmetic operations within the elements. For example, let's start with this list:

`{a, {b, {c^d, {e + f g}}}}`

...

- asked by seismatica (14 votes), answered by Mr.Wizard (10 votes)

[Is it possible to insert new colour schemes into `ColorData`?]\url{http://mathematica.stackexchange.com/questions/57885/is-it-possible-to-insert-new-colour-schemes-into-colordata}

Because of the standards in my field, for many plots I need to use (or

at least end up using) rather narrowly defined colour schemes, and in particular the Matlab "Jet" scheme, which is well described ...

- asked by episanty (12 votes), answered by Mr.Wizard (10 votes)

 [How to combine one or more rotated graphics objects?]\url{http://mathematica.stackexchange.com/questions/57803/how-to-combine-one-or-more-rotated-graphics-objects}

I wish to produce an image with more than one composite graphics objects which have been modified using Rotate. I feel this should not be difficult, but haven't yet found a solution.

A simple example ...

- asked by image_doctor (11 votes), answered by mfvonh (11 votes)

 [What is the correct way to use specific rule for specific pattern match when parsing an expression?]\url{http://mathematica.stackexchange.com/questions/58010/what-is-the-correct-way-to-use-specific-rule-for-specific-pattern-match-when-par}

update:

Thanks for the answers below. But I noticed they do not handle the following special cases: $lis=1$ and $lis=z$, $lis=1/z$ and $lis=-z$ as these are also considered legal input as given in the ...

- asked by Nasser (10 votes), answered by seismatica (6 votes)

 [Map of United States as a 3D histogram]\url{http://mathematica.stackexchange.com/questions/57872/map-of-united-states-as-a-3d-histogram}

By combining the state data from here and the extrusion code from here I have managed to make prisms of the various US states such as

However, the extrusion method loses information about the ...

- asked by sonright (10 votes), answered by Vitaliy Kaurov (11 votes)

=====
 Greatest hits from previous weeks:
 =====

[Finding all simple paths between two vertices in a graph]\url{http://mathematica.stackexchange.com/questions/25779/finding-all-simple-paths-between-two-vertices-in-a-graph}

There are built-in methods to find a shortest path between two vertices in a graph, and the question on finding all shortest paths between two vertices has gathered quite a bit of attention.

A path ...

- asked by mrm (11 votes), answered by trybik (10 votes)

[Marking points of intersection between two curves]\url{http://mathematica.stackexchange.com/questions/10472/marking-points-of-intersection-between-two-curves}

I'm trying to illustrate the solutions numerically and graphically for an equation such as $\text{Tan}[x] == x$. I think I did everything ok except I wanted to mark each intersection between $\text{Tan}[x]$ and x .

...

- asked by fiz (24 votes), answered by belisarius (31 votes)

=====
 Can you answer these?
 =====

[Error when using
 EquationTrekker]\url{http://mathematica.stackexchange.com/questions/58005/error-when-using-equationtrekker}

I just got to know EquationTrakker because I need to do phase graphs for my classes.

When I load it

<< EquationTrekker‘

everything works fine with no errors.

However when I try to use an ...

- asked by Geo (2 votes)

 [How to solve for exponents in an infinite
 product?]\url{http://mathematica.stackexchange.com/questions/57930/how-to-solve-for-exponents-in-an-infinite-product}

Say I have a power series, $f(x,y) \in 1 + x\mathbb{Z}[[x,y]]$

Then it admits a unique expansion

$$f(x,y) = \prod_{i=1}^{\infty} \prod_{j=0}^{\infty} (1 - x^i y^j)^{n_{i,j}}$$

for some integers, n_i, \dots

- asked by Vivek Shende (2 votes)

 [Exporting a compiled function for later use]\url{http://mathematica.stackexchange.com/questions/58108/exporting-a-compiled-function-for-later-use}

I compiled a function then used it in NMinimize. The computation took 19 seconds. Then, I exported this compiled function and restarted MMA and imported this compiled function into my notebook. This ...

- asked by yashar (5 votes)

7.20 August 19, 2014

=====
 Top new questions this week:
 =====

[Is this 30% slowdown in Mathematica 10 due to DownValues lookup time?]\url{http://mathematica.stackexchange.com/questions/57301/is-this-30-slowdown-in-mathematica-10-due-to-downvalues-lookup-time}

Running several numerical self-programmed packages I realized already some time ago that Mathematica 10 needed between 20 and 40% more time. I did already report this of course with a simple example ...

- asked by Rolf Mertig (26 votes)

 [2D random walk within a bounded area]\url{http://mathematica.stackexchange.com/questions/57561/2d-random-walk-within-a-bounded-area}

I want to simulate a random walk on two dimension in a bounded area such

as a square or circle. I am thinking of using If statement to define a boundary. Is there a better way to define a bounded ...

- asked by yashar (20 votes), answered by Pickett (21 votes)

["Indexing" a
vector]\url{http://mathematica.stackexchange.com/questions/57613/indexing-a
-vector}

I need to "index" a vector according to the first occurrence of its
distinct elements.

I have written

```
index[list_] :=
Module[{x = list, p},
p = Flatten /@ Map[Position[x, #] &,, ...
```

- asked by eldo (13 votes), answered by kguler (18 votes)

[Convert spectral distribution to RGB
color]\url{http://mathematica.stackexchange.com/questions/57389/convert-spe
ctral-distribution-to-rgb-color}

Presume I have a spectrum as a function of wavelength (an example being
the blackbody spectrum):

I want to convert that to a single RGB color to display on-screen, i.e.
the "color" of that object ...

- asked by Guillochon (13 votes), answered by Sjoerd C. de Vries (11
votes)

[Why does Mathematica simplify
 x/x ?] \url{http://mathematica.stackexchange.com/questions/57489/why-do
es-mathematica-simplify-x-x-to1}

If I enter x/x , I get 1. Such behavior leads to this:

```
Simplify[D[Sqrt[x^2], x, x]]
```

0

The same would be even if I use Together instead of Simplify.

One could then think that $\sqrt{x^2}$ is ...

- asked by Ruslan (11 votes), answered by Jens (5 votes)

[Manipulate crashes after running 4
minutes] \url{http://mathematica.stackexchange.com/questions/57247/manipulat
e-crashes-after-running-4-minutes}

The following code generates the familiar 3D-plot:

```
Manipulate[  
Plot3D[Sin[x a] - Cos[y ], {x, -10, 10}, {y, -10, 10},  
ColorFunction -> "TemperatureMap"], {a, -2, 2, 0.1}]
```

However ...

- asked by MathLind (10 votes), answered by Szabolcs (2 votes)

[Incompatible InterpolatingFunction between V9 (and earlier) and V10]\url{http://mathematica.stackexchange.com/questions/57608/incompatible-interpolatingfunction-between-v9-and-earlier-and-v10}

I am encountering compatibility issues when loading DumpSave(d) definitions in V10 that have been created with earlier versions. V10 appears to be unable to digest 'InterpolatingFunction from earlier ...

- asked by Markus Roellig (10 votes), answered by Mr.Wizard (4 votes)

=====
 Greatest hits from previous weeks:
 =====

[Marking points of intersection between two curves]\url{http://mathematica.stackexchange.com/questions/10472/marking-points-of-intersection-between-two-curves}

I'm trying to illustrate the solutions numerically and graphically for an equation such as $\text{Tan}[x] == x$. I think I did everything ok except I wanted to mark each intersection between $\text{Tan}[x]$ and x .

...

- asked by fiz (24 votes), answered by belisarius (31 votes)

 [How to find all the local minima/maxima in a range]\url{http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range}

I want to find :

all local maxima in range
 all local minima in range

>From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (38 votes), answered by Daniel Lichtblau (40 votes)

=====

Can you answer these?

=====

[Is it possible to Compile the function with string argument?]\url{http://mathematica.stackexchange.com/questions/57355/is-it-possible-to-compile-the-function-with-string-argument}

As we can see from the Compile documentation, the typical arguments for Compile should be Integer, Real, Complex and True | False:

Is it possible to use a String as argument type for Compile?

May ...

- asked by Rom38 (2 votes)

[Functional-Style Fixed-Length Queue Object?]\url{http://mathematica.stackexchange.com/questions/57539/functional-style-fixed-length-queue-object}

Following up on question Side-effecting an array in an association? and @Mr.Wizard's answer in there, I'm modernizing and tweaking Daniel Lichtblau's efficient queues and ran into a little roadblock.

...

- asked by Reb.Cabin (2 votes)

 [Adding an unused column creates an error in
 JoinAcross]\url{http://mathematica.stackexchange.com/questions/57345/adding
 -an-unused-column-creates-an-error-in-joinacross}

I'd been having trouble using JoinAcross on two datasets. After going
 through the answers to my original question and fixing my code, I find
 I'm now having a problem that I think is being caused by ...

- asked by Mitchell Kaplan (2 votes)

7.21 August 12, 2014

=====
 Top new questions this week:
 =====

[Incompatible Changes since Mathematica Version
 7?]\url{http://mathematica.stackexchange.com/questions/56728/incompatible-c
 hanges-since-mathematica-version-7}

There is documentation of the incompatible changes made to Mathematica
 with each major release:

Incompatible Changes since Mathematica Version 1

Unfortunately that documentation simply stopped ...

- asked by Mr.Wizard (22 votes), answered by Mr.Wizard (22 votes)

 [How to make a stereogram in
 Mathematica?]\url{http://mathematica.stackexchange.com/questions/57034/how-

to-make-a-stereogram-in-mathematica}

Given a background and a pattern jpg files, is there a quick and easy way to produce a stereogram by using Mathematica? The following picture was produced from Photoshop, spent about half an hour.

...

- asked by user16069 (15 votes), answered by Simon Woods (9 votes)

 [Combining images with
 CUDA]\url{http://mathematica.stackexchange.com/questions/56786/combining-images-with-cuda}

2nd Edition:

To make it a bit more clear, and to summarize the discussion in comments.

I have a small image, like this one:

```
InsertImage =
DensityPlot[Sqrt[1 - x^2 - y^2], {x, -1, 1}, {y, -1, 1},
...
```

- asked by Alexey Bobrick (13 votes), answered by Simon Woods (10 votes)

 [How to change element color in Periodic
 Table?]\url{http://mathematica.stackexchange.com/questions/57133/how-to-change-element-color-in-periodic-table}

The command

```
ColorData["Atoms", "Panel"]
```


generates a periodic table.

As I don't want to reinvent the wheel, I asked myself how to change the color of each cell in the periodic table, (hydrogen -> ...

- asked by Zhozer (12 votes), answered by belisarius (14 votes)

```
[Apply an image as a texture to  
text]\url{http://mathematica.stackexchange.com/questions/56719/apply-an-ima  
ge-as-a-texture-to-text}
```

I have the following equation

```
eq = Sum[x^2, {x, 0, 10}]
```

and an image image =

```
Import["http://creativity103.com/collections/Graphic/rainbowbars.jpg"].
```

How might I output a transparent version of the ...

- asked by Liam William (11 votes), answered by Simon Woods (16 votes)

```
[Dataset: get number of levels and  
elements]\url{http://mathematica.stackexchange.com/questions/56983/dataset-  
get-number-of-levels-and-elements}
```

The summary box for Dataset objects shows the number of levels and elements at the bottom.

How can we get these values programmatically?

For example, "4 levels, 350 elements" in the Planets ...

- asked by Szabolcs (10 votes), answered by WReach (7 votes)

[PlotLegends -> "Expressions" not working when Plot given one function]\url{http://mathematica.stackexchange.com/questions/56829/plotlegends-expressions-not-working-when-plot-given-one-function}

I don't get a legend when I use the option PlotLegends -> "Expressions" when the first argument to Plot is a single function. It works OK when I give Plot a list of functions.

Test cases:

...

- asked by mathe (10 votes), answered by rcollyer (8 votes)

=====
Greatest hits from previous weeks:
=====

[Finding unit tangent, normal, and binormal vectors for a given $r(t)$]\url{http://mathematica.stackexchange.com/questions/18598/finding-unit-tangent-normal-and-binormal-vectors-for-a-given-rt}

For my Calc III class, I need to find $T(t)$, $N(t)$, and $B(t)$ for $t=1, 2$, and -1 , given $r(t)=\{t, t^2, t^3\}$.

I've got Mathematica, but I've never used it before and I'm not sure how to coerce ...

- asked by a98 (12 votes), answered by Artes (29 votes)

[Finding the centroid of the area between two curves]\url{http://mathematica.stackexchange.com/questions/17170/finding-th

e-centroid-of-the-area-between-two-curves}

When I have an area bounded by curves, is there a built-in way to find the center of the area? Or do I have to plot it first and then use ComponentMeasurements on it?

For example: the area under $y= \dots$

- asked by a3f (10 votes), answered by george2079 (3 votes)

=====

Can you answer these?

=====

[Plotting a transformed region only works with integer inputs]\url{http://mathematica.stackexchange.com/questions/57112/plotting-a-transformed-region-only-works-with-integer-inputs}

I can't figure out why the following code only works with integers.

```
r1 = TransformedRegion[Cuboid[{-1, -1, -1}, {1, 1, 1}],
TranslationTransform[{0, 1, 0}]]
RegionPlot3D[r1]
DiscretizeRegion[r1]
...
```

- asked by jeff (5 votes)

[Symbolic integration of elliptic functions]\url{http://mathematica.stackexchange.com/questions/57024/symbolic-integration-of-elliptic-functions}

Is there some clever way to integrate products of elliptic functions $\wp(z;g_2,g_3)$ or $\zeta(z;g_2,g_3)$ in Mathematica?

Mathematica seems to be able to integrate functions like

...

- asked by TheTwistedSector (3 votes)

[Version 10 cannot print properly?]\url{http://mathematica.stackexchange.com/questions/57182/version-10-cannot-print-properly}

I have two problems with printing in version 10.

First, I can't print correctly with a setting of printing scale

For example, I have some plots in a notebook,

```
Grid@Table[
Plot[Sin[x], {x, 0, 2 ...
```

- asked by xslittlegrass (2 votes)

7.22 August 5, 2014

=====

Top new questions this week:

=====

[Numerically solving Helmholtz equation in 2D for arbitrary shapes]\url{http://mathematica.stackexchange.com/questions/56305/numerically-solving-helmholtz-equation-in-2d-for-arbitrary-shapes}

I would like to solve the Helmholtz equation with dirichlet boundary conditions in 2 dimensions for an arbitrary shape. (for a qualitative comparison of the eigenstates to periodic orbits in the ...

- asked by Julian S. (25 votes), answered by Mark McClure (20 votes)

 [V10's Operator Forms - what are they good for?]\url{http://mathematica.stackexchange.com/questions/56504/v10s-operator-forms-what-are-they-good-for}

V10 introduces an operator form for several functions perhaps primarily due to their role in queries as part of introducing data science functionality. At first pass it seems a lot of effort to add ...

- asked by Ronald Monson (22 votes), answered by Simon Woods (24 votes)

 [Why is Query so much slower than Part?]\url{http://mathematica.stackexchange.com/questions/56609/why-is-query-so-much-slower-than-part}

Time for another of these(1),(2) as yet another new-in-10 function appears to have poor performance compared to older alternatives. This time: Query appears to be orders of magnitude slower than Part ...

- asked by Mr.Wizard (15 votes), answered by m_goldberg (8 votes)

 [BitShiftRight produces incorrect results in Version 10]\url{http://mathematica.stackexchange.com/questions/56241/bitshiftright-produces-incorrect-results-in-version-10}

With Mathematica 10 for Mac, BitShiftRight works properly on lists of up to 100000 numbers, but appears to give incorrect results when threaded over lists of 100001 or more:

```
v1 = Table[i, {i, 1, ...
```

- asked by DBM (14 votes), answered by Mr.Wizard (9 votes)

[Speed of curated data calls in Version 10]\url{http://mathematica.stackexchange.com/questions/56172/speed-of-curated-data-calls-in-version-10}

Curated datasets underwent a significant overhaul in version 10, primarily in the way content is delivered in the form of Objects and Entities. Additionally, it appears that this change in content ...

- asked by bobthechemist (14 votes), answered by Nick Lariviere (13 votes)

[the winding number for the circle map (Arnold tongue)]\url{http://mathematica.stackexchange.com/questions/56499/the-winding-number-for-the-circle-map-arnold-tongue}

I want to do an iterative calculation:

```
f[n_, a_, b_] := Nest[# + a - b Sin[2 Pi #] & , 0, n]/n;
```

If I use i use the machine precision, it maybe produce a great error,for example:

```
N@f[500, 1/2, ...
```

- asked by Chenminqi (12 votes), answered by heropup (10 votes)

[Speed up adding Poisson noise to an image]\url{http://mathematica.stackexchange.com/questions/56180/speed-up-adding-poisson-noise-to-an-image}

I'm simulating some images corrupted with Poisson noise, but I'm encountering a few problems with performance. According to the documentation on ImageEffect, one can add Poisson noise according to the ...

- asked by blochwave (11 votes), answered by blochwave (16 votes)

=====
 Greatest hits from previous weeks:
 =====

[How can I add drop shadows and specular highlights to 2D graphics?]\url{http://mathematica.stackexchange.com/questions/43186/how-can-i-add-drop-shadows-and-specular-highlights-to-2d-graphics}

I thought I'd share some code in the form of a self-answered question, but other answers are of course welcome.

Drop shadows are a familiar visual effect, giving the impression of a graphical element ...

- asked by Simon Woods (31 votes), answered by Simon Woods (35 votes)

 [Resources for beautiful Mathematica Stylesheets]\url{http://mathematica.stackexchange.com/questions/5846/resources-for-beautiful-mathematica-stylesheets}

When the Wolfram Demonstrations were introduced and the Documentation-Center was redesigned, I remember it was the first time I thought someone had put some effort into creating a beautiful ...

- asked by halirutan (81 votes), answered by rm -rf (41 votes)

=====
 Can you answer these?

=====

[DatabaseLink Example for DB2 and
Mathematica]\url{http://mathematica.stackexchange.com/questions/56283/datab
aslink-example-for-db2-and-mathematica}

could someone please point me to good example on how to make a JDBC
connection to an IBM DB2 database?

- asked by Rick QI (1 vote)

[Precision problem while evaluating RegionMember or Element in
V10]\url{http://mathematica.stackexchange.com/questions/56402/precision-pro
blem-while-evaluating-regionmember-or-element-in-v10}

I'll try to give you a background on where the problem occurred. The
problem itself is defined near the end of the post.

I'm running a sort of a simulation of a particle in a box. I finally got
my ...

- asked by Daroslav (3 votes)

[Workarounds for a possible bug in the linearity of
FourierTransform]\url{http://mathematica.stackexchange.com/questions/56237/
workarounds-for-a-possible-bug-in-the-linearity-of-fouriertransform}

This is somewhat similar to this question, except the problem I am
encountering is to do with Fourier transforms of scalar multiples of
functions and their derivatives.

I wish to input ...

- asked by Oliver Lunt (2 votes)

7.23 July 29, 2014

=====
 Top new questions this week:
 =====

[Best practice of passing a large number of parameters to functions]\url{http://mathematica.stackexchange.com/questions/55833/best-practice-of-passing-a-large-number-of-parameters-to-functions}

I have a number of functions which all take a large number of parameters. I am wondering which is the best practice of passing these parameters to those functions. I could of course simply specify the ...

- asked by Uwe Thummel (16 votes), answered by Mr.Wizard (12 votes)

[Is there a way to recreate the typical Red/Blue-Postereffect using Mathematica?]\url{http://mathematica.stackexchange.com/questions/55684/is-there-a-way-to-recreate-the-typical-red-blue-postereffect-using-mathematica}

I think nearly all of us have at least once seen an image like this:

So I wondered whether it is possible to recreate this effect using Mathematica because it seems like it wouldn't need that many ...

- asked by Levix (15 votes), answered by kale (14 votes)

[How can I mend this broken heart?]\url{http://mathematica.stackexchange.com/questions/55905/how-can-i-mend-this-broken-heart}

mend-this-broken-heart}

Try to evaluate the following code:

```
ContourPlot3D[(x^2 + 9/4 y^2 + z^2 - 1)^3 == x^2 z^3 + 9/80 y^2 z^3,
{x, -6/5, 6/5}, {y, -6/5, 6/5}, {z, -6/5, 3/2},
Mesh -&gt; None, Boxed -&gt; False, ...
```

- asked by LCFactorization (13 votes), answered by Rahul Narain (18 votes)

[Geographic background containing both outlines and contours:
how?]\url{http://mathematica.stackexchange.com/questions/55900/geographic-b
ackground-containing-both-outlines-and-contours-how}

I would like to create a map which will show lakes and rivers together with elevation contours and contour labels. What is the simplest way to do this with GeoGraphics in version 10?

The solution I ...

- asked by Szabolcs (11 votes), answered by WReach (11 votes)

[What is the natural way of using Dataset to get a
FittedModel?]\url{http://mathematica.stackexchange.com/questions/56110/what
-is-the-natural-way-of-using-dataset-to-get-a-fittedmodel}

The new Dataset in Mathematica 10 is a great addition to the language, potentially reducing the convenience gap with R. Given this, I would like to understand what the equivalent simple or natural ...

- asked by Simplex (10 votes), answered by WReach (5 votes)

[Testing Credit Usage in Wolfram Programming Cloud]\url{http://mathematica.stackexchange.com/questions/55970/testing-credit-usage-in-wolfram-programming-cloud}

I currently have a free WPC account, which I am using for testing purposes. Amongst other things, I want to find out more about how the credit system works, in particular how many credits are used, ...

- asked by Analyst (9 votes), answered by Analyst (5 votes)

[Possible bug in Dynamic]\url{http://mathematica.stackexchange.com/questions/55855/possible-bug-in-dynamic}

The code below crashes the Mathematica kernel in version 10 (not in V9) every time I run it on Windows and on Mac OS. I've sent it to WRI, but was told that they could not reproduce the crash.

Does ...

- asked by nokie (9 votes), answered by Michael E2 (4 votes)

=====
Greatest hits from previous weeks:
=====

[Even Fibonacci numbers]\url{http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers}

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by Tangshutao (22 votes), answered by rcollyer (29 votes)

 [Implementing efficient multiple
 undo]\url{http://mathematica.stackexchange.com/questions/1953/implementing-
 efficient-multiple-undo}

At the time this question was asked, version 10 was not out yet. The
 Front End of Mathematica 10 does have multiple undo, see the answer by
 John Fultz.

The Mathematica Front End's built-in Undo ...

- asked by Rojo (111 votes), answered by John Fultz (30 votes)

=====
 Can you answer these?
 =====

[Result of Integrate depends on order of integration although the domain
 is
 rectangular]\url{http://mathematica.stackexchange.com/questions/55868/resul
 t-of-integrate-depends-on-order-of-integration-although-the-domain-is-re
 cta}

The following:

Mass/(2 J)

Integrate[(-2Rotation(r^2(r-Mass)(1-3Cos[\[Theta]]^2) - Rotation^2(r Cos[\[Theta]]^2(3

- asked by auxsvr (2 votes)

[PlotMarkers problem in ErrorListPlot, Mathematica 10]\url{http://mathematica.stackexchange.com/questions/56132/plotmarkers-problem-in-errorlistplot-mathematica-10}

I recently upgraded to Mathematica 10, very excited about the multiple undo function of course.

However I very quickly noticed that if I specify a setting for PlotMarkers in the ErrorListPlot ...

- asked by nate (2 votes)

[Unique CellID in-between notebooks]\url{http://mathematica.stackexchange.com/questions/55968/unique-cellid-in-between-notebooks}

Documentation says that CellID is guaranteed to be unique for a given notebook.

I've noticed that CellID are fairly high numbers and although probabilistically speaking the odds of coincidence are ...

- asked by Ranza (2 votes)

7.24 July 22, 2014

=====

Top new questions this week:

=====

[DeleteDuplicatesBy is not performing as I'd hoped. Am I missing something?]\url{http://mathematica.stackexchange.com/questions/55294/delete-duplicatesby-is-not-performing-as-id-hoped-am-i-missing-something}

Deja vu: a new-in-v10 function should provide a better solution to an old problem, but my enthusiasm is curbed when I run timings. This time

the function is `DeleteDuplicatesBy` and while its ...

- asked by Mr.Wizard (18 votes), answered by Jacob Akkerboom (23 votes)

```
[Mathematica 10 Notebook Fonts Look  
Bad]\url{http://mathematica.stackexchange.com/questions/55071/mathematica-1  
0-notebook-fonts-look-bad}
```

I've upgraded my home installation of Mathematica from version 9 to 10 today on a Windows 8.1 machine, and I'm getting a weird font issue - the fonts are not anti-aliased, and look unbalanced and ...

- asked by Gleno (17 votes), answered by Tetsuo Ichii (17 votes)

```
[Mathematica 10 funny bug / Easter  
egg?]\url{http://mathematica.stackexchange.com/questions/55081/mathematica-  
10-funny-bug-easter-egg}
```

I have no idea what is happening here.
I'm using Mathematica 10.

I mistyped "FriendNetwork" as "FriendsNetwork" and got a weird result:

The option "FriendsNetwork" is not even listed in the help ...

- asked by Space monkey (17 votes), answered by Pickett (20 votes)

```
[Why does ImportString["1c", "Table"] eat the letter  
c?]\url{http://mathematica.stackexchange.com/questions/55245/why-does-impor  
tstring1c-table-eat-the-letter-c}
```

I have some whitespace-separated matrix data that I read with `Import[... , "Table"]`. The data contained mixed strings and numbers (the strings are for row and column names).

I noticed this weird ...

- asked by Szabolcs (14 votes), answered by Szabolcs (16 votes)

[HoldForm doesn't hold
form]\url{http://mathematica.stackexchange.com/questions/55506/holdform-doesnt-hold-form}

In Mathematica version 10, `HoldForm` no longer produces the same results as in version 8 (edit: I only have versions 10 and 8 installed, so can't compare to version 9 directly). Here are some examples ...

- asked by Jens (12 votes), answered by Simon Woods (4 votes)

[Why does WRI not provide symbolic solution(s) to Heat
equation?]\url{http://mathematica.stackexchange.com/questions/55546/why-does-wri-not-provide-symbolic-solutions-to-heat-equation}

Why does WRI not provide symbolic solution(s) to Heat equation?

or more generally, Green functions to known PDEs

I am interested in variations of the heat equation:

I understand that Mathematica ...

- asked by chris (12 votes)

[BarLegend changes in Version 10]\url{http://mathematica.stackexchange.com/questions/55150/barlegend-changes-in-version-10}

Apparently, BarLegend in version 10 displays tick legends in scientific notation when they are smaller in magnitude than 0.01. For instance,

```
BarLegend[{"Rainbow", {-.015, .015}},
LabelStyle -&gt; ...
```

- asked by bbgodfrey (11 votes), answered by kguler (8 votes)

=====
Greatest hits from previous weeks:
=====

[When running Mathematica from a Linux terminal, how can I prevent a script from terminating upon logout?]\url{http://mathematica.stackexchange.com/questions/42838/when-running-mathematica-from-a-linux-terminal-how-can-i-prevent-a-script-from}

I am running Mathematica on a remote Linux cluster, by the terminal, using the math command. (I do not have access to a terminal GUI. For example, when I type the command mathematica, I get this ...

- asked by Andrew (11 votes), answered by shrx (2 votes)

[Even Fibonacci numbers]\url{http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers}

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the

previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by Tangshutao (22 votes), answered by rcollyer (29 votes)

=====
Can you answer these?
=====

```
[LibraryLink: is WolframLibraryData libData
persistent?]\url{http://mathematica.stackexchange.com/questions/54962/libra
rylink-is-wolframlibrarydata-libdata-persistent}
```

I am writing some C++ code that I want to call both through LibraryLink and independently from Mathematica. Thus it must be compatible with LibraryLink but not depend on it.

When calling it from ...

- asked by Szabolcs (3 votes)

```
[Issuing user-defined messages takes a long time (Message is
slow)]\url{http://mathematica.stackexchange.com/questions/55069/issuing-use
r-defined-messages-takes-a-long-time-message-is-slow}
```

Issuing messages takes a very long time in version 9 and version 10. Can others reproduce this? Is there a fix?

Update: This is slow only when using the front end, but not when running the kernel ...

- asked by Szabolcs (6 votes)

[Report: IgnoringInactive: a bug?]\url{http://mathematica.stackexchange.com/questions/55462/report-ignoringinactive-a-bug}

Just to report.

IgnoringInactiveshould work with Cases. In agreement with the things written at the Documentation Center this:

Cases[{Cos[a], Inactive[Cos][b]}, IgnoringInactive[Cos[x_]]]

works ...

- asked by Alexei Boulbitch (9 votes)

7.25 July 15, 2014

=====
 Top new questions this week:
 =====

[How to make use of Associations?]\url{http://mathematica.stackexchange.com/questions/52393/how-to-make-use-of-associations}

I have been curious about it for long. Now that Mathematica 10 arrives, I think it's time to ask the question: How the new Association data structure would be used to improve Mathematica programming?

...

- asked by Yi Wang (38 votes), answered by Leonid Shifrin (36 votes)

[PositionIndex is horribly slow]\url{http://mathematica.stackexchange.com/questions/54853/positionindex-is-horribly-slow}

I do not know how best to formulate this as a question but the new PositionIndex is horribly slow.

Using Szabolcs's clever GatherBy inversion we can implement our own function for comparison:

...

- asked by Mr.Wizard (25 votes), answered by Taliesin Beynon (15 votes)

[Is it possible to define new PlotTheme?]\url{http://mathematica.stackexchange.com/questions/54545/is-it-possible-to-define-new-plottheme}

In version 10 one can define, say,

```
$PlotTheme = "Scientific"
```

Which changes the appearance of all plots. This is fantastic because on the one hand, I can have nice plots very easily and globally ...

- asked by Yi Wang (19 votes), answered by Mr.Wizard (12 votes)

[What information is sent to Wolfram Research when loading or working with Mathematica?]\url{http://mathematica.stackexchange.com/questions/54921/what-information-is-sent-to-wolfram-research-when-loading-or-working-with-mathematica}

Recently I am told that information unknown to the user is sent to

Wolfram Servers. Is there any truth behind it ? I was told that more than just an IP address of the user is sent to them and that ...

- asked by nathan (18 votes)

[How to disable the small pop-up windows when mouse is over a Mathematica command in V10?]\url{http://mathematica.stackexchange.com/questions/52406/how-to-disable-the-small-pop-up-windows-when-mouse-is-over-a-mathematica-command}

In version 10, when the mouse is over a Mathematica command, a small pop-up window comes up that one can click on for help on the command.

Is there an option to disable this feature? Screen shot:

...

- asked by Nasser (17 votes), answered by Martin John Hadley (17 votes)

[What's the difference between Inactive and HoldForm?]\url{http://mathematica.stackexchange.com/questions/54556/whats-the-difference-between-inactive-and-holdform}

In version 10, Mathematica not only added Inactive / Activate but also highlighted this change in the "New in 10" page (in Core Language Enhancements). Thus, I suppose it should be something useful. ...

- asked by Yi Wang (14 votes), answered by mfvonh (11 votes)

[Mma 10: Half the parallel power (Mac Pro)?]\url{http://mathematica.stackexchange.com/questions/54553/mma-10-half

```
-the-parallel-power-mac-pro}
```

Here is a comparison of the parallel kernels launched under Mathematica under v9 and v10, on the same identical current 2014 R2-D2 Mac Pro ...

Under v9.01

```
$ProcessorCount
```

```
12
```

Issuing:

```
...
```

- asked by wolfies (14 votes), answered by Szabolcs (10 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[Calling MATLAB from
Mathematica]\url{http://mathematica.stackexchange.com/questions/10231/calling-matlab-from-mathematica}
```

How can I call MATLAB functions directly from Mathematica and transfer data/variables between the two systems?

- asked by siva82kb (33 votes), answered by Szabolcs (43 votes)

```
-----
```

```
[What is the best Mathematica tutorial for young
people?]\url{http://mathematica.stackexchange.com/questions/733/what-is-the
```

-best-mathematica-tutorial-for-young-people}

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (33 votes), answered by Vitaliy Kaurov (17 votes)

=====

Can you answer these?

=====

[possible bug in Mathematica TeXForm? Generating
 $\left\left\right\right\}$ [\url{http://mathematica.stackexchange.com/questions/54857/possible-bug-in-mathematica-texform-generating-left-left}](http://mathematica.stackexchange.com/questions/54857/possible-bug-in-mathematica-texform-generating-left-left)

I asked about this in the TeX chat. It seems Mathematica generate invalid Latex in this example.

```
ClearAll[y,x];
ode = D[y[x], x] - (y[x]^2 + 1)/(Abs[y[x] + (1 + y[x])^(1/2)]*(1 +
x)^(3/2));
...
```

- asked by Nasser (2 votes)

[How to get a uniformly distributed list of points from a B-spline
function] [\url{http://mathematica.stackexchange.com/questions/54841/how-to-get-a-uniformly-distributed-list-of-points-from-a-b-spline-function}](http://mathematica.stackexchange.com/questions/54841/how-to-get-a-uniformly-distributed-list-of-points-from-a-b-spline-function)

I created a spline function from a list of points and made a plot as follows:

```
list2 = {{3.93453, -0.623168}, {3.79708, -0.187231}, {3.72835,
0.0307369}, {3.65963, 0.248705}, {3.5909, 0.466673}, ...
```

- asked by Kaisey (1 vote)

 [Autocomplete of non-global functions]\url{http://mathematica.stackexchange.com/questions/54827/autocomplete-of-non-global-functions}

In Mathematica 9 and 10 they added autocompletion. Out of the box this works great, but when I set the CellContext to "Notebook" instead of the default "Global" (following this) it no longer ...

- asked by Anders (7 votes)

7.26 July 8,2014

=====
 Top new questions this week:
 =====

[Quick way to use conditioned patterns when defining multi-argument function?]\url{http://mathematica.stackexchange.com/questions/52057/quick-way-to-use-conditioned-patterns-when-defining-multi-argument-function}

I have a simple function that is supposed to only accept numeric values (i.e. complex/real numbers and constant symbols e.g. Pi, E).

\$\$\$f(a,b,c)=a+b+c\$\$\$

Edit: I should have chosen a less simple ...

- asked by seismatica (13 votes), answered by Mr.Wizard (14 votes)

 [ToExpression fails with long nested string expressions]\url{http://mathematica.stackexchange.com/questions/52097/toexpression-fails-with-long-nested-string-expressions}

Consider the following conversion from String to Mathematica Expression:

```
n = 10;
ToExpression[Table["{", {n}] &lt;&gt; Table["}", {n}]]
```

```
{{{{{{{{{{{{{{{{{{}}}}}}}}}}}}
```

Everything is fine.

However, when ...

- asked by shrx (10 votes), answered by Mr.Wizard (7 votes)

```
[The mysterious gap inside
Grid]\url{http://mathematica.stackexchange.com/questions/52185/the-mysterio
us-gap-inside-grid}
```

There's this gap inside Grid which I cannot seem to remove. Perhaps someone knows how.

```
blocks = Table[{Graphics[{Darker@Green, Rectangle[{0, 0}, {1000,
200}]}]}, {i, 6}]
myGrid = Grid[blocks, ...
```

- asked by Jonie (8 votes), answered by Mr.Wizard (3 votes)

```
[Why are functions called first-class objects in
Mathematica?]\url{http://mathematica.stackexchange.com/questions/52064/why-
are-functions-called-first-class-objects-in-mathematica}
```


I've heard lots of people say a function is a first-class object in Mathematica. "Everything is an expression, including function." "There is no distinction between functions and data."

Having read ...

- asked by Eric (8 votes), answered by niki (12 votes)

[Dual graph of an arbitrary (planar) graph]\url{http://mathematica.stackexchange.com/questions/52056/dual-graph-of-an-arbitrary-planar-graph}

Every planar graph has a dual. How can I obtain it with Mathematica?

I know that GraphData provides the DualGraph property for its named graphs, but I have found no method for computing the dual of ...

- asked by user16311 (7 votes), answered by Grisha Kirilin (9 votes)

[256 Shades of Grey]\url{http://mathematica.stackexchange.com/questions/52099/256-shades-of-grey}

I noticed that the following line,

```
Image[Table[x, {y, 1, 250}, {x, 30/256, 40/256, 0.02/256}],
Magnification -> 1]
```

results in the following image:

In the preceding image, there are 10 ...

- asked by DumpsterDoofus (7 votes), answered by joojaa (5 votes)

[Implementing key-value associations in Mathematica 9 with inexact numbers for keys]\url{http://mathematica.stackexchange.com/questions/51997/implementing-key-value-associations-in-mathematica-9-with-inexact-numbers-for-ke}

I'm not sure of what type of problem my issue falls into, so I haven't been able to search forums with any success. If this has already been solved then my apologies!

Essentially I'm trying to set a ...

- asked by Andrew Stewart (7 votes), answered by Michael E2 (2 votes)

=====

Greatest hits from previous weeks:

=====

[Is Mathematica an Implementation of the Wolfram Language?]\url{http://mathematica.stackexchange.com/questions/37557/is-mathematica-an-implementation-of-the-wolfram-language}

I am trying to figure out what the announcement of the Wolfram Language means for Mathematica.

Is Mathematica an implementation of the Wolfram Language, or is it something else?

- asked by Eric Brown (43 votes), answered by Joel Klein (18 votes)

[Calling MATLAB from Mathematica]\url{http://mathematica.stackexchange.com/questions/10231/calli

ng-matlab-from-mathematica}

How can I call MATLAB functions directly from Mathematica and transfer data/variables between the two systems?

- asked by siva82kb (33 votes), answered by Szabolcs (43 votes)

=====

Can you answer these?

=====

[Compiled

NormFunction]\url{http://mathematica.stackexchange.com/questions/52202/compiled-normfunction}

I would like to use a user-defined NormFunction with NDSolve, e.g.,

NormFunction -> (Norm[Take[#, 2], \[Infinity]] &)

which says that the infinity norm should be used on the first two state

...

- asked by jaclea (1 vote)

[Calculating probabilities

symbolically]\url{http://mathematica.stackexchange.com/questions/51994/calculating-probabilities-symbolically}

Is there a way to solve for statistical quantities analytically/symbolically in Mathematica?

example 1:

Lets say that I want to do a calculation that requires Bayes theorem.

I know $p(a)$, $p(b)$ and ...

- asked by kamula (5 votes)

[How to implement nested With as a single construct using functional programming

(Fold)?]\url{http://mathematica.stackexchange.com/questions/51976/how-to-implement-nested-with-as-a-single-construct-using-functional-programming}

It is possible to define my own With construct where each local constant can depend on the previous defined local constants?

I wish to replace something like this

With[{m=10},
With[{h=1/m},
...]

- asked by unlikely (1 vote)

7.27 July 1, 2014

=====

Top new questions this week:

=====

[Fitting points to tilted, off-center ellipse]\url{http://mathematica.stackexchange.com/questions/51491/fitting-points-to-tilted-off-center-ellipse}

I have 24 x-y points that are supposed to form an ellipse.

...

- asked by seismatica (15 votes), answered by ubpdqn (17 votes)

[Combining BarChart and Grid - IPCC style]\url{http://mathematica.stackexchange.com/questions/51708/combining-bar-chart-and-grid-ipcc-style}

I would like to combine a plot with a table. Something like this famous plot/table from IPCC:

So after reading Combining graphics & lists / tables I tried an approach using Grid. Pretty ...

- asked by gogoolplex (12 votes), answered by Oska (4 votes)

[How to implement Donald Knuth's up-arrow notation]\url{http://mathematica.stackexchange.com/questions/51657/how-to-implement-donald-knuths-up-arrow-notation}

How does one enter very large numbers in up-arrow notation? Up-arrow notation was created by Donald Knuth to write very large numbers in iterated exponentiation form, for example $63 = 6^{6^6}$.

- asked by user4401 (12 votes), answered by Szabolcs (20 votes)

[Is there a way to increase the smoothness of a cylinder?]\url{http://mathematica.stackexchange.com/questions/51565/is-there-a-way-to-increase-the-smoothness-of-a-cylinder}

I am using Cylinder to produce wide flat disks (in Mathematica 8). This works just fine except that the circular base of such a cylinder turns out to be really just a 40-gon which is simply too coarse ...

- asked by Burkard Polster (11 votes), answered by Mr.Wizard (13 votes)

[Efficient way to build a certain quadratic matrix]\url{http://mathematica.stackexchange.com/questions/51798/efficient-way-to-build-a-certain-quadratic-matrix}

For odd n I'm looking for a short and swift way to construct with (f.e.)

$n = 3$

$n = 11$

$n=1111$

- asked by eldo (9 votes), answered by RunnyKine (8 votes)

[Finding maximum or minimum of implicit functions]\url{http://mathematica.stackexchange.com/questions/51679/finding-maximum-or-minimum-of-implicit-functions}

is there any built in function that can be used to find maximum or minimum of implicit functions?

For example, if we have the equation

$x^2 + y^2 = (2x^2 + 2y^2 - x)^2$,
then we can visualize the ...

- asked by Algoi (7 votes), answered by Kuba (15 votes)

[How can a power of 0 or 1 be replaced?]\url{http://mathematica.stackexchange.com/questions/51585/how-can-a-power-of-0-or-1-be-replaced}

Consider this given example for ReplaceAll

$1 + x^2 + x^4 /. x^p_ -> f[p]$

This returns $1+f[2]+f[4]$ - works good (!). But if you choose

In[175]:= $1 + x + x^2 + x^4 /. x^p_ -> f[p]$
Out[175]= ...

- asked by Sumit (7 votes), answered by Daniel Lichtblau (6 votes)

=====

Greatest hits from previous weeks:

=====

[Resources for beautiful Mathematica Stylesheets]\url{http://mathematica.stackexchange.com/questions/5846/resources-for-beautiful-mathematica-stylesheets}

When the Wolfram Demonstrations were introduced and the Documentation-Center was redesigned, I remember it was the first time I thought someone had put some effort into creating a beautiful ...

- asked by halirutan (80 votes), answered by rm -rf (40 votes)

[Get a "step by step" evaluation in
Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-s
tep-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some
functions; that's to say, outputting not only the result but all the
stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (53 votes), answered by J.M. (44 votes)

=====
Can you answer these?
=====

[What's a non-trivial Mathematica program involving conscious choice of
stack vs. queue data
structure?]\url{http://mathematica.stackexchange.com/questions/51862/whats-
a-non-trivial-mathematica-program-involving-conscious-choice-of-stack-vs
> }

In a typical computer science algorithms course, much attention is given
to the discussion of queues vs. stacks as a data structure programmers
need to consciously choose from to achieve algorithmic ...

- asked by Problemaniac (1 vote)

[Import Excel data forcing links (ie workbooks) to be
updated]\url{http://mathematica.stackexchange.com/questions/51873/import-ex
cel-data-forcing-links-ie-workbooks-to-be-updated}

We have noticed importing data from an Excel spreadsheet doesnt update
links.

The problem with this is if you import a spreadsheet that comprises of linked workbooks data and those workbooks have ...

- asked by WolframFan (3 votes)

 [Smooth out contour in
 RegionPlot/ContourPlot]\url{http://mathematica.stackexchange.com/questions/
 51518/smooth-out-contour-in-regionplot-contourplot}

I would like to smooth out the jagged edges in the outermost contours in the following plot:

I have data of values as a function of variables (x,y) in the form

data = ...

- asked by Philo (1 vote)

 Subscribe to more Stack Exchange newsletters:
 <<http://stackexchange.com/newsletters>>

7.28 June 24, 2014

=====
 Top new questions this week:
 =====

[Longest path in 0/1
 matrix]\url{http://mathematica.stackexchange.com/questions/51247/longest-pa
 th-in-0-1-matrix}

I have a matrix of 0's and 1's forming a number of disjoint paths:

I would like to find the lengths of the paths, and from that "spectrum," the longest length (in the above example: 27, ...

- asked by Joseph O'Rourke (25 votes), answered by rm -rf (24 votes)

[Visualization: elliptical insights into data sets]\url{http://mathematica.stackexchange.com/questions/51163/visualization-elliptical-insights-into-data-sets}

I was recently reading the following paper on visualization techniques using ellipses to gain statistical insights. Elliptical visualization for looking at correlations has briefly been touched on ...

- asked by Pam (12 votes), answered by Pam (2 votes)

[What is the relationship between Mathematica and Wolfram Desktop?]\url{http://mathematica.stackexchange.com/questions/51372/what-is-the-relationship-between-mathematica-and-wolfram-desktop}

I'm confused about the differences among various Wolfram products. In particular what is the relationship among Mathematica, Mathematica Online, Wolfram Programming Cloud, and Wolfram Desktop?

Are ...

- asked by raxacoricofallapatorius (12 votes), answered by mfvonh (8 votes)

[Find intersection of pairs of straight lines]\url{http://mathematica.stackexchange.com/questions/51391/find-inters}

ection-of-pairs-of-straight-lines}

I have a list of 24 points, in which 2 consecutive points (1st and 2nd, 3rd and 4th, ...) are supposed to form a line.

p1={{243.8, 77.}, {467.4, 12.}, {291.8, 130.}, {476., 210.5}, {103.2, 327.}, ...

- asked by seismatica (6 votes), answered by eldo (9 votes)

[What is wrong about Abs[x]-a? Is it a bug?]\url{http://mathematica.stackexchange.com/questions/51118/what-is-wrong-about-absx-a-is-it-a-bug}

Why is the Out[74] not $\{1 - a, \{x \text{ -> } -1\}\}$?

Maximize[$\{\text{Sqrt}[x^2] - a, -1 \leq x \leq 1\}$, x]

$\{1 - a, \{x \text{ -> } -1\}\}$

- asked by fptan (6 votes), answered by RiemannZeta (4 votes)

[Find the smallest positive integer that satisfies a certain condition]\url{http://mathematica.stackexchange.com/questions/51086/find-the-smallest-positive-integer-that-satisfies-a-certain-condition}

I know Mathematica is really powerful when it comes to functional operations like applying a list of tasks to a list of variables.

Sometimes I feel like it isn't the most powerful tool when it comes ...

- asked by cartonn (6 votes), answered by mfvonh (9 votes)

```
[Why am I getting wildly incorrect results from
FirstPassageTimeDistribution with inexact transition
matrix?]\url{http://mathematica.stackexchange.com/questions/51018/why-am-i-
getting-wildly-incorrect-results-from-firstpassagetimedistribution-with>
)
```

Working on some large systems using `DiscreteMarkovProcess`, I changed the transition matrix to machine precision vs using exact values, which sped things up handily. The only problem was for edge ...

- asked by rasher (6 votes), answered by Bhuvanesh (4 votes)

=====

Greatest hits from previous weeks:

=====

```
[How many Christmas
gifts?]\url{http://mathematica.stackexchange.com/questions/39338/how-many-c
hristmas-gifts}
```

This question is based on the old song, The Twelve Days of Christmas

In a comment made on a recent question, Yves Klett remarked, "no seasonal questions this year?" This reminded me of one I solved ...

- asked by m_goldberg (18 votes), answered by rm -rf (23 votes)

```
[Generating visually pleasing circle
packs]\url{http://mathematica.stackexchange.com/questions/40334/generating-
visually-pleasing-circle-packs}
```

EDIT: I want to thank you all guys for this unexpected intellectual and artistic journey. Hope you enjoyed as I did.

I would like to generate a circle pack that mimics this: (don't pay attention on ...

- asked by VividD (60 votes), answered by level1807 (36 votes)

=====

Can you answer these?

=====

[Solve set of non-linear equations with least-squares-fitting - constrain results?]\url{http://mathematica.stackexchange.com/questions/51274/solve-set-of-non-linear-equations-with-least-squares-fitting-constrain-results}

I'm trying to solve a set of functions to determine the material properties from a set of measurement values. (To set up this method I just want to fit my model with some already calculated data).

My ...

- asked by dummesschaf (1 vote)

[what is the best package/way to insert Mathematica code in latex docs?]\url{http://mathematica.stackexchange.com/questions/51215/what-is-the-best-package-way-to-insert-mathematica-code-in-latex-docs}

I know that this question is not about strictly mathematica issue, but I think that in this site should be many people that use latex to distribute mathematica source code/examples.

If the moderators ...

- asked by Mika Ike (1 vote)

[How to force the compilation language to be C++ (not C) in CreateExecutable or CreateLibrary]\url{http://mathematica.stackexchange.com/questions/51012/how-to-force-the-compilation-language-to-be-c-not-c-in-createexecutable-or-c}

I'm trying to speed up a section of a Mathematica 9.0.1 notebook by performing some calculations in C++ with the Cilk Plus and Threading Building Blocks tools available for the Intel C++ 14.0 compiler ...

- asked by user15996 (4 votes)

7.29 June 17, 2014

=====
 Top new questions this week:
 =====

[Smooth Peter de Jong attractor]\url{http://mathematica.stackexchange.com/questions/50839/smooth-peter-de-jong-attractor}

Today I was playing with Peter de Jong attractor.

At the bottom of the page I've linked there are beautiful examples like:

My attempts are not so great:

It is around 10^5 points. For more than ...

- asked by Kuba (17 votes), answered by KennyColnago (15 votes)

[How would you efficiently implement BinListsBy?]\url{http://mathematica.stackexchange.com/questions/50559/how-would-you-efficiently-implement-binlistsby}

Let's say I have a list like this:

```
data = {{21, "Alice"}, {27, "Bob"}, {22, "Charles"}, {34, "Dora"}, {75, "Eliza"}}
```

containing ages and names of persons. What I would like is a list of e.g. ...

- asked by nokie (9 votes), answered by Mr.Wizard (8 votes)

[Mathematica outliner's capabilities]\url{http://mathematica.stackexchange.com/questions/50637/mathematica-outliners-capabilities}

As my notebooks get larger, I often try to organize them with titles/subtitles etc, structuring them as an outliner (<http://en.wikipedia.org/wiki/Outliner>)

This also helps me as I try to structure a ...

- asked by alessandro (8 votes), answered by Mike Honeychurch (7 votes)

[Control BarLegend size]\url{http://mathematica.stackexchange.com/questions/50913/control-barlegend-size}

I want to plot a big 2D array of experiment data. I need plot axes and

tick labels as well as a bar legend using BarLegend:

```
ArrayPlot[
Array[RandomInteger[100] & , {100, 100}],
PlotLegends -&gt; ...
```

- asked by Johu (6 votes), answered by Johu (6 votes)

```
[Skip header lines on
import]\url{http://mathematica.stackexchange.com/questions/50718/skip-head
er-lines-on-import}
```

When importing a data file what are the comment symbols for Mathematica?
That is, given a file like this

```
blabla
bulbul
```

```
1 2 6 54 7 ...
..
```

what symbol do I have to put in front of header lines so ...

- asked by user3683367 (6 votes), answered by george2079 (7 votes)

```
[How can I list all the 'countries 4000 km far from current
location?']\url{http://mathematica.stackexchange.com/questions/50786/how-ca
n-i-list-all-the-countries-4000-km-far-from-current-location}
```

A friend said to me on Facebook that she is 4000km away. So I want to
try to guess where she is.

How can I find which countries are a given distance from my current
location?

- asked by Boti (5 votes), answered by Oska (14 votes)

[Can I automatically stop operation that is too slow?]\url{http://mathematica.stackexchange.com/questions/50746/can-i-automatically-stop-operation-that-is-too-slow}

I need to write code like this: Do operation 1, but if it takes more than 5 seconds then stop it and do operation 2.

Is it possible to do this somehow without manual interruption?

- asked by user15933 (5 votes), answered by Nasser (8 votes)

=====

Greatest hits from previous weeks:

=====

[What is the fastest way to extract a substring from a huge string?]\url{http://mathematica.stackexchange.com/questions/44175/what-is-the-fastest-way-to-extract-a-substring-from-a-huge-string}

I develop an algorithm to find the most common substrings of a given length n up to a certain distance l in front of a pattern p in a huge sequence S . E.g. I want to find the most common hexamers ...

- asked by g3kk0 (11 votes), answered by Leonid Shifrin (9 votes)

[When running Mathematica from a Linux terminal, how can I prevent a script from terminating upon logout?]\url{http://mathematica.stackexchange.com/questions/42838/when-running-mathematica-from-a-linux-terminal-how-can-i-prevent-a-script-from}

I am running Mathematica on a remote Linux cluster, by the terminal, using the math command. (I do not have access to a terminal GUI. For example, when I type the command `mathematica`, I get this ...

- asked by Andrew (10 votes), answered by shrx (2 votes)

=====

Can you answer these?

=====

[Understanding performance: graph connected components]\url{http://mathematica.stackexchange.com/questions/50523/understanding-performance-graph-connected-components}

I need to analyze directed graphs with 10M edges, 1M vertices, and 300K strongly connected components, so that the largest one contains 400K vertices.

I read some explanations of Leonid Shifrin here, ...

- asked by Grisha Kirilin (3 votes)

[Natural boundary conditions variational methods]\url{http://mathematica.stackexchange.com/questions/50526/natural-boundary-conditions-variational-methods}

I am working on a problem of the calculus of variations. From the Variational Methods package, I can very conveniently use `EulerEquations` to get stationarity conditions in the form of Euler-Lagrange ...

- asked by Marijnn (1 vote)

[How to find a scaling parameter in matrix inversion process by MMA?]\url{http://mathematica.stackexchange.com/questions/50660/how-to-find-

a-scaling-parameter-in-matrix-inversion-process-by-mma}

I simply would like to find the inverse of a given matrix A by the iterative method $X_{k+1} = X_k(2I - AX_k)$ using $X_0 = \frac{1}{\sigma_{\max}^2} A^*$. An example is as follows

SeedRandom[123]; m = n = ...

- asked by Fazlollah Soleymani (1 vote)

7.30 June 10, 2014

=====

Top new questions this week:

=====

[Making a Mathematica package manager?]\url{http://mathematica.stackexchange.com/questions/49111/making-a-mathematica-package-manager}

I'd like to get a serious discussion started about a package manager. This has come up elsewhere, and many people have implemented their own solutions. It would be nice to have a standardized way to ...

- asked by mfvonh (10 votes), answered by mfvonh (7 votes)

[Graph from binary matrix (not adjacency) respecting the original matrix positions]\url{http://mathematica.stackexchange.com/questions/50363/graph-from-binary-matrix-not-adjacency-respecting-the-original-matrix-position}>
)

I have a binary matrix. My objective is to connect every close (without "jump") elements with value equal to 1, but I must keep the point

positions, just like it's shown at the image.

Can somebody ...

- asked by Jazz (9 votes), answered by Oska (11 votes)

[Using Mathematica to make a graphics array of circles]\url{http://mathematica.stackexchange.com/questions/49176/using-mathematica-to-make-a-graphics-array-of-circles}

I need to make .svg file that contains an array of black circles that all have radii of 5 units and are evenly spaced apart from each other 32 units.

The difficulty in creating this design is the ...

- asked by Sebastian Freeman (9 votes), answered by halirutan (3 votes)

[CSS Selectors for Symbolic XML]\url{http://mathematica.stackexchange.com/questions/49052/css-selectors-for-symbolic-xml}

Symbolic XML is a convenient way of managing XML in Mathematica, at least for casual use or small tasks. Here and elsewhere you can find examples of XML handling in Mathematica, including XSLT/XPath ...

- asked by Fallible (8 votes), answered by Fallible (12 votes)

[Complement of multisets]\url{http://mathematica.stackexchange.com/questions/49068/complement-of-multisets}

Given lists a and b , which represent multisets, how can I compute

the complement $a \setminus b$?

I'd like to construct a function `xunion` that returns the symmetric difference of multisets.

For ...

- asked by Leon Lampret (8 votes), answered by rasher (8 votes)

[Thread over uneven (ragged) expressions with full functionality?]\url{http://mathematica.stackexchange.com/questions/49359/thread-over-uneven-ragged-expressions-with-full-functionality}

There are a number of questions on this site about "threading" including several relating to uneven (ragged) lists. However, none that I could find deal with the full functionality of `Thread` but ...

- asked by Mr.Wizard (7 votes), answered by mfvonh (5 votes)

[Hatched Filling for ListPlot]\url{http://mathematica.stackexchange.com/questions/49202/hatched-filling-for-listplot}

I am plotting to data curves using `ListLinePlot`. I like the look of `Filling`, but this is going to be printed, so I want something both black and white friendly, but giving more definition and ...

- asked by ThomasH (7 votes), answered by ThomasH (4 votes)

=====
Greatest hits from previous weeks:

=====
[Finding real roots of negative numbers (for example, $\sqrt[3]{-8}$)]\url{http://mathematica.stackexchange.com/questions/3886/fi

nding-real-roots-of-negative-numbers-for-example-sqrt3-8}

Say I want to quickly calculate $\sqrt[3]{-8}$, to which the most obvious solution is -2 .

When I input $\sqrt[3]{-8}$ or $\text{Power}[-8, 3^{-1}]$, Mathematica gives the result " $2 (-1)^{1/3}$ ". Not what I ...

- asked by jtbandes (31 votes), answered by Brett Champion (10 votes)

[Is it possible to export the equations from Mathematica to MATLAB?]\url{http://mathematica.stackexchange.com/questions/14035/is-it-possible-to-export-the-equations-from-mathematica-to-matlab}

Is it possible to export the output expressions from Mathematica computations (e.g., equations) in valid MATLAB syntax?

- asked by Seyhmus Gungoren (14 votes), answered by rm -rf (20 votes)

=====

Can you answer these?

=====

[Relative performance of the Julia language]\url{http://mathematica.stackexchange.com/questions/50391/relative-performance-of-the-julia-language}

I was just reviewing the Mathematica benchmark code linked from the Julia language home page <http://julialang.org/>. The stated goal of the benchmarks is to test the performance of specific algorithms, ...

- asked by TheDoctor (2 votes)

[Help wanted in evaluating an integral]\url{http://mathematica.stackexchange.com/questions/49319/help-wanted-in-evaluating-an-integral}

Trying to evaluate an integral. To be specific, I'm trying to find the expectation value of x^2 for the ground state of hydrogen. Here is the code I used:

```
FullSimplify[
Integrate[x^2/(Pi*a^3) ...
```

- asked by Sam (1 vote)

[Tooltip over a picture & creating complex forms]\url{http://mathematica.stackexchange.com/questions/49235/tooltip-over-a-picture-creating-complex-forms}

I have some picture like the one seen below. Now, I'm trying to create some tooltip with some descriptions when moving with the mouse over a body part e.g. "this is the head", "This is the left arm" ...

- asked by holistic (1 vote)

7.31 June 3, 2014

=====

Top new questions this week:

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[Is this the most effective and efficient programming style for prototyping (a ray tracer) in Mathematica?]\url{http://mathematica.stackexchange.com/questions/48675/is-this-the-most-effective-and-efficient-programming-style-for-prototyping-a-ra}

I am trying out Mathematica as a prototyping tool. As an initial

exercise I have put together a brute force ray tracer, with a view to using Mathematica's built in probability distribution functions ...

- asked by jrp (22 votes)

[Negative
probability?]\url{http://mathematica.stackexchange.com/questions/48814/negative-probability}

I am trying to get the sum of the squares of seven random variables, all uniformly distributed. This is what I tried.

Probability[
 $a^2 + b^2 + c^2 + d^2 + e^2 + f^2 + g^2 < 1$,
{a, b, c, d, e, ...

- asked by bobbym (18 votes), answered by m_goldberg (12 votes)

[Aligning two
lists]\url{http://mathematica.stackexchange.com/questions/48908/aligning-two-lists}

I have two lists, L1 and L2, each with a key and some data. Let us say the key is a person's name, a string, and the data follows. (To respond to rasher's query:) Let us also assume the lists are ...

- asked by Joseph O'Rourke (8 votes), answered by Mr.Wizard (4 votes)

[Any way I can solve this
integral?]\url{http://mathematica.stackexchange.com/questions/48766/any-way-i-can-solve-this-integral}

So, Mathematica can't solve it. Any workaround?


```

\begin{equation*}
\int_0^\pi \frac{1}{\sin\left(\frac{\theta}{2}\right)^\beta + 1}
\mathrm{d}\theta
\end{equation*}

```

The code is:

...

- asked by user1883163 (7 votes), answered by Vitaliy Kaurov (10 votes)

```

[Speed up
ContourPlot3D]\url{http://mathematica.stackexchange.com/questions/48773/spe
ed-up-contourplot3d}

```

I have two issues with the following code. (1) It executes too slowly. If I use "Speed" instead of "Quality" for PerformanceGoal, I get the speed but an undesirable delay in proper rendering of the ...

- asked by Stephen (7 votes), answered by Kuba (4 votes)

```

[Binarize turning image completely
black?]\url{http://mathematica.stackexchange.com/questions/48683/binarize-t
urning-image-completely-black}

```

Running Binarize (or EdgeDetect) on a filled black and white image is resulting in an all black image.

The image has the following color distribution (with most images points falling in either a ...

- asked by Peeter Joot (7 votes), answered by Jens (14 votes)

[Why does Equal["string", False] not evaluate to False?]\url{http://mathematica.stackexchange.com/questions/48851/why-does-equalstring-false-not-evaluate-to-false}

Why does Equal["string", False] not evaluate to False? I would have thought Mathematica could prove that these two things are not equal.

- asked by Fructose (6 votes), answered by eldo (5 votes)

=====
Greatest hits from previous weeks:
=====

[What Mathematica book to buy?]\url{http://mathematica.stackexchange.com/questions/5059/what-mathematica-book-to-buy}

I have used Mathematica for several years but at a pretty low level - piecing together built-in function inefficiently and fearing the sight of # and &'s when I see others use them (I never do). I ...

- asked by BeauGeste (28 votes), answered by David (42 votes)

[How to find all the localminima/maxima in a range]\url{http://mathematica.stackexchange.com/questions/5575/how-to-find-all-the-local-minima-maxima-in-a-range}

I want to find :

all local maxima in range
all local minima in range

>From those points I can interpolate and combine functions upper and lower boundary. What I am really interested in, is the ...

- asked by Margus (35 votes), answered by Daniel Lichtblau (37 votes)

=====
Can you answer these?
=====

[Suspend computation so it can be resumed even after the PC is rebooted]\url{http://mathematica.stackexchange.com/questions/48793/suspend-computation-so-it-can-be-resumed-even-after-the-pc-is-rebooted}

Sometimes a computation takes a long time. But when I sleep in the night, I want to shutdown my PC. Next morning when I wake, I want to start Mathematica and resume the computation.

If you are ...

- asked by user565739 (3 votes)

[Simulating a system of nonlinear ODEs?]\url{http://mathematica.stackexchange.com/questions/49004/simulating-a-system-of-nonlinear-odes}

I was trying to simulate a system of ODEs on Mathematica in an effort to try to understand how to muck around with Mathematica but for some reason the following lines of code do not yield any results; ...

- asked by Gadha007 (2 votes)

[Documentation build failed with Workbench]\url{http://mathematica.stackexchange.com/questions/48958/documentation-build-failed-with-workbench}

I'm starting to use Wolfram Workbench 2 to develop a Mathematica package. For the first time I tried "Documentation - Build" under the "Application Tools" but got fatal errors:

BUILD FAILED

...

- asked by Chris K (2 votes)

7.32 May 27 2014

=====

Top new questions this week:

=====

[Why won't Parallelize speed up my code?]

<<http://mathematica.stackexchange.com/questions/48295/why-wont-parallelize-speed-up-my>

What reasons are there that can cause parallelized Mathematica code not to run with full performance?

- asked by Szabolcs (18 votes), answered by Szabolcs (26 votes)

[High-quality RegionPlot3D for logical combinations of predicates]\url{<http://mathematica.stackexchange.com/questions/48486/high-quality-regionplot3d-for-logical-combinations-of-predicates>}

Unlike RegionPlot, RegionPlot3D copes poorly with logical combinations of predicates (&&, ||), which should result in sharp edges in the region to be plotted. Instead, these edges are usually ...

- asked by Rahul Narain (11 votes), answered by Simon Woods (10 votes)

[Correct way to integrate a certain function]\url{http://mathematica.stackexchange.com/questions/48437/correct-way-to-integrate-a-certain-function}

I want to integrate

\$\$

$$\int_0^{2\pi} dt_1 \frac{a + b \cos(t_1 - t_2)}{c + d \cos(t_1 - t_2)}$$

\$\$

where a, b, c, d, t_2 are real numbers and $c + d > 0$ & $0 \leq t_2 \leq 2\pi$.

I used ...

- asked by vik (9 votes), answered by Michael E2 (4 votes)

[How do I get Mathematica to return a function call unevaluated?]\url{http://mathematica.stackexchange.com/questions/48349/how-do-i-get-mathematica-to-return-a-function-call-unevaluated}

How do I get Mathematica to return a function call (conditionally) unevaluated? I expect this may use the slightly-mysterious Hold function.

As a toy example, suppose I want to define AlgebraicQ such ...

- asked by Charles (9 votes), answered by Szabolcs (9 votes)

[Why is plot legend unsafe?]\url{http://mathematica.stackexchange.com/questions/48291/why-is-plot-legend-unsafe}

Every time I open a notebook contains a legend, I get the message warning that it's not safe.

Why does this happen and how to fix it?

- asked by xslittlegrass (9 votes), answered by Szabolcs (12 votes)

[Faster way to compute the distance from a point to a surface in 3D]\url{http://mathematica.stackexchange.com/questions/48565/faster-way-to-compute-the-distance-from-a-point-to-a-surface-in-3d}

I am trying to compute the shortest distance between a point and a triangle in 3D

```
distance[point_, {p1_, p2_, p3_}] := Module[{p, s, t, sol},
p = s*p1 + (1 - s)*(t*p2 + (1 - t)*p3);
...

```

- asked by tintin (8 votes), answered by RunnyKine (15 votes)

[Does the syntax coloring I see indicate a real problem?]\url{http://mathematica.stackexchange.com/questions/48432/does-the-syntax-coloring-i-see-indicate-a-real-problem}

I need a behaviour provided by:

```
x = 2;
Block[{x = HoldForm[x]}, x]

```

x

FrontEnd marks this syntax as not quite correct.

It has not caused me any troubles so far so my question is: could it
...

- asked by Kuba (8 votes), answered by halirutan (6 votes)

=====

Greatest hits from previous weeks:

=====

[How many Christmas
gifts?]\url{http://mathematica.stackexchange.com/questions/39338/how-many-c
hristmas-gifts}

This question is based on the old song, The Twelve Days of Christmas

In a comment made on a recent question, Yves Klett remarked, "no
seasonal questions this year?" This reminded me of one I solved ...

- asked by m_goldberg (18 votes), answered by rm -rf (23 votes)

[How to generate a random
snowflake]\url{http://mathematica.stackexchange.com/questions/39361/how-to-
generate-a-random-snowflake}

'Tis the season...

And it's about time I posed my first question on Mathematica Stack
Exchange.

So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

- asked by Peltio (87 votes), answered by Silvia (117 votes)

=====

Can you answer these?

=====

[Diagonalization in

[parallel](http://mathematica.stackexchange.com/questions/48416/diagonalization-in-parallel)\url{http://mathematica.stackexchange.com/questions/48416/diagonalization-in-parallel}

I would like to diagonalize one unitary non-sparse matrix of size 12870 with complex number entries (not symbols, this is really a numerical problem). Is it possible to make eigensystem run in ...

- asked by lagoon (1 vote)

[Package
FiniteFields]\url{http://mathematica.stackexchange.com/questions/48379/package-finitefields}

In a Mathematica session, I evaluate:

```
Needs["FiniteFields`"];  
fld = GF[2];
```

Now, for example, I'd like to compute a^3+a^5 for $a \in \mathbb{Z}_2$. The result I'd like to have is 0, because in \mathbb{Z}_2 , ...

- asked by user14545 (1 vote)

[When to use indexed
variables]\url{http://mathematica.stackexchange.com/questions/48602/when-to-use-indexed-variables}

Still learning the fundamentals of the language I would like to ask you what advantages there might be in writing something like:

```
a[1] = 2;  
a[2] = 4;  
a[3] = "x";
```


It seems to me that it is always ...

- asked by eldo (3 votes)

7.33 May 20 2014

=====

Top new questions this week:

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[How can I get the color of overlapping disks to be equal in any order?]\url{http://mathematica.stackexchange.com/questions/47809/how-can-i-get-the-color-of-overlapping-disks-to-be-equal-in-any-order}

When Graphics is used, necessarily the objects come in order. This affects which ones obscure others. When Opacity is not 1, it also affects the color. I would like the color of overlaps to depend ...

- asked by Russ Lyons (19 votes), answered by Mr.Wizard (9 votes)

[Bug in mathematica analytic integration?]\url{http://mathematica.stackexchange.com/questions/48113/bug-in-mathematica-analytic-integration}

I found Mathematica provides me a wrong answer for a relatively simple analytically solvable integral:

Integrate[Exp[-I\Theta]/(1+b Cos[\Theta]),{\Theta,0,2\[\Pi]}
Assumptions -> b < 1 & & b ...

- asked by user14456 (14 votes), answered by Artes (14 votes)

[how to make a pie chart using custom image]\url{http://mathematica.stackexchange.com/questions/48078/how-to-make

-a-pie-chart-using-custom-image}

Can we make a pie chart using a costumed picture?

For example, in representing the 0.1 cent, I would like to use this image and cut a piece out, and make a clickable pie chart. Any suggestions are ...

- asked by xslittlegrass (13 votes), answered by belisarius (20 votes)

 [Undocumented use of Integrate: Integrating over regions]\url{http://mathematica.stackexchange.com/questions/48166/undocumented-use-of-integrate-integrating-over-regions}

I have come across a few questions asking about integrating over regions. And while the answers are impressive there should be a better more consistent way. So my question is, are there ways, ...

- asked by RunnyKine (12 votes), answered by RunnyKine (15 votes)

 [Rebuild a polygon so it doesn't self intersect]\url{http://mathematica.stackexchange.com/questions/48091/rebuild-a-polygon-so-it-doesnt-self-intersect}

If you consider the following Polygon:

```

coor = {{6, 0}, {6, 1}, {4, 0}, {5, 2}};
(* and coor = {{7, 2}, {7, 1}, {5, 2}, {6, 1}} *)
pol = Polygon@coor;
Graphics@pol

```

I would like to know if there is ...

- asked by Oska (10 votes), answered by Rahul Narain (10 votes)

[Exp is slower for some number ranges]\url{http://mathematica.stackexchange.com/questions/47982/exp-is-slower-for-some-number-ranges}

I get a hit on performance with the Exp function depending on the range of my inputs. for example, with:

```
w1 = RandomComplex[-20000 I, {10000000}];
Exp[w1]; // Timing
```

```
w2 = RandomComplex[-20 I, ...
```

- asked by user173743 (10 votes)

[Determine frequency of oscillations]\url{http://mathematica.stackexchange.com/questions/47917/determine-frequency-of-oscillations}

I am wondering how I could determine the frequency of oscillations of a differential model equation? How could I find the frequency from this example given in Mathematica Documentation:

```
s = ...
```

- asked by tarhawk (10 votes), answered by Daniel Lichtblau (15 votes)

=====

Greatest hits from previous weeks:

=====

[Generate a Unit Circle Trigonometry]\url{http://mathematica.stackexchange.com/questions/2456/generate-a-unit-circle-trigonometry}

Struggling often with Trigonometry I would like to have some code to

generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

- asked by 500 (13 votes), answered by Mark McClure (27 votes)

 [How do I plot coordinates (latitude and longitude pairs) on a geographic map?]\url{http://mathematica.stackexchange.com/questions/2076/how-do-i-plot-coordinates-latitude-and-longitude-pairs-on-a-geographic-map}

I'm attempting for the first time to create a map within Mathematica. In particular, I would like to take an output of points and plot them according to their lat/long values over a geographic map. I ...

- asked by Peter House (37 votes), answered by kguler (24 votes)

=====
 Can you answer these?
 =====

[How can I make sure that 3D plots have the exact same orientation and viewpoint?]\url{http://mathematica.stackexchange.com/questions/47996/how-can-i-make-sure-that-3d-plots-have-the-exact-same-orientation-and-viewpoint}

First off, I apologize that I can't come up with a simpler working example, but I only seem to have this problem with the larger examples.

I am trying to make animations, using functions like the ...

- asked by Jason B (5 votes)

 [Why setting PlotPoints make my 3d contour plot broken?]\url{http://mathematica.stackexchange.com/questions/47924/why-setti

ng-plotpoints-make-my-3d-contour-plot-broken}

I'm trying to make a iso surface plot from some data using ContourPlot3d. My data is a 3 dimension data with form like $\{x,y,f[x,y],\dots\}$. I first make this data into 4d by rotating it along the x ...

- asked by xslittlegrass (2 votes)

[What's the difference between variables with and without a subscript?]\url{http://mathematica.stackexchange.com/questions/48174/whats-the-difference-between-variables-with-and-without-a-subscript}

If I input $x = a + b$, the x , a and b are blue. When I hit Shift+Enter, the x turns black, indicating the kernel now knows this variable. But when I input $x_r = a + b$, and hit Shift+Enter, ...

- asked by user303446 (1 vote)

7.34 May 13, 2014

=====

Top new questions this week:

=====

[Format and TeXForm does not work as expected]\url{http://mathematica.stackexchange.com/questions/47417/format-and-texform-does-not-work-as-expected}

Recently, we had a nice question which brought up an issue that I believe is a bug. In the tutorial Defining Output Formats is an example at the end which doesn't make sense

This specifies the ...

- asked by halirutan (12 votes), answered by halirutan (4 votes)

[How to implement the Observer design pattern?]\url{http://mathematica.stackexchange.com/questions/47659/how-to-implement-the-observer-design-pattern}

As a programmer with a history with procedural languages, the Observer design pattern immediately springs to my mind when attacking certain class of problems, mostly UI/notifications related.

A ...

- asked by Fallible (11 votes), answered by Leonid Shifrin (9 votes)

[How should I reproduce this colorful swirling gif?]\url{http://mathematica.stackexchange.com/questions/47597/how-should-i-reproduce-this-colorful-swirling-gif}

Surfing on the web, I came upon this cool gif:

Does any one know how to reproduce this in Mathematica? I have some ideas myself, so I will try to answer this question as well.

- asked by Ali (10 votes), answered by Kuba (20 votes)

[How to create Line Chart with real third coordinates?]\url{http://mathematica.stackexchange.com/questions/47541/how-to-create-line-chart-with-real-third-coordinates}

I would like to generate something like 3D Line Chart in Excel. Like the

following figure

but including third coordinates.

Example

I have a set of 2D data combined with 1D spatial data.

`dxy = ...`

- asked by Vica (9 votes), answered by Yves Klett (2 votes)

[How can I tell how much memory is taken by an expression?]\url{http://mathematica.stackexchange.com/questions/47491/how-can-i-tell-how-much-memory-is-taken-by-an-expression}

ByteCount and LeafCount don't really work, as shown below.

Mathematica 9.0 .. on a 32 bit Windows machine.

```
f[n_] := Block[{k = f[n - 1]}, {k, k}]
f[0] = x
```

LeafCount[f[k]] for particular small ...

- asked by Richard Fateman (7 votes), answered by billisphere (5 votes)

[Simplify with Assumptions
Sqrt[(expr)^2]]\url{http://mathematica.stackexchange.com/questions/47548/simplify-with-assumptions-sqrtexpr2}

While trying to simplify expressions in the form `Sqrt[(expr)^2]` when

expr>0 I noticed a peculiar behavior that was not resolved with code from this Q&A.

Simplify[Sqrt[(x - y + a b c)^2], x - y ...

- asked by tchronis (6 votes), answered by Simon Woods (9 votes)

[How to use PlotRange -> All with ListLogLinearPlot?]\url{http://mathematica.stackexchange.com/questions/47393/how-to-use-plotrange-all-with-listloglinearplot}

I would like to generate a ListLogLinearPlot that automatically shows all the data points. However the option PlotRange -> All does not achieve this. Why does All not include all of the data in ...

- asked by Italianice (6 votes), answered by Alexey Popkov (3 votes)

=====

Greatest hits from previous weeks:

=====

[How to determine the center and radius of a circle given three points in 3D?]\url{http://mathematica.stackexchange.com/questions/16209/how-to-determine-the-center-and-radius-of-a-circle-given-three-points-in-3d}

I was wondering if anyone could give me a hand with this problem I have.

I have six points on a plane, and I am trying to determine if they form a circle or not.

I know that any three points in 2D ...

- asked by RedPotatoe (9 votes), answered by Mark McClure (15 votes)

[What is the best Mathematica tutorial for young people?]\url{http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people}

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (32 votes), answered by Vitaliy Kaurov (17 votes)

=====

Can you answer these?

=====

[Module in numerical model for NonlinearModelFit is slow and leaks memory]\url{http://mathematica.stackexchange.com/questions/47562/module-in-numerical-model-for-nonlinearmodelfit-is-slow-and-leaks-memory}

I am trying to make a NonlinearModelFit where the model is the result of a numerical calculation. My code works, but it is very slow and also seems to have a memory leak. I'd appreciate advice about ...

- asked by jkrich (3 votes)

[Quantities formatting problem]\url{http://mathematica.stackexchange.com/questions/47515/quantities-formatting-problem}

So I've developed this simple code

```
Mes /: MakeBoxes[Mes[mess_, error_, unit_],
form : (StandardForm | TraditionalForm) : StandardForm
] := RowBox[{
...

```

- asked by Ranza (2 votes)

[calling CUDA library functions]\url{http://mathematica.stackexchange.com/questions/47702/calling-cuda-library-functions}

Mathematica has some predefined CUDA functions, like CUDAMap, CUDAFourier, etc. My question is how can one call functions which are part of CUDA library but not part of predefined Mathematica ...

- asked by user1188038 (1 vote)

7.35 May 6, 2014

=====

Top new questions this week:

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[May the Fourth be with you]\url{http://mathematica.stackexchange.com/questions/47268/may-the-fourth-be-with-you}

Happy Star Wars day. I was playing around with the image manipulation functions in Mathematica in an attempt to recreate the Star Wars crawl. There's an HTML/CSS implementation which is in my ...

- asked by bobthechemist (18 votes), answered by Kuba (19 votes)

[Mathematica 9 cannot solve a difference equation that Mathematica 8 can]\url{http://mathematica.stackexchange.com/questions/47097/mathematica-9-cannot-solve-a-difference-equation-that-mathematica-8-can}

Consider

```
RSolve[{a[n + 1] == 2 a[n] + n (1 + 2^n), a[1] == 1}, a[n], n]
```

Mathematica 8 can solve this quickly, but Mathematica 9, even after being allowed to run for a long time, cannot give a ...

- asked by mathe (14 votes), answered by m_goldberg (3 votes)

[Taking Top K Occurrences]\url{http://mathematica.stackexchange.com/questions/47120/taking-top-k-occurrences}

Having millions of numbers in a list, I want to take top K occurrences. MMA Commonest is very slow so I write my own versions:

```
a=RandomInteger[{1,1000000},50000000];
```

...

- asked by Mohsen Afshin (12 votes), answered by Mr.Wizard (11 votes)

[Parametric Interpolation of 2D data]\url{http://mathematica.stackexchange.com/questions/47332/parametric-interpolation-of-2d-data}

I want to create an interpolation through the following 2dim data points:

```
data = {{22.78, 0.2431}, {22.06, 0.262}, {21.51, 0.2774}, {21.07, 0.2905}, {20.7, 0.302}, {20.38, 0.3121}, {20.1, ...
```

- asked by Martin (11 votes), answered by bobthechemist (11 votes)

[Importing an mx file into a context]\url{http://mathematica.stackexchange.com/questions/47110/importing-an-mx-file-into-a-context}

Consider the following simple code which dumps the global context:

```
var = 5;
DumpSave["test.mx", "Global["];
```

Now, in a new notebook, I would like to import var in another context.
Trying

...

- asked by Massimo Ortolano (10 votes), answered by Leonid Shifrin (11 votes)

[Faster "stuttering" accumulate?]\url{http://mathematica.stackexchange.com/questions/47296/faster-stuttering-accumulate}

Given some list of arbitrary precision numbers, e.g. (actual lists are 1M+ elements long):

```
test={0, 2, 2, 47839283, 2, 0, 0, 2, 0, 1, 2, 0}
```

I need to accumulate the list, but where a specified ...

- asked by rasher (9 votes), answered by Mr.Wizard (10 votes)

[Why is this semicolon in red?]\url{http://mathematica.stackexchange.com/questions/47113/why-is-this-}

```
semicolon-in-red}
```

I have a piece of code that works well, but when I put a semicolon after a plotting statement, the semicolon appears in red. What's the error?

- asked by Mika Ike (9 votes), answered by Kuba (12 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[Generate a Unit Circle
Trigonometry]\url{http://mathematica.stackexchange.com/questions/2456/gener
ate-a-unit-circle-trigonometry}
```

Struggling often with Trigonometry I would like to have some code to generate this Unit Circle Trigonometry. Would be of great help when I need to transform some data :

- asked by 500 (13 votes), answered by Mark McClure (27 votes)

```
-----
[Can Mathematica do symbolic linear
algebra?]\url{http://mathematica.stackexchange.com/questions/3242/can-mathe
matica-do-symbolic-linear-algebra}
```

For instance, is there some way I can say "let A and B be arbitrary real $m \times n$ and $k \times m$ matrices, `Simplify[Transpose[Transpose[A].Transpose[B]]]`" and Mathematica would simplify it to $B.A$?

...

- asked by nokie (22 votes), answered by helen (11 votes)

=====

Can you answer these?

=====

[Travel time sweet spot using: Mathematica and Google Maps API]\url{http://mathematica.stackexchange.com/questions/47198/travel-time-sweet-spot-using-mathematica-and-google-maps-api}

I want to use Mathematica to do some time minimisation calculations calling on Google Maps API for travel time data. I'm concerned with travel time, e.g. along roads (by car or walk) and not linear ...

- asked by PeteCog (1 vote)

[Graphics always rendered twice with SimpleFrontEnd example?]\url{http://mathematica.stackexchange.com/questions/47304/graphics-always-rendered-twice-with-simplefrontend-example}

I am looking at the Java SimpleFrontEnd example provided by Mathematica. Everything goes well except it always renders graphics twice.

Can anyone help me with this?

BTW: I am using version 9 under ...

- asked by Michael (2 votes)

[How to specify initial condition including integral equations in the case of the dirac

equations?]\url{http://mathematica.stackexchange.com/questions/47358/how-to-specify-initial-condition-including-integral-equations-in-the-case-of-the}

Hi I am trying to solve a system of differential equation with NDSolve. The problem is I have like 3\$ (maybe 5\$) boundary conditions, but only 2\$ differential equations. The equations to solve are ...

- asked by Terratoss (1 vote)

7.36 April 15, 2014

=====
 Top new questions this week:
 =====

[Programming paradigm change]\url{http://mathematica.stackexchange.com/questions/45829/programming-paradigm-change}

I'm new to Mathematica, I've been learning by myself, and, being a Java developer for some time, it makes it hard to adapt.

I've tried to solve a Reddit challenge, and I came up with this solution:

...

- asked by MHero (20 votes), answered by WReach (30 votes)

[C Code generated from Mathematica not working?]\url{http://mathematica.stackexchange.com/questions/45619/c-code-generated-from-mathematica-not-working}

I am a .Net developer. I'm trying to build a Visual C++ application using C code generated from Mathematica (by another person). I don't have Mathematica installed on my machine. When I try to compile ...

- asked by pag (10 votes)

[What kind of check does DirectoryQ exactly perform?]\url{http://mathematica.stackexchange.com/questions/45793/what-kind-of-check-does-directoryq-exactly-perform}

I'm using Mathematica 9.0.1 on Windows XP and my drive letters are assigned as follows: C: and D: are hard local disks, while E: is assigned to some removable media. Now, the situation is as follows

...

- asked by mitochondrial (9 votes), answered by librik (12 votes)

[What is the most efficient way to map a linked list?]\url{http://mathematica.stackexchange.com/questions/45593/what-is-the-most-efficient-way-to-map-a-linked-list}

In order to work with lists effectively using common recursive patterns from functional programming, it's often most convenient to work with the "linked list" representation, that looks like this:

...

- asked by Pillsy (8 votes), answered by Leonid Shifrin (9 votes)

[How to protect functions in a Mathematica Package?]\url{http://mathematica.stackexchange.com/questions/45773/how-to-protect-functions-in-a-mathematica-package}

I'm writing a Mathematica Package with many functions, but only two can be seen/public. I have:

```
BeginPackage["VolumeReserves`"];
```

```
startInterface::usage = "...";
```

```
detailRock::usage = "...";
```

```
(* ...
```

- asked by Lory Lory (8 votes), answered by halirutan (8 votes)

[How to change the appearance of a group opener?]\url{http://mathematica.stackexchange.com/questions/46082/how-to-change-the-appearance-of-a-group-opener}

I would like to change the GroupOpener appearance. In the present Mma design it is too small and can be missed by a reader unfamiliar with Mma. I know, how to change its color through the ...

- asked by Alexei Boulbitch (7 votes)

[Equivalence under common permutations]\url{http://mathematica.stackexchange.com/questions/45851/equivalence-under-common-permutations}

I have lists which consists of sublists of equal length. The outer list is regarded as a multiset (that is, permutations of the sublists don't matter, but repetitions do), but the order in the ...

- asked by celtschk (7 votes), answered by Leonid Shifrin (3 votes)

=====
 Greatest hits from previous weeks:
 =====

[Even Fibonacci numbers]\url{http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers}

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by Tangshutao (22 votes), answered by rcollyer (29 votes)

 [Problem with NonlinearModelFit]\url{http://mathematica.stackexchange.com/questions/2309/problem-with-nonlinearmodelfit}

I'm having trouble with a non-linear fit:

```
fit = NonlinearModelFit[data,
y0 + A Sin[\[Pi] (x - xc)/w], {y0, xc, A, w}, x]
```

where data has about 15 thousand points and looks like this:

The data ...

- asked by becko (14 votes), answered by Oleksandr R. (25 votes)

=====
 Can you answer these?
 =====

[Automatic replacing of [with
 []]\url{http://mathematica.stackexchange.com/questions/45992/automatic-repl
 acing-of-with}

I tried to modify the KeyEventTranslations.tr file in order to always
 place a closed bracket instead of an open bracket once I press [.
 However once I press [after the modification nothing happens ...

- asked by Max1 (6 votes)

[Setting an initial value for
 ListAnimate?]\url{http://mathematica.stackexchange.com/questions/45892/sett
 ing-an-initial-value-for-listanimate}

ListAnimate is fairly similar to Manipulate, but while Manipulate has a
 simple way to request an initial value for the manipulation parameter, I
 haven't found a way to tell ListAnimate to start with a ...

- asked by Steve (1 vote)

[How can I select two lists from a list of lists so that I receive the
 system of equations has only rational
 solutions?]\url{http://mathematica.stackexchange.com/questions/45877/how-ca
 n-i-select-two-lists-from-a-list-of-lists-so-that-i-receive-the-system-o
 f}

I want to make a sytem of equations has the form

```


$$\begin{cases} a_1x^2+b_1y^2 + c_1xy+d_1x + e_1y+3=0, \\ a_2x^2+b_2y^2 + c_2xy+d_2x + e_2y+3=0. \end{cases}$$


```

so that the given system of equations has ...

- asked by minthao_2011 (1 vote)

7.37 April 1, 2014

=====

Top new questions this week:

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[Creating sculptural forms using graphics primitives]\url{http://mathematica.stackexchange.com/questions/44858/creating-sculptural-forms-using-graphics-primitives}

This is a question based on this answer by halirutan.

Some amazing images can be created with this code, and I was wondering whether it was possible to extend the principle to different shapes.

I ...

- asked by martin (16 votes), answered by Szabolcs (15 votes)

[Making Monte Carlo simulation with ParallelTable]\url{http://mathematica.stackexchange.com/questions/44917/making-monte-carlo-simulation-with-paralleltable}

I would like to to MonteCarlo simulations of various regressions - basically, doing OLS under various conditions to test approaches.

On my macpro 2x 2.8 GHz quad core Xeon, 32 Gb RAM DDR2 @ 667 Mhz, ...

- asked by guylhem (14 votes), answered by Szabolcs (7 votes)

[Bug with SparseArray selector in Pick]\url{http://mathematica.stackexchange.com/questions/44868/bug-with-sparsearray-selector-in-pick}

I have created a notebook with two cells. This is the content of the first:

```
g = Graph[{1 \[UndirectedEdge] 2, 2 \[UndirectedEdge] 3, 1
\[UndirectedEdge] 3, 1 \[UndirectedEdge] 4, 4 \[UndirectedEdge] ...
```

- asked by Adam Reith (11 votes), answered by Istvan Zachar (8 votes)

[Image Processing: Edge detection of the tumor on tomogram. Calculation area of the tumor]\url{http://mathematica.stackexchange.com/questions/44809/image-processing-edge-detection}

The task is to identify the image region of the tumor.

I try to use example from documentation centre:

```
tom1 = Import["http://i.stack.imgur.com/mZ4fR.jpg"];
tumor = SelectComponents[
...

```

- asked by Alex Skudarev (10 votes), answered by halirutan (12 votes)

[Applying non-Affine transforms to 2D polygons with textures]\url{http://mathematica.stackexchange.com/questions/44863/applying-non-affine-transforms-to-2d-polygons-with-textures}

I am trying to create a vanishing point perspective transformation of 2D polygons, for example transforming the red polygon into the blue polygon:

```
p1 = Polygon[{{0, 0}, {1, 0}, {1, 1}, {0, 1}}];
p2 = ...
```

- asked by bobthechemist (8 votes), answered by Silvia (6 votes)

[How does Mathematica understand branchcuts of the complex logarithm?]\url{http://mathematica.stackexchange.com/questions/44767/how-does-mathematica-understand-branchcuts-of-the-complex-logarithm}

Say I have the function $f(x) = x \tanh(\pi x) \log(x^2 + a^2)$ where a is some positive real number. Then it seems to be me that Mathematica when given such a `Log[]` function implicitly puts a ...

- asked by user6818 (7 votes), answered by Jens (14 votes)

[Morphological Components with periodic boundary conditions]\url{http://mathematica.stackexchange.com/questions/44924/morphological-components-with-periodic-boundary-conditions}

I would like to find the connected(with periodic boundary conditions) components in a large binary matrix. What I've tried, and it does a fair job is:

```
MorphologicalComponents[RandomInteger[{0, 1}, ...
```

- asked by Ali (7 votes), answered by David Carraher (10 votes)

=====
Greatest hits from previous weeks:
=====

[Resources for beautiful Mathematica Stylesheets]\url{http://mathematica.stackexchange.com/questions/5846/resour

ces-for-beautiful-mathematica-stylesheets}

When the Wolfram Demonstrations were introduced and the Documentation-Center was redesigned, I remember it was the first time I thought someone had put some effort into creating a beautiful ...

- asked by halirutan (76 votes), answered by rm -rf (38 votes)

[What is the best Mathematica tutorial for young people?]\url{http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people}

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (31 votes), answered by Vitaliy Kaurov (17 votes)

=====

Can you answer these?

=====

[Challenge: Creating Compilable Permutations Function]\url{http://mathematica.stackexchange.com/questions/44949/challenge-creating-compilable-permutations-function}

As Mathematica's implemented Permuations function is not compilable I tried to write my very own Permutations implementation, called PermutationsNew, which I want to compile later on. Unfortunately ...

- asked by Wizard (1 vote)

[Notation, Format and Interpretation]\url{http://mathematica.stackexchange.com/questions/44986/no

tation-format-and-interpretation}

I am unclear on the exact relationship between Notation, Format and Interpretation.

Format[X] := Y seems similar to Notation[Y <= X] for formatting and Interpretation[X, Y] seems related to ...

- asked by Daniel Mahler (2 votes)

[Speed up MinimalPolynomial] \url{http://mathematica.stackexchange.com/questions/44763/speed-up-minimalpolynomial}

My Mathematica code runs slowly

MinimalPolynomial[Sqrt[2] + Sqrt[3]+ Sqrt[5]+ Sqrt[7]+ Sqrt[11]+ Sqrt[13], x]

runs slowly, but the Maple version

...

- asked by user13209 (1 vote)

7.38 March 25, 2014

=====

Top new questions this week:

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[How to make a curve selectable from a scanned image and convert it to a list of coordinates] \url{http://mathematica.stackexchange.com/questions/44355/how-to-make-a-curve-selectable-from-a-scanned-image-and-convert-it-to-a-list-of-c}

I have a scanned image (binary-ized):

Is there any way to reduce one of these curved lines (full or dotted) to a series of its coordinates (e.g., sampling interval of 0.01 on x-axis)?

I've read ...

- asked by Tough Kid (10 votes), answered by Alexei Boulbitch (11 votes)

[Alternating
sum]\url{http://mathematica.stackexchange.com/questions/44564/alternating-sum}

A frog is at the bottom of a 30 metre well. Each day it climbs 5 metres up the side, but it then slips back 3 metres each night. How long does it take to reach the top of the well?

Is there an easier ...

- asked by martin (7 votes), answered by Leonid Shifrin (5 votes)

[How to extract the edge from a set of
points]\url{http://mathematica.stackexchange.com/questions/44694/how-to-extract-the-edge-from-a-set-of-points}

I have an accumulation of points representing a body as you can see in the image below. From this data I want to generate a list of points or a curve, which is the envelope.

The first idea was a ...

- asked by zeckra (6 votes), answered by halirutan (4 votes)

[Map of Specific US States?
(Isolated)]\url{http://mathematica.stackexchange.com/questions/44505/map-of-specific-us-states-isolated}

My question here is fairly basic, and I'm sure I'm overlooking something basic. I know about CountryData for creating shapes of entire countries, and it works, to an extent; I can plot geographical ...

- asked by Smith W. (6 votes), answered by Pickett (5 votes)

[Exporting EPS figures with dashing from
ListPlot]\url{http://mathematica.stackexchange.com/questions/44560/exporting-eps-figures-with-dashing-from-listplot}

I am having difficulties exporting EPS figures.
If I use the LineLegend option to create a dashed or a dot-dashed line, it seems ok in Mathematica 9.0 e.g.:

But the problem came out when the ...

- asked by Qu8k (5 votes), answered by george2079 (6 votes)

[How to import a large (~50Mb) json file in
mathematica]\url{http://mathematica.stackexchange.com/questions/44671/how-to-import-a-large-50mb-json-file-in-mathematica}

I am trying to import a 46Mb json file into mathematica (which by the way I exported using mathematica) but its failing with the following

messages:

Java::pexcpn: A Java exception occurred after the ...

- asked by Trollkemada (5 votes), answered by Sjoerd C. de Vries (4 votes)

[How to select only NotebookObjects that are referring to ordinary notebooks? (not palettes etc.)]\url{http://mathematica.stackexchange.com/questions/44588/how-to-select-only-notebookobjects-that-are-referring-to-ordinary-notebooks-no}

There is of course function

Notebooks[]

But, unfortunately it hasn't got useful options in this context.

My question is how to pick Notebooks excluding:

Help,
Palettes,
Packages,
...

- asked by Kuba (5 votes), answered by Kuba (3 votes)

=====

Greatest hits from previous weeks:

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[What is the best Mathematica tutorial for young people?]\url{http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people}

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (31 votes), answered by Vitaliy Kaurov (17 votes)

 [Problem with NonlinearModelFit]\url{http://mathematica.stackexchange.com/questions/2309/problem-with-nonlinearmodelfit}

I'm having trouble with a non-linear fit:

```
fit = NonlinearModelFit[data,
y0 + A Sin[\[Pi] (x - xc)/w], {y0, xc, A, w}, x]
```

where data has about 15 thousand points and looks like this:

The data ...

- asked by becko (14 votes), answered by Oleksandr R. (23 votes)

=====
 Can you answer these?
 =====

[Maintaining postfix convention for directives in notebooks]\url{http://mathematica.stackexchange.com/questions/44606/maintaining-postfix-convention-for-directives-in-notebooks}

It seems to be a fairly common convention to write certain 'meta' functions in postfix form like

```
f[x] // Simplify
```

to keep the the mathematical content at the front separate from the various ...

- asked by Daniel Mahler (2 votes)

[Function behavior based on
Head]\url{http://mathematica.stackexchange.com/questions/44425/function-behavior-based-on-head}

I'm figuring how to implement a function behavior based on the Head of its argument.

I mean

```
Unprotect@Head;  
Head[p_[x]] := Kind;  
Protect@Head;  
function[h_] := 0;  
function[p_Kind] := 1;
```

```
Head[f[x]]
```

```
...
```

- asked by Fabio (1 vote)

[Controlling output of graphics, the role of ";" and code structure/formatting]\url{http://mathematica.stackexchange.com/questions/44630/controlling-output-of-graphics-the-role-of-and-code-structure-formatting}

"," is described under Compound Expression as a delimiter, such that only the output of the last item in the compound expression is given.

Situation:

1/ Print[] produces output whether followed by ...

- asked by Julian Moore (1 vote)

7.39 March 18, 2014

=====
 Top new questions this week:
 =====

[What does ImageSize -> 1 -> 1 mean?]\url{http://mathematica.stackexchange.com/questions/43820/what-does-imagesize-1-1-mean}

On the page

<http://www.wolfram.com/language/gallery/blur-faces-in-an-image/> the example code has ImageSize -> 1 -> 1. I am unfamiliar with this chaining of rules... What does it mean? Note I ...

- asked by PeterR (16 votes), answered by rm -rf (13 votes)

[Web Browser Screen Shot]\url{http://mathematica.stackexchange.com/questions/44099/web-browser-screen-shot}

I have Safari, Opera, Chrome, Firefox and IE installed how might a get a browser screen shot of a set of HTML code from inside Mathematica(for any of those browsers)?

(Image is optional)

The ...

- asked by Liam William (15 votes), answered by WReach (23 votes)

[What is the fastest way to extract a substring from a huge string?]\url{http://mathematica.stackexchange.com/questions/44175/what-is-the-fastest-way-to-extract-a-substring-from-a-huge-string}

I develop an algorithm to find the most common substrings of a given length n up to a certain distance l in front of a pattern p in a huge sequence S . E.g. I want to find the most common hexamers ...

- asked by g3kk0 (8 votes), answered by Leonid Shifrin (9 votes)

[Fast way of finding position of Interval containing an Integer]\url{http://mathematica.stackexchange.com/questions/43885/fast-way-of-finding-position-of-interval-containing-an-integer}

I have a large list (about 2.2 million) of pairs of integers. Each pair defines an Interval[{}]. Given some integer x , I need to find the position of the interval in my list that bounds x (or ...

- asked by user1375062 (8 votes), answered by Leonid Shifrin (12 votes)

[How to calculate the sum of $1/x$, where x is an integer not containing the digit 9 and
\url{http://mathematica.stackexchange.com/questions/43919/how-to-calculate-the-sum-of-1

My code is:

```
nonine[x_] := If[StringMatchQ[IntegerString[x], "*9*"], False, True];
```

```
SetAttribute[nonine, Listable];
```

```
tbl = Select[Range[10^2, 888], nonine[#] &];
```

```
Total[1.0/tbl]
```

got out of memory ...

- asked by user2218402 (7 votes), answered by Simon Woods (10 votes)

[Compile function which calls other functions to C]\url{http://mathematica.stackexchange.com/questions/44226/compile-function-which-calls-other-functions-to-c}

I have a function which calls other functions and I would like to compile it to C code. For example:

```
foo[p_] := 0.7 Exp[-p^2]
f[a_, n_] :=
Module[{s, p, i}, s = 0; p = a;
For[i = 0, i < n, ...
```

- asked by Danvil (6 votes), answered by halirutan (7 votes)

[Mathematica-To-MATLAB Dictionary!]\url{http://mathematica.stackexchange.com/questions/44223/mathematica-to-matlab-dictionary}

Is there a dictionary to translate Mathematica functions and commands to MATLAB?

- asked by Behzad (6 votes), answered by ndetermin (4 votes)

=====
 Greatest hits from previous weeks:
 =====

[Problem with
 NonlinearModelFit]\url{http://mathematica.stackexchange.com/questions/2309/
 problem-with-nonlinearmodelfit}

I'm having trouble with a non-linear fit:

```
fit = NonlinearModelFit[data,
y0 + A Sin[\[Pi] (x - xc)/w], {y0, xc, A, w}, x]
```

where data has about 15 thousand points and looks like this:

The data ...

- asked by becko (14 votes), answered by Oleksandr R. (23 votes)

[How to find the phase difference of two sampled sine
 waves?]\url{http://mathematica.stackexchange.com/questions/11046/how-to-fin
 d-the-phase-difference-of-two-sampled-sine-waves}

I'm trying to measure a phase difference between two Sine functions I've
 acquired with a computer. I'm uploading one of the .txt files with the
 data I'm working with here: txt file. To remove the ...

- asked by Juan (20 votes), answered by bill s (18 votes)

=====
 Can you answer these?
 =====

[RSolve: Errors while solving Partial Difference Equation]\url{http://mathematica.stackexchange.com/questions/44194/rsolve-errors-while-solving-partial-difference-equation}

I tried solving following partial difference equation in Mathematica by typing

```
RSolve[{C[n, k] == C[n-1, k] + C[n-1, k-1], C[n, 0] == 1, C[n, n] == 1},  
C[n, k], {n, k}]
```

but returns the following ...

- asked by user136040 (1 vote)

[How to apply an rule to factors matching a certain form]\url{http://mathematica.stackexchange.com/questions/43903/how-to-apply-an-rule-to-factors-matching-a-certain-form}

Suppose we have many expressions involving irrational ArcTan expressions (such as ArcTan[Sqrt[3],5]) along with other irrational factors (such as 1/Sqrt[2]).

I want to simplify all of these ...

- asked by Steve (1 vote)

[How to make noncommutative multiplication agree with commutative multiplication]\url{http://mathematica.stackexchange.com/questions/44157/how-to-make-noncommutative-multiplication-agree-with-commutative-multiplication}

I need a noncommutative multiplication that is

Associative

Distributive

$A^{**0}=0$, $A^{**1}=A$

Agrees with the commutative multiplication ($A^{**}(k B)=(k A)^{**}B=k (A^{**}B)$)

I have found a code

...

- asked by 8k14 (1 vote)

7.40 March 11, 2014

=====

Top new questions this week:

=====

[Most influential and/or disrupting features introduced with new versions of Mathematica]\url{http://mathematica.stackexchange.com/questions/43631/most-influential-and-or-disrupting-features-introduced-with-new-versions-of-math}

This is something that has been bugging me for ages.

With every upgrade, Mathematica has added new functionalities and amended some of its bugs. In the process, though, some older functionality has ...

- asked by Peltio (11 votes), answered by Mark Adler (3 votes)

[Fast way to get positions of "boxed" array elements?]\url{http://mathematica.stackexchange.com/questions/43557/fast-way-to-get-positions-of-boxed-array-elements}

Given a 2D array (arbitrary numeric / evaluates to numeric elements, simplified for examples, and can be arbitrary dimensions so long as the operation makes sense, I'm working with 2K X 2K in my ...

- asked by rasher (9 votes), answered by rasher (6 votes)

[Drop selection of columns from a ragged array]\url{http://mathematica.stackexchange.com/questions/43785/drop-selection-of-columns-from-a-ragged-array}

I have an application where I need to drop some arbitrary list of columns from a ragged array (where of course the shortest array rows have at least all the specified columns).

E.g., given a ragged ...

- asked by rasher (8 votes), answered by Mr.Wizard (6 votes)

[How to match a cyclically repeating sequence?]\url{http://mathematica.stackexchange.com/questions/43801/how-to-match-a-cyclically-repeating-sequence}

I have run across several times recently where I must match a sequence that is cyclically repeating. For example, with the sequence,

Sequence[a, b, c]

how would I write a pattern that matched ...

- asked by rcollyer (7 votes), answered by rm -rf (3 votes)

[Is there a function which instantly tells you whether an element is part of a list?]\url{http://mathematica.stackexchange.com/questions/43541/is-there-a-function-which-instantly-tells-you-whether-an-element-is-part-of-a-li}

I have a very long list of numbers and I want to check whether there's a function (something that would look like `PartOfQ[element,list]`) that tells you immediately with a `True` or `False` as to whether ...

- asked by Aron (7 votes), answered by Szabolcs (7 votes)

[Suppress connection to Wolfram|Alpha when making unit conversions]\url{http://mathematica.stackexchange.com/questions/43515/suppress-connection-to-wolframalpha-when-making-unit-conversions}

I want to speed up calculations with unit conversions. I suspect primarily that some units evaluate from Wolfram|Alpha. Any way to prevent this automatically, so that Mathematica throws ...

- asked by denfromufa (7 votes), answered by `rm -rf` (5 votes)

[How to handle keyboard events for unselected item in CDF?]\url{http://mathematica.stackexchange.com/questions/43432/how-to-handle-keyboard-events-for-unselected-item-in-cdf}

How can I force the keyboard input to work for this cell without clicking on it after I evaluate or showing a blinking selection cursor? This is for running CDF games in a browser.

```
pos = {0, 0};  
...
```

- asked by Michael Hale (6 votes), answered by Michael Hale (3 votes)

=====
 Greatest hits from previous weeks:
 =====

[3D heatmap density
 plot]\url{http://mathematica.stackexchange.com/questions/17260/3d-heatmap-d
 ensity-plot}

I have a set of data that looks like $\{\{x_1, y_1, z_1\}, \{x_2, y_2, z_2\}, \dots\}$
 so it describes points in 3D space. I want to make a heatmap out of this
 data. So that points with a high density are shown as a ...

- asked by norty (25 votes), answered by PlatoManiac (27 votes)

 [Plotting the frequency spectrum of a data series using
 Fourier]\url{http://mathematica.stackexchange.com/questions/18082/plotting-
 the-frequency-spectrum-of-a-data-series-using-fourier}

```
testData = Table[N@Sin[500 x], {x, 0, 100}];
ListLinePlot[Abs[Fourier[testData]], PlotRange -&gt; Full]
```

Gives me

Which I do not expect because the Fourier Transform is
 FourierTransform[Sin[500 ...

- asked by Pickett (7 votes), answered by KennyColnago (8 votes)

=====
 Can you answer these?
 =====

[Fourier transformation of HeavisideTheta

functions]\url{http://mathematica.stackexchange.com/questions/43445/fourier-transformation-of-heavisidetheta-functions}

I want to find 2D-Fourier transformation of the function given below

```
f = HeavisideTheta[y1]*HeavisideTheta[y2 - y1]
```

For the purpose, I use built-in function in two ways as below,

...

- asked by user58226 (3 votes)

[Autocomplete from inside Module and SetDelayed]\url{http://mathematica.stackexchange.com/questions/43393/autocomplete-from-inside-module-and-setdelayed}

Autocomplete in Mathematica 9 offers suggestions from inside SetDelayed and Module. For example, after running:

```
func[thing1_, thing2_] := thing1 + thing2;
Module[{thing3},
thing3 = 10;
thing3 + 4
]
```

...

- asked by Italianice (1 vote)

[Slow mixture fitting when having ill-conditioned covariance matrices. How to make it faster?]\url{http://mathematica.stackexchange.com/questions/43592/slow-mixture-fitting-when-having-ill-conditioned-covariance-matrices-how-to-mak}

I'm using Mathematica 9.0 to fit multidimensional observations with a gaussian mixture. To do so I first adapted these steps to ensure that the mixture parameters are well defined (see ...

- asked by p-d (1 vote)

7.41 March 4, 2014

=====

Top new questions this week:

=====

[How can I add drop shadows and specular highlights to 2D graphics?]\url{http://mathematica.stackexchange.com/questions/43186/how-can-i-add-drop-shadows-and-specular-highlights-to-2d-graphics}

I thought I'd share some code in the form of a self-answered question, but other answers are of course welcome.

Drop shadows are a familiar visual effect, giving the impression of a graphical element ...

- asked by Simon Woods (26 votes), answered by Simon Woods (29 votes)

[Are greek symbols causing different evaluation?]\url{http://mathematica.stackexchange.com/questions/43108/are-greek-symbols-causing-different-evaluation}

I've updated today to Mathematica 9.0.1.0 from version 8 and found something that absolutely confuses me.

Let us define a piecewise function:

```
gr[x_, v1_, v2_, v3_, v4_, v5_] =
Piecewise[{{g, v1 ...
```

- asked by Mike (14 votes)

[How to make a function with its own options as well as passing options to other functions]\url{http://mathematica.stackexchange.com/questions/43088/how-to-make-a-function-with-its-own-options-as-well-as-passing-options-to-other}> }

I have a function with many of its own options, but I would also like to pass options to subfunctions using the FilterRules function. Here's a simple example:

```
Options[pfunc] = {"test" -&gt; True};
...
```

- asked by Jason B (11 votes), answered by rm -rf (8 votes)

[Why the Block command does not forget the \$ContextPath variable]\url{http://mathematica.stackexchange.com/questions/43137/why-the-block-command-does-not-forget-the-contextpath-variable}

I do not understand this behavior:

```
method[args_] :=
(* forget the context path *)
Block[{$ContextPath},
(* should given nothing, right? *)
Print["cpath=", $ContextPath];
...
```

- asked by zorank (11 votes), answered by Szabolcs (8 votes)

[Third argument of Compile]\url{http://mathematica.stackexchange.com/questions/43128/third-arg}

ument-of-compile}

In his last comment on this answer, halirutan shows an example in which the third argument of Compile does not have any effect. The example is as follows.

```
cfu = Compile[{}, Module[{y = {}}, ...
```

- asked by Jacob Akkerboom (11 votes), answered by halirutan (5 votes)

```
[Plot Matlab
icon]\url{http://mathematica.stackexchange.com/questions/43012/plot-matlab-
icon}
```

I started to explore this on a whim and hasn't succeeded yet Some introduction for the icon is found here but I can't understand it very well. (I admit that, though playing with NDSolve a lot, I ...

- asked by xzczd (8 votes), answered by episanty (10 votes)

```
[Why does Plot[Hold[x], {x,0,1}]
work?]\url{http://mathematica.stackexchange.com/questions/43318/why-does-pl
otholdx-x-0-1-work}
```

It appears that, counter to my expectation, all of these (and probably many others) seem to work fine:

```
Plot[Hold[x], {x, 0, 10}]
```

```
FindRoot[Hold[x^2 == 2], {x, 1}]
```

```
NMinimize[Hold[x^2], x]
```

I would ...

- asked by Szabolcs (8 votes), answered by Michael E2 (5 votes)

=====
 Greatest hits from previous weeks:
 =====

[Plotting the frequency spectrum of a data series using
 Fourier]\url{http://mathematica.stackexchange.com/questions/18082/plotting-
 the-frequency-spectrum-of-a-data-series-using-fourier}

```
testData = Table[N@Sin[500 x], {x, 0, 100}];
ListLinePlot[Abs[Fourier[testData]], PlotRange -> Full]
```

Gives me

Which I do not expect because the Fourier Transform is
 FourierTransform[Sin[500 ...

- asked by Pickett (7 votes), answered by KennyColnago (8 votes)

 [Get a "step by step" evaluation in
 Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-s-
 tep-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some
 functions; that's to say, outputting not only the result but all the
 stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (45 votes), answered by J.M. (41 votes)

=====
Can you answer these?
=====

[Is there a package or canonical way for writing test harnesses in Mathematica?]\url{http://mathematica.stackexchange.com/questions/43014/is-there-a-package-or-canonical-way-for-writing-test-harnesses-in-mathematica}

I've written a complicated function foo.1

I'd now like to simplify this function's code, and later enhance it with more features. With each change, however, I'd like to be confident that I'm not ...

- asked by acheong87 (2 votes)

[Young Tableaux Miscellanea]\url{http://mathematica.stackexchange.com/questions/43157/young-tableaux-miscellanea}

I have a problem which is mostly neatly described by using Young Tableaux. Mathematica seems to have these Tableaux built in, except that the Tableaux function is only in Combinatorica. When I ...

- asked by evanb (2 votes)

[Assign a value to a variable without using Set or SetDelayed?]\url{http://mathematica.stackexchange.com/questions/43306/assign-a-value-to-a-variable-without-using-set-or-setdelayed}

I suppose probably yes, but at the end I assume that internally mathematica has to use Set or SetDelayed. Am I right?

Background: I am developing a super simple phraser that takes a code description ...

- asked by zorank (1 vote)

7.42 February 25, 2014

=====

Top new questions this week:

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[Implementing a Beeswarm plot in
Mathematica]\url{http://mathematica.stackexchange.com/questions/42585/implementing-a-beeswarm-plot-in-mathematica}

I am looking for a Beeswarm plot implementation in Mathematica.

Consider the following data:

```
data = {RandomVariate[NormalDistribution[], 100],  
RandomVariate[NormalDistribution[], 100]};
```

Lets ...

- asked by Pam (16 votes), answered by Szabolcs (10 votes)

[Object differentiation in
image]\url{http://mathematica.stackexchange.com/questions/42809/object-differentiation-in-image}

After purchasing a box of alphabet pasta for the kids, I wondered if there was way to extract the frequency of appearance of letters in the box by taken a sample and the analyzing the picture.

i = ...

- asked by PatoCriollo (10 votes), answered by lalmei (2 votes)

[Why does \$Failed have attribute HoldAll?]\url{http://mathematica.stackexchange.com/questions/42531/why-does-failed-have-attribute-holdall}

Why does \$Failed have attribute HoldAll? Are there typical situations where \$Failed is returned as a head that must not evaluate further, or is this just a relic from Mathematica's early times?

...

- asked by Szabolcs (9 votes), answered by Leonid Shifrin (6 votes)

[When running Mathematica from a Linux terminal, how can I prevent a script from terminating upon logout?]\url{http://mathematica.stackexchange.com/questions/42838/when-running-mathematica-from-a-linux-terminal-how-can-i-prevent-a-script-from}

I am running Mathematica on a remote Linux cluster, by the terminal, using the math command. (I do not have access to a terminal GUI. For example, when I type the command mathematica, I get this ...

- asked by Andrew (8 votes), answered by Stefan (12 votes)

[Deleting quasi-duplicates from large list efficiently]\url{http://mathematica.stackexchange.com/questions/42599/deleting-quasi-duplicates-from-large-list-efficiently}

I have the need to remove "duplicates" from large (>10K members) lists, where a "duplicate" is either a verbatim duplication, or the element's

second entry exists as a first entry for some "earlier" ...

- asked by rasher (8 votes), answered by Mr.Wizard (9 votes)

[Export an image at 1000
dpi]\url{http://mathematica.stackexchange.com/questions/42519/export-an-ima
ge-at-1000-dpi}

I'm trying to export an image at 1000 dpi. The author guide of a lot of papers wants this resolution! Then I must to import this image in Word in a small box; let's say 7x4 cm. This is the code that I ...

- asked by Mary (8 votes), answered by Szabolcs (10 votes)

[Generating Gelfand-Tsetlin
patterns]\url{http://mathematica.stackexchange.com/questions/42745/generati
ng-gelfand-tsetlin-patterns}

I am doing some research on some combinatorial object called
GT-patterns.

They are generated from three parts of data.

Two integer, partitions (sequences of weakly decreasing numbers),
 $\lambda = \dots$

- asked by Paxinum (7 votes)

=====

Greatest hits from previous weeks:

=====

[How can I improve Mathematica's resolution on a macbook retina
display?]\url{http://mathematica.stackexchange.com/questions/18419/how-can-
i-improve-mathematicas-resolution-on-a-macbook-retina-display}

Mathematica looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (34 votes), answered by programming_historian (14 votes)

[How to draw a spring?]\url{http://mathematica.stackexchange.com/questions/37207/how-to-draw-a-spring}

I am new to Mathematica and have recently been exploring graphical animations. So I was experimenting with simple concepts in periodic motion and hence wondered how can I draw a simple spring? Is ...

- asked by David McHarg (21 votes), answered by belisarius (26 votes)

=====

Can you answer these?

=====

[Transform an expression to remove the singularity]\url{http://mathematica.stackexchange.com/questions/42634/transform-an-expression-to-remove-the-singularity}

I have the expression $\text{Sin}[c x]/c$. Clearly it is undefined at $c=0$, but that is merely a removable singularity, since
$$\frac{\sin(cx)}{c} = x \operatorname{sinc}(cx),$$

which is ...

- asked by Rahul Narain (4 votes)

[Highlighting Mathematica code in LaTeX document]\url{http://mathematica.stackexchange.com/questions/42793/highlighting-mathematica-code-in-latex-document}

I was thinking about the best way to include Mathematica code in a LaTeX document with a nice syntax highlighting.

I have tried the packages listings and minted (with pygments), which both claim to ...

- asked by Eckhard (5 votes)

[Is there a way to tell mathematica to minimize the number of multiplication in an expression? (Simplify and FullSimplify don't cut it)]\url{http://mathematica.stackexchange.com/questions/42611/is-there-a-way-to-tell-mathematica-to-minimize-the-number-of-multiplication-in-a}

I have an expression, here's a clip of it:

...LF (LG LQ Lsig² + 2 LQ Lsig RG Rl + LG LQ Rl² + Lsig² RG RQ +
2 LG Lsig Rl RQ + 2 LQ Lsig RG Rs + 2 LG LQ Rl Rs +
2 LG Lsig RQ Rs + LG ...

- asked by bwana (2 votes)

7.43 February 18, 2014

=====

Top new questions this week:

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[Highlight Pie in
PieChart]\url{http://mathematica.stackexchange.com/questions/42201/highlight-pie-in-piechart}

PieChart has the nice functionality of highlighting a single pie when you click on it. It is then sticking out a little.

See the following example:

```
PieChart[{1, 2, 3}]
```

Now, if I click on the ...

- asked by Markus Roellig (20 votes), answered by Simon Woods (20 votes)

[M9 performance regression for
Fold?]\url{http://mathematica.stackexchange.com/questions/42419/m9-performance-regression-for-fold}

I noticed an over 10x performance drop on Mathematica v9.0.1 (as Oleksandr R. commented, also v8) compared with v7.01 for this code:

```
SetSystemOptions["CatchMachineUnderflow" -> False];
```

...

- asked by Yi Wang (16 votes)

[Finding the intersection of a curve with an interpolation function]\url{http://mathematica.stackexchange.com/questions/42304/finding-the-intersection-of-a-curve-with-an-interpolation-function}

There are no issues trying to find the intersection points of two defined curves.

```
f[x_] := 2 (x - 1) (x - 1.5) (x - .5) (x + .5) (x + 1) (x + 1.5);
g[x_] := 0.4 x - 0.4;
Solve[f[x] == ...
```

- asked by PatoCriollo (13 votes), answered by Daniel Lichtblau (12 votes)

[How to find out what files are touched when Get is called?]\url{http://mathematica.stackexchange.com/questions/42453/how-to-find-out-what-files-are-touched-when-get-is-called}

Is there a way to capture all package files touched whenever a package is called via Get, Needs, Beginpackage or similar?

While FindFile["package'"] can point to the first file that is called, the ...

- asked by Istvan Zachar (11 votes), answered by Istvan Zachar (11 votes)

[Rearranging a List]\url{http://mathematica.stackexchange.com/questions/42219/rearranging-a-list}

I am trying to rearrange/sort a list i.e.

```
{{1,2},{10,140},{43,10},{1,140},{43,2}}
```

into

```
{1,2},{2,43},{43,10},{10,140},{140,1}}
```

or any cyclic permutation of it.
The numbers don't repeat more ...

- asked by lalmei (9 votes), answered by Leonid Shifrin (6 votes)

[What are the differences between library call back functions and
WolframCompileLibrary
macros?]\url{http://mathematica.stackexchange.com/questions/42409/what-are-
the-differences-between-library-call-back-functions-and-wolframcompilel>
)

I'm trying to use LibraryLink in Mathematica, and come across some
problems.

Consider if we have a MTensor m1 which contains a one dimensional double
array, and I want to get the data of that array. ...

- asked by xslittlegrass (8 votes), answered by halirutan (6 votes)

[How does PlotLegends actually work with
ListPlot3D?]\url{http://mathematica.stackexchange.com/questions/42262/how-d
oes-plotlegends-actually-work-with-listplot3d}

I'm sensing this might be a rookie mistake but normally I roll my own
legends but decided to try the built in legends for a ListPlot3D.
PlotLegends is listed as an option for ListPlot3D but curiously ...

- asked by Mike Honeychurch (8 votes), answered by rm -rf (10 votes)

=====
Greatest hits from previous weeks:
=====

[Finding all simple paths between two vertices in a graph]\url{http://mathematica.stackexchange.com/questions/25779/finding-all-simple-paths-between-two-vertices-in-a-graph}

There are built-in methods to find a shortest path between two vertices in a graph, and the question on finding all shortest paths between two vertices has gathered quite a bit of attention.

A path ...

- asked by mrm (9 votes), answered by trybik (8 votes)

[What Mathematica book to buy?]\url{http://mathematica.stackexchange.com/questions/5059/what-mathematica-book-to-buy}

I have used Mathematica for several years but at a pretty low level - piecing together built-in function inefficiently and fearing the sight of # and 's when I see others use them (I never do). I ...

- asked by BeauGeste (26 votes), answered by David (39 votes)

=====
Can you answer these?
=====

[How to extract a variable names (not values) from a list of transformation rules?]\url{http://mathematica.stackexchange.com/questions/42405/how-to-extract-a-variable-names-not-values-from-a-list-of-transformation-rules}

I am trying to extract variable names from a list of transformation rules mapping = {var1 -> 'val1', var2 -> 'val2' }. Variables var1 and var2 are already defined in my notebook:

```
var1 = ...
```

- asked by verse (1 vote)

[Establish connection with RLink and Rtools]\url{http://mathematica.stackexchange.com/questions/42408/establish-connection-with-rlink-and-rtools}

Has anyone gotten RLink to work with Rtools (or even tried)?
If so a simple step-by-step would be much appreciated !

When attempting to access any Rtools functionality through RLink I get:

The ...

- asked by David Ross (2 votes)

[NMinimize seems to call function with the same values multiple times]\url{http://mathematica.stackexchange.com/questions/42215/nminimize-seems-to-call-function-with-the-same-values-multiple-times}

I have to minimize a function where the evaluation of one parameter set takes very long (around 5sec) and discovered alongside, that NMinimize seems to call this function multiple times with the exact ...

- asked by Frederik Ziebell (3 votes)

7.44 February 11, 2014

=====

Top new questions this week:

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[A set of elements]\url{http://mathematica.stackexchange.com/questions/41753/a-set-of-elements}

I have a set of say 100 numbers $\{1,3,7,11,19,\dots,3971\}$. All elements are previously determined. I want to check whether 376 belongs to this set or not. what is the fastest way?

Thanks

- asked by Meqdad (9 votes), answered by Mr.Wizard (10 votes)

[Unwanted PlotMarkers appear at non-existent places]\url{http://mathematica.stackexchange.com/questions/41706/unwanted-plotmarkers-appear-at-non-existent-places}

In this simple code

```
ListPlot[Table[Sin[x], {x, 0, Pi, .1}], PlotRange -> {0, 0.5},
Joined -> True, PlotMarkers -> Automatic, ClippingStyle ->
None, Frame -> True]
```

We can see that ...

- asked by saturasl (9 votes), answered by Coolwater (9 votes)

[Find positions of items in a list based on neighbours]\url{http://mathematica.stackexchange.com/questions/41937/find-positions-of-items-in-a-list-based-on-neighbours}

How can I select items from a list where the selection criterion depends on the neighbouring items?

For example select all indices where a change has occurred with respect to the previous element in ...

- asked by Danvil (8 votes), answered by Simon Woods (14 votes)

[How to run mathematica scripts without initializing the kernel every time]\url{http://mathematica.stackexchange.com/questions/41742/how-to-run-mathematica-scripts-without-initializing-the-kernel-every-time}

I have written a Mathematica script that is to be run periodically on a Raspberry Pi. The code takes about 3 seconds to execute if I test it in a CLI Mathematica session. However, when I execute the ...

- asked by shrx (7 votes), answered by shrx (1 vote)

[Get Coordinates 4 significant digits limitation]\url{http://mathematica.stackexchange.com/questions/42112/get-coordinates-4-significant-digits-limitation}

The tool "get coordinates" (clicking on a plot), seems to work with a fixed number of significant digits (4), in a way that we can quickly lose sensibility (the tool really becomes useless). The ...

- asked by P. Fonseca (6 votes), answered by chuy (2 votes)

[How to take derivative of parameterized

coordinate?}\url{http://mathematica.stackexchange.com/questions/41907/how-to-take-derivative-of-parameterized-coordinate}

Suppose I have a vector in \mathbb{R}^n but n is not known in advance. I want to be able to write functions which operate on the components of that vector, and then I'd like to be able to take ...

- asked by Tom (6 votes)

[How to randomly erode a 3D distribution of points with Mma 7.0?]\url{http://mathematica.stackexchange.com/questions/41801/how-to-randomly-erode-a-3d-distribution-of-points-with-mma-7-0}

Suppose we have a 3D distribution of points, like the spherical ball example below :

```
Ball[num_]:=Table[
{
#1 Sqrt[1-#2^2]Cos[#3],
#1 Sqrt[1-#2^2]Sin[#3],
#1 #2
}
```

```
&amp;[
...
```

- asked by Cham (6 votes), answered by chuy (6 votes)

=====

Greatest hits from previous weeks:

=====

[Marking points of intersection between two curves]\url{http://mathematica.stackexchange.com/questions/10472/marking-points-of-intersection-between-two-curves}

I'm trying to illustrate the solutions numerically and graphically for an equation such as $\text{Tan}[x] == x$. I think I did everything ok except I wanted to mark each intersection between $\text{Tan}[x]$ and x .

...

- asked by fiz (20 votes), answered by belisarius (30 votes)

[What are the most common pitfalls awaiting new users?]\url{http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users}

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (121 votes), answered by Michael E2 (64 votes)

=====

Can you answer these?

=====

[OpenCLLink specify grid size when calling function]\url{http://mathematica.stackexchange.com/questions/41992/opencllink-specify-grid-size-when-calling-function}

The Mathematica documentation (section "Details": <https://reference.wolfram.com/mathematica/OpenCLLink/ref/OpenCLFunction.html>) states that:

On launch, if the number of threads is not specified ...

- asked by user2224780 (1 vote)

[Import merged cells from
Excel]\url{http://mathematica.stackexchange.com/questions/42069/import-merged-cells-from-excel}

in a scientific paper I've found some data. I've saved it in Excel from a .pdf file.

But it was saved in a strange way: all data are in two cells in Excel.

In large merged cells.

Now when I try to ...

- asked by Mary (1 vote)

[Mysterious behavior of Precision for complex
arrays]\url{http://mathematica.stackexchange.com/questions/42075/mysterious-behavior-of-precision-for-complex-arrays}

Mysterious behavior of Precision:

```
{{1.0+I*0.0},{0.0+I*0.0}} // SetPrecision[#,30]& // Precision //  
Print;
```

0.

```
{{1.0},{0.0}} // SetPrecision[#,30]& // Precision // Print;
```

30.

Why is ...

- asked by John Sidles (3 votes)

7.45 February 4, 2014

=====
 Top new questions this week:
 =====

[Extracting angles from a simple picture]\url{http://mathematica.stackexchange.com/questions/41563/extracting-angles-from-a-simple-picture}

I'm not sure if this is even possible with Mathematica, but I want to extract the angles between all lines in this picture:

It consists of 12 lines, so I want a matrix with 144 entries. I ...

- asked by holistic (13 votes), answered by Kuba (14 votes)

[Shuffle product of two lists]\url{http://mathematica.stackexchange.com/questions/41614/shuffle-product-of-two-lists}

I want to do the following: I have two lists $\{a_1, \dots, a_n\}$, $\{b_1, \dots, b_n\}$ and I would like to build now all shuffles out of this. This means all unions of these lists while still keeping the individual ...

- asked by A friendly helper (12 votes), answered by Mr.Wizard (9 votes)

[Strange behavior when using Row with packed arrays]\url{http://mathematica.stackexchange.com/questions/41653/strange-be}

havior-when-using-row-with-packed-arrays}

Today I lost a lot of time with a strange behavior and I narrowed it down to this small piece of code:

```
a = {1, 2};
ToString@Row[DeleteDuplicates[a], ","]
ToString@Row[Union[a], ","]
```

"Row[{1, 2}, ...

- asked by Murta (11 votes), answered by Szabolcs (11 votes)

[Graphics'Mesh'FindIntersections[] fails to detect intersections]\url{http://mathematica.stackexchange.com/questions/41496/graphicsmeshfindintersections-fails-to-detect-intersections}

Graphics'Mesh'FindIntersections[] is an undocumented function for, well, detecting intersections very efficiently. Take a look:

```
i = Import"http://i.stack.imgur.com/PcWcz.png";
perim = ...
```

- asked by belisarius (10 votes)

[Checking through an expression]\url{http://mathematica.stackexchange.com/questions/41324/checking-through-an-expression}

I am writing a code that manipulates expressions that contains functions with an arbitrary number of arguments. An example expression is

```
expr = x f[a, b, c, d] - 4 f[b, a, d] + z f[] + f[a, b, d] - ...
```

- asked by QuantumDot (7 votes), answered by Artes (5 votes)

 [LengthWhile until first
 duplication]\url{http://mathematica.stackexchange.com/questions/41469/length-while-until-first-duplication}

I have the need to trim each of a large number of potentially very long lists (10^6+ elements) to the length where the last occurrence of any distinct element happens, or said another way, where the ...

- asked by rasher (7 votes), answered by rasher (2 votes)

 [Why do I get a different value when I change the order of
 integration?]\url{http://mathematica.stackexchange.com/questions/41454/why-do-i-get-a-different-value-when-i-change-the-order-of-integration}

I think the following two-dimensional integrals should be equal, since they both integrate the function over the half plane defined by $t > \tau$.

$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \mathrm{d}t \dots$

- asked by Jason B (7 votes), answered by Michael E2 (9 votes)

=====
 Greatest hits from previous weeks:
 =====

[How to get intersection values from a parametric
 graph?]\url{http://mathematica.stackexchange.com/questions/33947/how-to-get-intersection-values-from-a-parametric-graph}

I have this graphed:

```
ParametricPlot[{2.4*Cos[t] + 1.6*Cos[3 t/2], 2.4*Sin[t] - 1.6 Sin[3
t/2]}, {t, 0, 4*Pi}]
```

It is a star, and the lines cross each other twice in the third quadrant. I need to ...

- asked by guest (14 votes), answered by Artes (17 votes)

[Finding the best way to visualize rather complicated data]\url{http://mathematica.stackexchange.com/questions/33429/finding-the-best-way-to-visualize-rather-complicated-data}

I have the following data

```
data = {{7.5, 12.45, 12.45, 12.75, 12.75, 12.25, 12.25, 12.53, 12.53},
{8.5, 12.22, 12.22, 12.23, 12.23, 13, 13, 12.54, 12.54},
{9.5, 11.58, 11.53, 12.75, 13.48, 12.39, ...
```

- asked by Vaggelis_Z (12 votes), answered by Pinguin Dirk (10 votes)

=====

Can you answer these?

=====

[Load a Mathematica Notebook using .Net code]\url{http://mathematica.stackexchange.com/questions/41410/load-a-mathematica-notebook-using-net-code}

I have gotten a tremendous amount of information from the question posted at (Load a Mathematica Package via .Net code), which my application is very similar to. Specifically in that thread, the ...

- asked by Josh (1 vote)

[Trying to find the best Pade approximant for a given number of terms]\url{http://mathematica.stackexchange.com/questions/41620/trying-to-find-the-best-pade-approximant-for-a-given-number-of-terms}

Let suppose that I have a function $f[x]$ I want to approximate using a Pade expansion and that I decide what would be maximum number of terms to be used.

Is there any way with Mathematica to find ...

- asked by Claude Leibovici (1 vote)

[Estimation of vector autoregressive (VAR) process]\url{http://mathematica.stackexchange.com/questions/41330/estimation-of-vector-autoregressive-var-process}

To estimate 1-dimensional VAR process (which is AR process) you can easily use functions `EstimatedProcess` or `FindProcessParameters` like this:

```
sample = RandomFunction[ARProcess[ {.2, -.4}, .1], {1, 300}];
```

...

- asked by matt525252 (3 votes)

7.46 January 28, 2014

=====

Top new questions this week:

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[Why are numeric division and subtraction not handled better in Mathematica?]\url{http://mathematica.stackexchange.com/questions/40927/why-are-numeric-division-and-subtraction-not-handled-better-in-mathematica}

There is something that has been troubling me for a while. At least in version 7, the performance of a / b and $a - b$ is not equivalent to, and significantly inferior to, `Divide[a, b]` and `Subtract[a, ...`

- asked by Mr.Wizard (37 votes)

[Cancellation of common terms]\url{http://mathematica.stackexchange.com/questions/41070/cancellation-of-common-terms}

Can someone explain why the term A in case 2 does not get canceled out when case 1 does?

I use "9.0 for Microsoft Windows (64-bit) (January 25, 2013)"

```
case1 = A*(E^(-\[Lambda]) + \[Alpha]) == A;
Simplify[case1, A ...
```

- asked by user11946 (10 votes), answered by user11946 (2 votes)

[Plotting time data with axes labels and point labels]\url{http://mathematica.stackexchange.com/questions/41113/plotting-time-data-with-axes-labels-and-point-labels}

I am trying to create a set of commands to automatically create clinical lab value plots. Using time is my major issue here. It is hard to

dynamically reference the different point positions to ...

- asked by James Wine (10 votes), answered by ubpdqn (6 votes)

[Is there a guideline about when to end expressions with semicolons?]\url{http://mathematica.stackexchange.com/questions/41086/is-there-a-guideline-about-when-to-end-expressions-with-semicolons}

Whether for nested Ifs or within scoping constructs like Module and Block, I never know whether to end the final expression with a semicolon. I know the semicolon suppresses output, but, for example, ...

- asked by acheong87 (10 votes), answered by Mr.Wizard (13 votes)

[How to efficiently mask an image?]\url{http://mathematica.stackexchange.com/questions/41125/how-to-efficiently-mask-an-image}

I want to extract/cut out a part of an image. Since my mask is not rectangular I want to set pixels that are not masked to zero (black). My current approach is something like this:

```
img = ...
```

- asked by chromate (9 votes), answered by Pickett (11 votes)

[Why is this code slow and how could I speed it up?]\url{http://mathematica.stackexchange.com/questions/41185/why-is-this-code-slow-and-how-could-i-speed-it-up}

My goal is given an integer number to deduce if its digits increase (or remain the same) from left to right or not.

Example: \$1236, 123336\$ are both considered numbers with increasing digits, but ...

- asked by Zet (8 votes), answered by Kuba (13 votes)

[How is the mysterious Raw function used?]\url{http://mathematica.stackexchange.com/questions/40982/how-is-the-mysterious-raw-function-used}

I have never seen an example use for the mysterious Raw function:

Raw[h, "hexstring"]
constructs a raw data object with head h, and
with contents corresponding to the binary bit pattern ...

- asked by Mr.Wizard (8 votes)

=====
Greatest hits from previous weeks:
=====

[How to play with Facebook data inside Mathematica?]\url{http://mathematica.stackexchange.com/questions/11673/how-to-play-with-facebook-data-inside-mathematica}

I saw this post from Wolfram here and I would like to know how to import facebook data into Mathematica.

- asked by Murta (20 votes), answered by Murta (24 votes)

[Is there an open source implementation of

Mathematica-the-language?]\url{http://mathematica.stackexchange.com/questions/4454/is-there-an-open-source-implementation-of-mathematica-the-language}

I've seen questions before such as "What is the best open-source equivalent for Mathematica?", but that specific question (and that line of inquiry in general) cares more about the computer algebra ...

- asked by sblom (46 votes), answered by Simon (39 votes)

=====

Can you answer these?

=====

[Poor CUDALink performance, when calling a kernel multiple times]\url{http://mathematica.stackexchange.com/questions/41102/poor-cudalink-performance-when-calling-a-kernel-multiple-times}

When working on a project of mine I noticed that CUDALink shows very poor performance when calling CUDA kernels multiple times in a loop-construct.

To demonstrate this I put together this little ...

- asked by definitely.uncertain (6 votes)

[Does Mathematica compute free-form-input on Wolfram servers?]\url{http://mathematica.stackexchange.com/questions/41238/does-mathematica-compute-free-form-input-on-wolfram-servers}

I've just started to use mathematica and I'm using the free-form input alot. The computation time for simple problems seems to take alot of time and my CPU isn't really used at all. I first thought ...

- asked by qwertz (4 votes)

[Non linear model fit
 mathematica]\url{http://mathematica.stackexchange.com/questions/41017/non-linear-model-fit-mathematica}

I want to fit experimental data (temp,alpha) to the following equation for calculating k and Ea

$-\text{Log}[\alpha]^n = \text{function}(k, \text{Ea}, \text{temp})$

However i do not know exact value of "n". By this time i am ...

- asked by Farrukh Shehzad (1 vote)

7.47 January 21, 2014

=====
 Top new questions this week:
 =====

[Moving maximum
 function?]\url{http://mathematica.stackexchange.com/questions/40526/moving-maximum-function}

How can I construct a moving maximum function?

For example, if I have a list of 12 values: { 5, 6, 9, 3, 2, 6, 7, 8, 1, 1, 4, 7 } and I want to maximize over 3 values then the expected result would ...

- asked by Tyler Durden (11 votes), answered by rasher (16 votes)

[AndersonDarlingTest and DistributionFitTest Leaking

Memory]\url{http://mathematica.stackexchange.com/questions/40661/andersondarlingtest-and-distributionfittest-leaking-memory}

I believe AndersonDarlingTest and probably all other tests are keeping a copy of data somewhere and not freeing it:

Quit[]; (*Must be run in different cell*)

```
$HistoryLength = 0;
memdata = ...
```

- asked by Ajasja (8 votes), answered by Ajasja (2 votes)

[Faster list duplicate
'limiter']\url{http://mathematica.stackexchange.com/questions/40765/faster-list-duplicate-limiter}

Given some list, e.g., {5, 3, 2, 3, 1, 0, 1, 3, 5, 5, 4, 5, 1, 2, 5, 2, 2, 0, 1, 4}, I need to limit the duplicates, if any, to an arbitrarily chosen number. The excess duplicates are to be chopped ...

- asked by rasher (7 votes), answered by rasher (4 votes)

[When does a list contain only
ones?]\url{http://mathematica.stackexchange.com/questions/40670/when-does-a-list-contain-only-ones}

I am starting with a list of length n that contains all -1 's. For instance, when $n = 6$ the list is $\{-1, -1, -1, -1, -1, -1\}$. I pick a random integer from 1 to n and toggle the element by multiplying ...

- asked by bobbym (7 votes), answered by rasher (6 votes)

[Converting StringJoin to StringForm inside Hold]\url{http://mathematica.stackexchange.com/questions/40628/converting-stringjoin-to-stringform-inside-hold}

Let's say I have a piece of code:

```
Hold[{code1,
"asdad " &lt;&gt; ToString[testa] &lt;&gt; " adsd " &lt;&gt;
ToString[testb],
code2}] (*MWE ofc*)
```

which I want to convert. Each ...

- asked by Kuba (7 votes), answered by Leonid Shifrin (8 votes)

[Graph databases / Nosql with Mathematica]\url{http://mathematica.stackexchange.com/questions/40731/graph-databases-nosql-with-mathematica}

I am very new to mathematica but it looks like an interesting language and I would like to explore it for a future project to create a web search engine. It seems like it would be fairly well suited ...

- asked by user2433617 (6 votes), answered by Mike Honeychurch (2 votes)

[Counting adjacent elements in a Matrix?]\url{http://mathematica.stackexchange.com/questions/40593/counting-adjacent-elements-in-a-matrix}

To start, I have a situation where I have some matrix, for example

\$\$

A=\left[

```
\begin{matrix}
4&2&2&3&3\\
2&3&1&2&3\\
3&0&4&0&4\\
\dots

```

- asked by Alizter (6 votes), answered by Rojo (3 votes)

```
=====
Greatest hits from previous weeks:
=====
```

[Automatic e-mail/text message when a calculation has finished?]\url{http://mathematica.stackexchange.com/questions/30167/automatic-e-mail-text-message-when-a-calculation-has-finished}

Sometimes Mathematica takes quite a while to finish calculations and it would be convenient to be able to move away from the computer while it is working. I was wondering if there is any "clever" hack ...

- asked by Paco (36 votes), answered by rm -rf (41 votes)

```
-----
[How to check if a 2D point is in a
polygon?]\url{http://mathematica.stackexchange.com/questions/9405/how-to-check-if-a-2d-point-is-in-a-polygon}
```

Background: I use code from An Efficient Test For A Point To Be In A Convex Polygon Wolfram Demonstration to check if a point (mouse pointer) is in a (convex) polygon. Clearly this code fails for ...

- asked by ndroock1 (42 votes), answered by kguler (30 votes)

```
=====
Can you answer these?
=====
```


[Schedule programming problem with integer linear programming]\url{http://mathematica.stackexchange.com/questions/40739/schedule-programming-problem-with-integer-linear-programming}

I know how to model this question on paper, but I don't know how doing it in Mathematica.

Imagine , there is a university student who want to choose courses for this semester and he got the ...

- asked by DSaad (4 votes)

[Cannot compile OpenGL code in Mathematica (vc2010-windows 8.1)]\url{http://mathematica.stackexchange.com/questions/40705/cannot-compile-opengl-code-in-mathematica-vc2010-windows-8-1}

LinkError of OpenGL

My enviroment is windows 8.1 x64, Mathematica 9.0.1, opengl 1.1

```
targetDirectory = "E:\\Users\\Hyper\\Documents\\OpenGL";
sourceDirectory = ...
```

- asked by HyperGroups (1 vote)

[BubbleChart bubble scale depends on y position]\url{http://mathematica.stackexchange.com/questions/40576/bubblechart-bubble-scale-depends-on-y-position}

I noticed that the scaling of bubbles in the BubbleChart function depends on the y position of a bubble.

Compare these two examples.

```
BubbleChart[{{60.0, 20.0, 50.0}, {60.0, 90.0, 50.0}},
...

```

- asked by Jeff Lapidés (1 vote)

7.48 January 14, 2014

```
=====
Top new questions this week:
=====

```

```
[Generating visually pleasing circle
packs]\url{http://mathematica.stackexchange.com/questions/40334/generating-
visually-pleasing-circle-packs}

```

I would like to generate a circle pack that mimics this: (don't pay attention on numbers, and colors at all, at the moment I am interested in circle positions and radii only)

or this:

I am new ...

- asked by VividD (23 votes), answered by Istvan Zachar (30 votes)

```
-----

```

```
[Why do certain values in ArcSin not fully
evaluate?]\url{http://mathematica.stackexchange.com/questions/40080/why-do-
certain-values-in-arcsin-not-fully-evaluate}

```

This is a continuation of: Why do certain fractional values in

TriangleWave not evaluate?

The analysis by R.M and rasher revealed that problem to reduce to the behavior of:

ArcSin[Sin[Pi/ 10]]

...

- asked by Mr.Wizard (14 votes), answered by Simon Woods (14 votes)

[More efficient way of generating list of occurrence counts?]\url{http://mathematica.stackexchange.com/questions/40377/more-efficient-way-of-generating-list-of-occurrence-counts}

Given a list, e.g., target = {a, b, c, b, c, d, c, d, e, f, a, h, g}, I want to generate a list containing the occurrence count of the corresponding element of the target list, e.g., {1, 1, 1, 2, 2, ...

- asked by rasher (11 votes), answered by s0rce (7 votes)

[How to avoid an expensive subset of a Manipulate computation when dependent variables have not changed?]\url{http://mathematica.stackexchange.com/questions/40066/how-to-avoid-an-expensive-subset-of-a-manipulate-computation-when-dependent-variables-have-not-changed?}> }

I have a Manipulate where a portion of the calculation that ends up displayed is dependent on a subset of the Manipulate control variables. It would make sense to cache that portion of the ...

- asked by Peeter Joot (9 votes), answered by Nasser (8 votes)

[help to plot Poincare section for double pendulum]\url{http://mathematica.stackexchange.com/questions/40122/help-to-plot-poincare-section-for-double-pendulum}

I am reading a book about classical mechanics. In the chapter about chaos, it gives the simplified and scaled equations for double pendulum as

```


$$\frac{d}{dt} \left[ \begin{matrix} \alpha \\ \dots \end{matrix} \right]$$


```

- asked by user1285419 (8 votes), answered by belisarius (5 votes)

[Another difference between Set and Setdelayed. Evaluation shortcut?]\url{http://mathematica.stackexchange.com/questions/40182/another-difference-between-set-and-setdelayed-evaluation-shortcut}

A little while ago I wondered why

```
f[x_] = f[x]
```

gives an infinite iteration. I ended up discovering the following difference in evaluation between Set and SetDelayed with Evaluate.

```
count = 0;
...
```

- asked by Jacob Akkerboom (7 votes), answered by Jacob Akkerboom (1 vote)

[Arbitrary precision spline

interpolation]\url{http://mathematica.stackexchange.com/questions/40163/arbitrary-precision-spline-interpolation}

Current implementation of Interpolation does not allow arbitrary precision spline interpolation. Yu-Sung Chang say here that "it is not hard to implement it manually for arbitrary precision using ...

- asked by Alexey Popkov (7 votes), answered by belisarius (3 votes)

=====
Greatest hits from previous weeks:
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[How can I improve Mathematica's resolution on a macbook retina display?]\url{http://mathematica.stackexchange.com/questions/18419/how-can-i-improve-mathematicas-resolution-on-a-macbook-retina-display}

Mathematica looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (32 votes), answered by programming_historian (14 votes)

[Reconstruct text pages cut by shredder]\url{http://mathematica.stackexchange.com/questions/32612/reconstruct-text-pages-cut-by-shredder}

Q1: I have a page of printed text file, but it was cut by a paper

shredder (from top to bottom). You can download all the paper fragment here. There are some examples of them. How can I reconstruct ...

- asked by mm.Jang (35 votes), answered by Kuba (31 votes)

=====

Can you answer these?

=====

```
[InverseFunction
oddity]\url{http://mathematica.stackexchange.com/questions/40398/inversefunction-oddity}
```

```
InverseFunction[ConditionalExpression[#, 0 <= # <= 1] &];]
InverseFunction[ConditionalExpression[#, -1 <= # <= 1] &];]
```

The first line produces what I would expect:

...

- asked by Will Vousden (4 votes)

```
[How to Check Spelling strings written inside input
cells]\url{http://mathematica.stackexchange.com/questions/40199/how-to-check-spelling-strings-written-inside-input-cells}
```

Is it possible to check the spelling of strings? Strings are often used to show messages in my user interfaces, and I would like to have an automatic checking.

Methods that export all the strings to ...

- asked by P. Fonseca (4 votes)

[Biorthogonal Projector Construction in
Mathematica]\url{http://mathematica.stackexchange.com/questions/40294/biorthogonal-projector-construction-in-mathematica}

(Note: This was originally posted on SE Mathematics, but I'm reposting it here as suggested by rm-rf, as I'm translating the theorem into Mathematica code to test it)

I was trying to prove that the ...

- asked by DumpsterDoofus (2 votes)

7.49 January 7, 2014

=====
Top new questions this week:
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[Create a torus with a hexagonal mesh for
3D-printing]\url{http://mathematica.stackexchange.com/questions/39879/create-a-torus-with-a-hexagonal-mesh-for-3d-printing}

I am new to Mathematica, and I'm looking for a way to create patterns on the surface of 3D objects. One thing I have not been able to do is create a hexagonal mesh on a torus. What I would like to ...

- asked by Manna (24 votes), answered by rm -rf (34 votes)

[Benchmarking Mathematica performance on the Raspberry
Pi]\url{http://mathematica.stackexchange.com/questions/39684/benchmarking-mathematica-performance-on-the-raspberry-pi}

It is not surprising that Mathematica on the Raspberry Pi is slow and clunky. In Stephen Wolfram's words, the command line is "quite zippy" but the notebook interface is "a trifle sluggish by modern ...

- asked by bobthechemist (20 votes), answered by bobthechemist (22 votes)

[Fast
DensityPlot]\url{http://mathematica.stackexchange.com/questions/39826/fast-densityplot}

Is it possible to increase the performace the DensityPlot?

For example, let's try to plot this "flower"

```
f[x_, y_] := (x^2 + y^2) Exp[-x^2 - y^2] Sin[10 Sqrt[x^2 + y^2] + 10 ArcTan[x, y]]^4;
```

...

- asked by ybeltukov (16 votes), answered by ybeltukov (14 votes)

[How to plot ternary density plots?]\url{http://mathematica.stackexchange.com/questions/39733/how-to-plot-ternary-density-plots}

How can I get a ternary density plot just like the plots from OriginLab?

ContourPlot and DensityPlot seemingly can solve the [f,{x},{y}]-style, but cannot solve the [f,{x},{y},{z}]-style

- asked by Scott Wang (15 votes), answered by Michael E2 (17 votes)

[Get tab key to indent a block of

code]\url{http://mathematica.stackexchange.com/questions/39876/get-tab-key-to-indent-a-block-of-code}

Is there some way I can change Mathematica keyboard behavior so I could select a block of text/code, press tab, and the selection would be indented to right? Similarly, I would like shift+tab to ...

- asked by Murta (9 votes), answered by Leonid Shifrin (5 votes)

[Probability of the sum of the largest n samples]\url{http://mathematica.stackexchange.com/questions/39848/probability-of-the-sum-of-the-largest-n-samples}

15 numbers are randomly chosen from $U(0,1)$, what is the probability that the sum of largest four numbers is greater than 3.5?

With[{f = OrderDistribution[{UniformDistribution[], 15}, #] &},
...

- asked by bobbym (9 votes), answered by belisarius (9 votes)

[Create a new infix operator]\url{http://mathematica.stackexchange.com/questions/39696/create-a-new-infix-operator}

It is well known that the infix operator @@ is used as a short form of Apply.

For example, both `Apply[f,{a,b,c}]` and `f@@{a,b,c}` return `f[a,b,c]`

Also the infix operator @@@ is used as a short form ...

- asked by tchronis (8 votes), answered by Rojo (7 votes)

=====
 Greatest hits from previous weeks:
 =====

[How to find the phase difference of two sampled sine waves?]\url{http://mathematica.stackexchange.com/questions/11046/how-to-find-the-phase-difference-of-two-sampled-sine-waves}

I'm trying to measure a phase difference between two Sine functions I've acquired with a computer. I'm uploading one of the .txt files with the data I'm working with here: txt file. To remove the ...

- asked by Juan (19 votes), answered by bill s (18 votes)

 [Finding the best way to visualize rather complicated data]\url{http://mathematica.stackexchange.com/questions/33429/finding-the-best-way-to-visualize-rather-complicated-data}

I have the following data

```
data = {{7.5, 12.45, 12.45, 12.75, 12.75, 12.25, 12.25, 12.53, 12.53},
{8.5, 12.22, 12.22, 12.23, 12.23, 13, 13, 12.54, 12.54},
{9.5, 11.58, 11.53, 12.75, 13.48, 12.39, ...
```

- asked by Vaggelis_Z (12 votes), answered by Pinguin Dirk (10 votes)

=====
 Can you answer these?
 =====

[How can I take a function as data from a text field in order to plot it?]\url{http://mathematica.stackexchange.com/questions/39755/how-can-i-take-a-function-as-data-from-a-text-field-in-order-to-plot-it}

I would like to create a window where a student may enter an equation and, by clicking on a button, the function gets plotted.

(Quiero realizar una ventana en la cual el alumno tenga la opcion de
...

- asked by Jenny Ojeda (1 vote)

[Want explanation of when different looping constructs are appropriate]\url{http://mathematica.stackexchange.com/questions/39704/want-explanation-of-when-different-looping-constructs-are-appropriate}

For example when would you use a Do loop over a For loop? For which tasks would you use Map, Table, Scan, et cetera? I'm quite new to Mathematica and I don't really get what the advantages of any of ...

- asked by Aron (1 vote)

[Error messages from NDSolve]\url{http://mathematica.stackexchange.com/questions/39820/error-messages-from-ndsolve}

I am trying to solve a boundary value problem with NDSolve. The code is:

```
sol = Block[{M = 0.0},
NDSolve[{
f'''[x] + f[x]*f''[x] - f'[x]*f'[x] - M*f'[x] == 0,
f[0] == 0, f'[0] == 1, f'[15] ...
```

- asked by usman saeed (1 vote)

CHAPTER 8

YEAR 2013

8.1 December 31, 2013

=====
Top new questions this week:
=====

[How to generate a random snowflake]\url{http://mathematica.stackexchange.com/questions/39361/how-to-generate-a-random-snowflake}

'Tis the season...
And it's about time I posed my first question on Mathematica Stack Exchange.
So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

- asked by Peltio (79 votes), answered by Silvia (107 votes)

[Exporting extremely large images; arrays generated via TensorProduct use 5 times as much RAM as expected?]\url{http://mathematica.stackexchange.com/questions/39412/exporting-extremely-large-images-arrays-generated-via-tensorproduct-use-5-times}> }

I am generating plots of the roots of certain classes of polynomials, in the spirit of the multicolored visuals on the Wiki page on algebraic numbers. I've thus far been able to make some extremely ...

- asked by DumpsterDoofus (15 votes), answered by ybeltukov (11 votes)

[Plot discontinuous function with black and white disks marking discontinuities]\url{http://mathematica.stackexchange.com/questions/39445/plot-discontinuous-function-with-black-and-white-disks-marking-discontinuities}

Let's say I'd like to plot $\text{Sign}[x + 0.5]$:

`Plot[Sign[x + 0.5], {x, -1, 1}]`

Mathematica will give this:

This plot does not show very clearly the value of $\text{Sign}[x + 0.5]$ at $x = -0.5$: is it 1? is ...

- asked by user11426 (11 votes), answered by Michael E2 (15 votes)

[Zero-dimensional matrices]\url{http://mathematica.stackexchange.com/questions/39522/zero-dimensional-matrices}

In a recent Mathematica project, $(n \times 0)$ - and $(0 \times n)$ -dimensional matrices have suddenly become a frustratingly common edge case for me. For instance, consider the following two ...

- asked by Eric Peterson (10 votes), answered by Michael E2 (4 votes)

[Can I return lists with different dimensions from a compiled function?]\url{http://mathematica.stackexchange.com/questions/39360/can-i-return-lists-with-different-dimensions-from-a-compiled-function}

Sometimes I'll need several lists with different dimensions to be returned by a compiled function, but compiled function will fail if an irregular list contained:

(* The real case is of course much ...

- asked by xzczd (10 votes), answered by Michael E2 (3 votes)

[Output from Wolfram language in Python]\url{http://mathematica.stackexchange.com/questions/39546/output-from-wolfram-language-in-python}

I have a Python program which will run a script in the Wolfram language and then return to the main program. Is it possible to return values/variables to the main program?

This is the code in Python ...

- asked by Hamoudy (9 votes), answered by halirutan (14 votes)

[Is it Possible to change dashes into circles with Plot command?]\url{http://mathematica.stackexchange.com/questions/39394/is-it-possible-to-change-dashes-into-circles-with-plot-command}

Is it possible to change the Dashed Style of a curve into circles with Plot command ?

```
Plot[Cos[x], {x, 0, 2*Pi}, PlotStyle -&gt; Directive[Dashed, Thickness[0.005]]]
```

- asked by kamran (9 votes), answered by m_goldberg (4 votes)

=====
Greatest hits from previous weeks:
=====

[Are you interested in purchasing David Wagner's "Power programming with Mathematica"?]\url{http://mathematica.stackexchange.com/questions/16485/are-you-interested-in-purchasing-david-wagners-power-programming-with-mathematica}

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

- asked by Todd Allen (98 votes), answered by Todd Allen (126 votes)

[Pick elements of largest absolute value]\url{http://mathematica.stackexchange.com/questions/31385/pick-elements-of-largest-absolute-value}

For example, given

```
list = {{1, -3, -5}, {2, 1, 6}, {0, 2, 4}, {-9, 2, 6}}
```

should return:

```
{-5, 6, 4, -9}
```


Updated

I found a undocumented function called "Internal'MaxAbs",but it only accept two ...

- asked by expression (16 votes), answered by Simon Woods (20 votes)

=====

Can you answer these?

=====

[How to extract structured array data from DefineDLLFunction in Mathematica]\url{http://mathematica.stackexchange.com/questions/39637/how-to-extract-structured-array-data-from-definedllfunction-in-mathematica}

I want to use my Bluechip PCI-ADC acquisition card in Mathematica via his dynamic link library Bcdll32.dll; (used to access functions on my PCI data acquisition cards). My problem is the function ...

- asked by ROSU CONSTANTIN (3 votes)

[Return struct from function (with DownValues)]\url{http://mathematica.stackexchange.com/questions/39520/return-struct-from-function-with-downvalues}

In Mathematica there is a way to create struct-like data type:

```
struct[myField]=value
```

I want to return myStruct from a function:

```
getStruct[input_List] := Module[{struct},
(*populate ...
```

- asked by EvgenijM86 (3 votes)

[Setting bash environment within external call]\url{http://mathematica.stackexchange.com/questions/39509/setting-bash-environment-within-external-call}

I would like to run external command from Mathematica. For this I need to have bash environment configured via reading the content of ``${HOME}/.bashrc` file. When I execute the following code in ...

- asked by mmal (1 vote)

8.2 December 24, 2013

=====
Top new questions this week:
=====

[Any ideas on how to use the Region context?]\url{http://mathematica.stackexchange.com/questions/39184/any-ideas-on-how-to-use-the-region-context}

If you type

?Region*

you'll get:

which seems a bunch of interesting and not documented symbols.

Any idea (or experience) on how to use them?

Edit

By using our "collective spelunking" I ...

- asked by belisarius (23 votes), answered by m_goldberg (12 votes)

[How to create effect like Van Gogh's stroke brush?]\url{http://mathematica.stackexchange.com/questions/39003/how-to-create-effect-like-van-goghs-stroke-brush}

I need to apply Van Gogh's stroke brush effect to a random image

Take the following image as an example:

Thank you so much if you could help!

- asked by user10495 (15 votes), answered by Simon Woods (15 votes)

[Elegant high precision
'log1p'?]\url{http://mathematica.stackexchange.com/questions/39126/elegant-high-precision-log1p}

Sometimes it is hard to understand how numerical expressions are evaluated. I remember reading claims by Wolfram on how smart the Kernel is to evaluate expressions trees numerically by recognizing ...

- asked by alfC (12 votes), answered by Mark Adler (7 votes)

[Elegantly split a matrix into positive and negative parts?]\url{http://mathematica.stackexchange.com/questions/39113/elegantly-split-a-matrix-into-positive-and-negative-parts}

I have a matrix M of real components, and I want to split it into two matrices M^+ and M^- of the same dimensions as M , where M^+ contains the positive components of M (the remaining ...

- asked by becko (12 votes), answered by Yves Klett (20 votes)

[Is there a difference between `Divide[a,b]` and `a/b`?] [\url{http://mathematica.stackexchange.com/questions/39200/is-there-a-difference-between-dividea-b-and-a-b}](http://mathematica.stackexchange.com/questions/39200/is-there-a-difference-between-dividea-b-and-a-b)

In this comment it was asserted that `Divide[a,b]` and `a/b` are different, though the documentation indicates that they are the same. In particular, it was asserted that `a/b` is evaluated as `a * 1/b`, ...

- asked by Mark Adler (10 votes), answered by Szabolcs (10 votes)

[How many Christmas gifts?] [\url{http://mathematica.stackexchange.com/questions/39338/how-many-christmas-gifts}](http://mathematica.stackexchange.com/questions/39338/how-many-christmas-gifts)

This question is based on the old song, The Twelve Days of Christmas

In a comment made on a recent question, Yves Klett remarked, "no seasonal questions this year?" This reminded me of one I solved ...

- asked by m_goldberg (8 votes), answered by rm -rf (13 votes)

[Which `ColorFunction` should I use to get such a gradient of blue-cyan-green-yellow-orange-red?] [\url{http://mathematica.stackexchange.com/questions/39300/which-colorfunction-should-i-use-to-get-such-a-gradient-of-blue-cyan-green-yello}](http://mathematica.stackexchange.com/questions/39300/which-colorfunction-should-i-use-to-get-such-a-gradient-of-blue-cyan-green-yello)

I want to get the effect in the above Figure. Here is my code:

```
Plot3D[Log[
4*((1 + x)^2)*(0.0065^2)*Log[y]/(3*((1 - 2 x))^2*(0.0267^2)) + 1]/
Log[y], {x, 0.315, 0.45}, {y, 0, 1}, Mesh -&gt; ...
```

- asked by Scott Wang (8 votes), answered by rm -rf (12 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[List of compilable
functions]\url{http://mathematica.stackexchange.com/questions/1096/list-of-
compilable-functions}
```

Is there somewhere a list on the functions that Compile can compile, or the cases in which a particular function can be compiled that I haven't found?

I'd be glad even with a list of some of them ...

- asked by Rojo (58 votes), answered by Oleksandr R. (66 votes)

```
-----
```

```
[Can one identify the design patterns of
Mathematica?]\url{http://mathematica.stackexchange.com/questions/24988/can-
one-identify-the-design-patterns-of-mathematica}
```

... or are they unnecessary in such a high-level language?

I've been thinking about programming style, coding standards and the like quite a bit lately, the result of my current work on a mixed ...

- asked by Verbeia (65 votes), answered by Leonid Shifrin (50 votes)

=====
Can you answer these?
=====

[Efficient submatrix swaps for large sparse matrix]\url{http://mathematica.stackexchange.com/questions/39209/efficient-submatrix-swaps-for-large-sparse-matrix}

I am implementing the 'swap' algorithm for a binary matrix to generate matrix permutations that maintain row and column totals. My problem is that my matrices are large and sparse (e.g., 19774 x 942, ...

- asked by Gareth (1 vote)

[How to simplify expressions]\url{http://mathematica.stackexchange.com/questions/39341/how-to-simplify-expressions}

I read several similar posts but I have not found a solution yet. However, I think that my problem should be quite easy. So here we are.

Relations

$Mt = M1 + M2;$
 $x1 = -(M2/Mt)*R;$
 $x2 = R*(1 - M2/Mt);$
...

- asked by Vaggelis_Z (1 vote)

[CountryData -> \$Failed]\url{http://mathematica.stackexchange.com/questions/39110/countrydata-failed}

Today I started researching the "Four colours theorem" and to do so I need data, regions for example. I tried using the following line:

```
CountryData["Ukraine", "Regions"]
```

But the result:

...

- asked by Vitaliy Sergeyevich Barash (1 vote)

8.3 December 17, 2014

=====

Top new questions this week:

=====

[How to plot contours in the faces of a cube]\url{http://mathematica.stackexchange.com/questions/38656/how-to-plot-contours-in-the-faces-of-a-cube}

I'm trying to plot contours of a function $f[x,y,z]$ on the faces of a cube as the example below, which represents the domain of this function.

Is there a way to do it in Mathematica? The ...

- asked by RaphaelDavid (25 votes), answered by belisarius (10 votes)

[Creating new graphics primitive (EdgeForm, FaceForm)]\url{http://mathematica.stackexchange.com/questions/38753/creating-new-graphics-primitive-edgeform-faceform}

My question is strongly related to this question, nevertheless I would like to bring it to every ones attention. Lets say I want to create a new graphics primitive Boing which should look like this

...

- asked by halirutan (23 votes), answered by Simon Woods (18 votes)

[Graphics elements do not line up perfectly in exported PDFs]\url{http://mathematica.stackexchange.com/questions/38745/graphics-elements-do-not-line-up-perfectly-in-exported-pdfs}

Graphics elements do not always line up perfectly in exported PDFs. Take for example

```
Graphics[{Point[{0, 1}], Line[{{0, 0}, {0, 1}}]}, AspectRatio -&gt; Automatic]
```

It looks like this on screen:

...

- asked by Szabolcs (15 votes), answered by Szabolcs (13 votes)

[Drawing an arrow pointing at the "Enable Dynamics" button]\url{http://mathematica.stackexchange.com/questions/38692/drawing-an-arrow-pointing-at-the-enable-dynamics-button}

Sometimes my students are given Mathematica notebooks as part of an assignment, and asked to go through some demonstrations contained in the .nb file. A lot of times I get complaints that the "graphs ...

- asked by Steve D (11 votes), answered by Alexei Boulbitch (9 votes)

[ReplaceRepeated seemingly omits some rules]\url{http://mathematica.stackexchange.com/questions/38668/replacerepeated-seemingly-omits-some-rules}

Is there a simple way in Mathematica to prevent rule reordering? Let me give an example:

```
a -> b //. {b -> c, (x_ -> y_) -> (x -> Expand[y])}
(* a -> b *)
```

though

```
a -> b /. {b ...
```

- asked by jondaman21 (10 votes), answered by Mr.Wizard (6 votes)

[Formatting Excel Borders with .Net]\url{http://mathematica.stackexchange.com/questions/38891/formatting-excel-borders-with-net}

I have various tables generated in a Mathematica application and need to export this to MSEXcel formatted in a specific way.

The Excel formatting has to be generated by Mathematica. I am not ...

- asked by BlueMac (9 votes), answered by WReach (11 votes)

[Problem with numerical evaluation of analytically solved integral, solution way off]\url{http://mathematica.stackexchange.com/questions/38734/problem-with-numerical-evaluation-of-analytically-solved-integral-solution-way}

The following command in Version 9.0.1:

```
N[Integrate[x^50*Sin[x], {x, 0, 1}]]
```

gives 1.4615×10^{48} which is way off from the correct solution which is between 0 and 0.5 .

Interestingly ...

- asked by vonjd (9 votes), answered by Szabolcs (12 votes)

```
=====
Greatest hits from previous weeks:
=====
```

```
[ShowLegend
values]\url{http://mathematica.stackexchange.com/questions/6236/showlegend-
values}
```

How do I get ShowLegend to put the max and min values that a plot produces.

for example, when using ListDensityPlot, with PlotRange->Automatic, the plot can sometimes clip. How do I get ...

- asked by Andrew Spott (23 votes), answered by Jens (30 votes)

```
-----
```

```
[Get a "step by step" evaluation in
Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-s
tep-by-step-evaluation-in-mathematica}
```

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (43 votes), answered by J.M. (38 votes)

=====
 Can you answer these?
 =====

[What are the limits of the
 Prime-functions?]\url{http://mathematica.stackexchange.com/questions/38819/
 what-are-the-limits-of-the-prime-functions}

Will Prime and PrimePi test up to $3 * 10^{12}$? Where can I find the limits
 for these funtions? Also, what are the limits for PrimeOmega and
 PrimeNu? More generally, is there any documentation that gives ...

- asked by martin (2 votes)

 [Efficient storage of Kronecker sum of circulant matrices+diagonal
 matrix]\url{http://mathematica.stackexchange.com/questions/38901/efficient-
 storage-of-kronecker-sum-of-circulant-matricesdiagonal-matrix}

I have a square matrix of the form

$$M = D + \overset{N}{\underset{n=1}{\bigoplus}} R_n,$$

where R_n are circulant matrices, D is a diagonal matrix and
 \oplus is Kronecker sum. Its size is quite big, ...

- asked by Ruslan (2 votes)

 [What is available for editing Mathematica source code with
 Emacs?]\url{http://mathematica.stackexchange.com/questions/38838/what-is-av-
 ailable-for-editing-mathematica-source-code-with-emacs}

I can find several Emacs libraries for Mathematica, but I'm not aware of a clear favourite, a definitive list, or of a library which is actively maintained and developed. None of these appear to be in ...

- asked by Ian Hinder (6 votes)

8.4 December 10, 2013

=====
 Top new questions this week:
 =====

[Unexpected dots from
 Line]\url{http://mathematica.stackexchange.com/questions/38443/unexpected-dots-from-line}

I have noticed cases where Line produces dots in a graphics object when I think it shouldn't. The first of these is:

Line[{{0., 0.}}

The second is:

Line[{{0., 0.}, {0., 0.}}

Longer lists of ...

- asked by m_goldberg (14 votes), answered by ybeltukov (3 votes)

[How to replace an element in a list based on the value of the next element?]\url{http://mathematica.stackexchange.com/questions/38472/how-to-replace-an-element-in-a-list-based-on-the-value-of-the-next-element}

I use Mathematica a little bit. I try to understand it, but it is hard

I have a list of 5 numbers selected randomly from 0 and -1. I have to replace a 0 with a 1 when the 0 is followed by -1.

My ...

- asked by user11021 (14 votes), answered by ybeltukov (14 votes)

[How to pick increasing numbers from the list]\url{http://mathematica.stackexchange.com/questions/38325/how-to-pick-increasing-numbers-from-the-list}

How to pick increasing numbers from the list.

```
lst = {5, 3, 6, 2, 7, 4, 8};
```

out:

```
{5,6,7,8}
```

So many interesting answers, is it possible know the index of result elements or position of ...

- asked by Thomas (11 votes), answered by Simon Woods (6 votes)

[How to collect expressions from cells created by Print?]\url{http://mathematica.stackexchange.com/questions/38216/how-to-collect-expressions-from-cells-created-by-print}

I have a notebook where evaluation of a certain cell produced hundreds of adjacent output cells using Print. I need to create a list containing all expressions from those output cells as elements, and ...

- asked by Vladimir Reshetnikov (11 votes), answered by belisarius (17 votes)

 [How to constrain memory usage on HPC?]\url{http://mathematica.stackexchange.com/questions/38403/how-to-constrain-memory-usage-on-hpc}

I found the performance of built-in function MemoryConstrained is very poor. It stops the evaluation after the memory already exceeds greatly than the values I set.

There are several other questions ...

- asked by matheorem (9 votes)

 [Different results for integration using Mathematica and MATLAB]\url{http://mathematica.stackexchange.com/questions/38457/different-results-for-integration-using-mathematica-and-matlab}

I have the following integration:

$$\int_0^{\infty} \frac{e^{-z}}{\sqrt{z}} \left(1 - e^{-\frac{z}{b}}\right)^L \left(\frac{a}{a+c} + \frac{c}{a+c} \sqrt{z}\right) dz$$

I get different ...

- asked by barznjy (9 votes), answered by Peltio (8 votes)

 [Disconnected Frame/Axes in Plots]\url{http://mathematica.stackexchange.com/questions/38581/disconnected-frame-axes-in-plots}

Is it possible to have "Tufte" style figure axes? That is so that the axes do not need to connect or span the entire data range?

For an example of what I mean from the R's default histogram style:

...

- asked by Gabriel (8 votes), answered by Silvia (6 votes)

=====
 Greatest hits from previous weeks:
 =====

[How to determine the center and radius of a circle given three points in
 3D?]\url{http://mathematica.stackexchange.com/questions/16209/how-to-determine-the-center-and-radius-of-a-circle-given-three-points-in-3d}

I was wondering if anyone could give me a hand with this problem I have.

I have six points on a plane, and I am trying to determine if they form a circle or not.

I know that any three points in 2D ...

- asked by RedPotatoe (9 votes), answered by Mark McClure (15 votes)

 [Get a "step by step" evaluation in
 Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-step-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some functions; that's to say, outputting not only the result but all the

stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (43 votes), answered by J.M. (38 votes)

=====

Can you answer these?

=====

[Manipulating the pitch of a sound]\url{http://mathematica.stackexchange.com/questions/38423/manipulating-the-pitch-of-a-sound}

After reading Manipulating a continuous stream of sounds I have to ask about controlling the frequency of a Sin sound in a continuous manner, with a Play inside a Manipulate, for example. The result ...

- asked by Andrestand (3 votes)

[How to get vertices of a polytope given by equalities and inequalities?]\url{http://mathematica.stackexchange.com/questions/38414/how-to-get-vertices-of-a-polytope-given-by-equalities-and-inequalities}

I have a polytope given by some equalities and inequalities, how can I get all the vertices of the polytope?
If there's a way to deal with the one given by inequalities only, how can I reduce the ...

- asked by Jason (3 votes)

[Solar system simulation (n-body physics) with OpenCL]\url{http://mathematica.stackexchange.com/questions/38478/solar-system-simulation-n-body-physics-with-opencl}

I would like to simulate a n-body solar system in Mathematica. I have found the following example: ...

- asked by shrx (1 vote)

8.5 December 3, 2013

=====
 Top new questions this week:
 =====

[Can Mathematica determine part-of-speech for each word in a text?]\url{http://mathematica.stackexchange.com/questions/38053/can-mathematica-determine-part-of-speech-for-each-word-in-a-text}

I've found that WordData has a database of English words and their possible parts of speech. But some words are ambiguous, e.g. result can be a verb or a noun:

```
In[7]:= WordData["result", ...
```

- asked by F'x (16 votes), answered by ssch (12 votes)

[Whether Wolfram Mathematica suits well for doing app in it instead of C++]\url{http://mathematica.stackexchange.com/questions/37888/whether-wolfram-mathematica-suits-well-for-doing-app-in-it-instead-of-c}

At uni I have an yearly essay. I'm allowed to use any technology for implementing it. I've been coding it in C++ with Qt. I thought of about Wolfram Mathematica because I have some experience in it.

...

- asked by gekannt (14 votes), answered by Murta (27 votes)

[How to enumerate all possible binary associations?]\url{http://mathematica.stackexchange.com/questions/37869/how-to-enumerate-all-possible-binary-associations}

Suppose I have a list of symbols like:

```
{a,b,c,d}
```

I would like to enumerate all possible binary associations (combining symbols and/or sublists pairwise):

```
{{{a,b},c},d}  
{{a,b},{c,d}}  
{a,{b,{c,d}}}  
...
```

- asked by Everett You (12 votes), answered by ybeltukov (11 votes)

[How to get list of duplicates when using DeleteDuplicates?]\url{http://mathematica.stackexchange.com/questions/37936/how-to-get-list-of-duplicates-when-using-deleteduplicates}

This might be easy, but can't find a way to use DeleteDuplicates to get also list of the actual duplicates.

Example:

```
lstA = {1, 2, 4, 4, 6, 7, 8, 8};  
r = DeleteDuplicates[lstA]  
(* {1, 2, 4, 6, 7, ...
```

- asked by Nasser (11 votes), answered by Mr.Wizard (13 votes)

[Raspberry Pi GPIO operations with
Mathematica]\url{http://mathematica.stackexchange.com/questions/37926/raspb
erry-pi-gpio-operations-with-mathematica}

I started exploring GPIO operations on the RPi with Mathematica by following this brief tutorial which describes how to use DeviceWrite to cycle an LED on and off. A natural extension is to use ...

- asked by bobthechemist (11 votes), answered by Daniel Chisholm (6 votes)

[Reduce can't reduce an equation without appropriate
assumptions]\url{http://mathematica.stackexchange.com/questions/38118/reduc
e-cant-reduce-an-equation-without-appropriate-assumptions}

When the number of unknowns is three (x, y, z), Mathematica can solve it:

```
Reduce[Abs[x] + Abs[y] + Abs[z] == 1 && z != 0, {x, y, z},  
Reals, Backsubstitution -> True]
```

for four variables ...

- asked by expression (9 votes), answered by Artes (11 votes)

[Pasting monospaced text into Mathematica notebook destroys
alignment]\url{http://mathematica.stackexchange.com/questions/38073/pasting-
monospaced-text-into-mathematica-notebook-destroys-alignment}

I drew the little ASCII-art electronics schema below in vim.

When i try to paste it into a Mathematica notebook, with:

- A) A code cell
- B) A monospaced font (Courier New)

Mathematica insists on ...

- asked by blondiepassesby (9 votes), answered by WReach (11 votes)

=====
Greatest hits from previous weeks:
=====

[Mathematica9 linux version crash, how to fix
it?]\url{http://mathematica.stackexchange.com/questions/17163/mathematica9-
linux-version-crash-how-to-fix-it}

Ubuntu 12.04 x86_64 kernel 3.2.0-35-generic
Mathematica 9 linux version (x86_64) crashes with errors:

X Error of failed request: BadGC (invalid GC parameter)
Major opcode of failed request: ...

- asked by goodluck (10 votes), answered by goodluck (14 votes)

[Calling MATLAB from
Mathematica]\url{http://mathematica.stackexchange.com/questions/10231/calli
ng-matlab-from-mathematica}

How can I call MATLAB functions directly from Mathematica and transfer
data/variables between the two systems?

- asked by siva82kb (29 votes), answered by Szabolcs (35 votes)

=====
 Can you answer these?
 =====

[ParametricNDSolve and
 ProcessEquations]\url{http://mathematica.stackexchange.com/questions/37942/
 parametricndsolve-and-processequations}

I have a question regarding NDSolve'ProcessEquations and
 ParametricNDSolve.

When using the regular NDSolve we have the option to divide the
 integration into the three steps ProcessEquations, Iterate ...

- asked by jaclea (1 vote)

 [How to set the working precision globally? \$MinPrecision does not
 work]\url{http://mathematica.stackexchange.com/questions/38114/how-to-set-t
 he-working-precision-globally-minprecision-does-not-work}

I want to increase the precision globally to 50 at least, but
 \$MinPrecision does not work.

```
$MinPrecision = 50;
x = Sin[2.]
(* -&gt; 0.909297 *)
```

```
Precision[x]
(* -&gt; MachinePrecision *)
```

How to set ...

- asked by renphysics (3 votes)

[matrix with IF/THEN condition]\url{http://mathematica.stackexchange.com/questions/37905/matrix-with-if-then-condition}

How to generate all possible matrices with some conditions on the elements?

I need to make for given n all $n \times n$ matrices $A=(a_{ij})$ with three conditions:

I. $a_{ij}=+1$ or 0 or -1 .

...

- asked by aeiklmkv (1 vote)

8.6 November 26, 2013

=====
 Top new questions this week:
 =====

[Is Mathematica an Implementation of the Wolfram Language?]\url{http://mathematica.stackexchange.com/questions/37557/is-mathematica-an-implementation-of-the-wolfram-language}

I am trying to figure out what the announcement of the Wolfram Language means for Mathematica.

Is Mathematica an implementation of the Wolfram Language, or is it something else?

- asked by Eric Brown (21 votes)

[How to plot a certain surface? What is its parametric

equation?]\url{http://mathematica.stackexchange.com/questions/37698/how-to-plot-a-certain-surface-what-is-its-parametric-equation}

The surface show below is very beautiful; however, I don't know its function either as an implicit function or in parametric form.

Anyone have an idea about it and how to draw it with Mathematica?

- asked by LCFactorization (14 votes), answered by kirma (35 votes)

[CompiledFunction returns machine numbers smaller than \$MinMachineNumber]\url{http://mathematica.stackexchange.com/questions/37764/compiledfunction-returns-machine-numbers-smaller-than-minmachinenumber>)

When thinking on the workaround for this LogLogPlot bug suggested by halirutan I noticed that CompiledFunction actually can return machine numbers smaller than \$MinMachineNumber. Consider:

f = ...

- asked by Alexey Popkov (13 votes), answered by ybeltukov (12 votes)

[Laplace transform of $\frac{1-\cos(t)}{t}$]\url{http://mathematica.stackexchange.com/questions/37480/laplace-transform-of-frac1-cos-tt}

In the documentation, it states that

The Laplace transform of a function $f(t)$ is defined to be $\int_0^{\infty} f(t) e^{-s t} \, dt$.

But why can Mathematica not get the Laplace ...

- asked by xslittlegrass (13 votes), answered by Vladimir Reshetnikov (17 votes)

[Why is multidimensional Reverse slow?]\url{http://mathematica.stackexchange.com/questions/37777/why-is-multidimensional-reverse-slow}

I have found that multidimensional Reverse is ~10 times slower than exact `-1 ;; 1 ;; -1`:

```
n = 1000;
mat = RandomReal[1, {n, n}];

mat2 = Reverse[mat, 2]; // AbsoluteTiming
mat3 = mat[[All, -1 ;; 1 ;; ...
```

- asked by ybeltukov (12 votes), answered by Mr.Wizard (3 votes)

[How can I remove the singleton dimensions of an array?]\url{http://mathematica.stackexchange.com/questions/37656/how-can-i-remove-the-singleton-dimensions-of-an-array}

If I have an array A, for which `Dimensions[A]` is `{9, 9, 1, 1, 3, 4}`, how can I convert A' into an array with dimensions `{9, 9, 3, 4}`?

I think there is a built-in function for this, but I can't ...

- asked by LCFactorization (11 votes), answered by Simon Woods (10 votes)

[Concatenation of lists in a Fibonacci-like pattern]\url{http://mathematica.stackexchange.com/questions/37705/concatenation-of-lists-in-a-fibonacci-like-pattern}

I am trying to create a List of elements that follow the general pattern:

$$X_{n+1} = X_n X_{n-1}$$

where the operation on the right hand side is concatenation, i.e., joining.

I want to achieve the ...

- asked by user106492 (10 votes), answered by Simon Woods (11 votes)

=====
 Greatest hits from previous weeks:
 =====

[Mathematica9 linux version crash, how to fix it?]\url{http://mathematica.stackexchange.com/questions/17163/mathematica9-linux-version-crash-how-to-fix-it}

Ubuntu 12.04 x86_64 kernel 3.2.0-35-generic
 Mathematica 9 linux version (x86_64) crashes with errors:

X Error of failed request: BadGC (invalid GC parameter)
 Major opcode of failed request: ...

- asked by goodluck (9 votes), answered by goodluck (13 votes)

 [How do I save a variable or function definition to a file?]\url{http://mathematica.stackexchange.com/questions/1959/how-do-i-save}

e-a-variable-or-function-definition-to-a-file}

Is it possible to save a function which was created via Interpolation of some data in such a way that I can use this function in a new Mathematica session without repeated interpolation of the data?

...

- asked by partial81 (27 votes), answered by acl (24 votes)

=====

Can you answer these?

=====

[Plotting basin boundary]\url{http://mathematica.stackexchange.com/questions/37611/plotting-basin-boundary}

How to plot the basin boundary in Mathematica?
I have been trying to do this using the system

$$y''[t] == -R y'[t] + ((Y[1] - y[t]) / (\text{Sqrt}[(X[1] - x[t])^2 + (Y[1] - y[t])^2 + d^2])^3$$

...

- asked by HQH (1 vote)

[How do I use Greek characters in the WindowTitle option of CreateWindow?]\url{http://mathematica.stackexchange.com/questions/37635/how-do-i-use-greek-characters-in-the-windowtitle-option-of-createtime}

I am trying to write some exercises in Greek using CreateWindow. My problem is with using Greek characters in the option WindowTitle. For example, with

CreateWindow[DocumentNotebook[{a}, WindowTitle ...

- asked by kornaros (2 votes)

 [Need help fixing fit, eliminating the error of property values assuming unconstrained model, and correcting script for an implicit function]\url{http://mathematica.stackexchange.com/questions/37570/need-help-fixing-fit-eliminating-the-error-of-property-values-assuming-unconstr>
)

I fit some data with FindFit and NonlinearModelFit as well as obtained the parameter table and ANOVA table:

```
data = {{82.5, 5.75}, {75, 5.965}, {68.75, 6}, {63.45, 6.01}, {58.95, 6.03}, {55, 6.04}};
```

...

- asked by chy (2 votes)

8.7 November 19, 2013

=====
 Top new questions this week:
 =====

[Even Fibonacci numbers]\url{http://mathematica.stackexchange.com/questions/37266/even-fibonacci-numbers}

Today, I found the Euler Project. Problem #2 is

Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, ...

- asked by Tangshutao (19 votes), answered by rcollyer (28 votes)

[How to split list into disjoint lists?]\url{http://mathematica.stackexchange.com/questions/37249/how-to-split-list-into-disjoint-lists}

I wonder if there is any simple way to split a list into its disjoint sublists, e.g. from

```
list={{a,b},{e,f},{b,c},{c,d},{f,g,h}}
```

get a result

```
listdis={{{a,b},{b,c},{c,d}},{e,f},{f,g,h}},
```

so ...

- asked by krzysiekb (13 votes), answered by Leonid Shifrin (11 votes)

[How to draw a spring?]\url{http://mathematica.stackexchange.com/questions/37207/how-to-draw-a-spring}

I am new to Mathematica and have recently been exploring graphical animations. So I was experimenting with simple concepts in periodic motion and hence wondered how can I draw a simple spring? Is ...

- asked by David McHarg (13 votes), answered by belisarius (11 votes)

[How to programmatically remove menu items]\url{http://mathematica.stackexchange.com/questions/36923/how-to-programmatically-remove-menu-items}

I would like to do the opposite of what is described here. So rather than add a menu item I would like to programmatically remove one (or more). So given a knowledge of the structure of the menu *.tr ...

- asked by Mike Honeychurch (9 votes)

[Impact Crater Simulation]\url{http://mathematica.stackexchange.com/questions/37183/impact-crater-simulation}

I have been trying to model crater formation on a given planetary surface - 500 km^2 . The locations of impacts are random, however, if an impact is within 30 km of another, the ...

- asked by Benjamin L (8 votes), answered by belisarius (6 votes)

[What is wrong with my expression for compiling?]\url{http://mathematica.stackexchange.com/questions/37262/what-is-wrong-with-my-expression-for-compiling}

Following code was translated from a snippet matlab code. Without compiling it worked slowly. I want to compile it, but am getting a numerical error. How do I compile this in a correct way?

data = ...

- asked by expression (7 votes), answered by ybeltukov (10 votes)

[how to simplify large expression with lots of special functions in it (Bessely, Hypergeometric, MeijerG etc...)]\url{http://mathematica.stackexchange.com/questions/37289/how-to-simplify-large-expression-with-lots-of-special-functions-in-it-bessely}

I saw this DE in Maple forum. When solving it using Mathematica 9.01, even though the result was correct (both solutions gave the same numerical answer for some random values), Mathematica's answer ...

- asked by Nasser (7 votes), answered by ssch (1 vote)

=====
Greatest hits from previous weeks:
=====

[How can I improve Mathematica's resolution on a macbook retina display?]\url{http://mathematica.stackexchange.com/questions/18419/how-can-i-improve-mathematicas-resolution-on-a-macbook-retina-display}

Mathematica looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (28 votes), answered by programming_historian (11 votes)

[Where can I find examples of good Mathematica programming practice?]\url{http://mathematica.stackexchange.com/questions/18/where-can-

i-find-examples-of-good-mathematica-programming-practice}

I consider myself a pretty good Mathematica programmer, but I'm always looking out for ways to either improve my way of doing things in Mathematica, or to see if there's something nifty that I haven't ...

- asked by J.M. (234 votes), answered by Faysal Aberkane (220 votes)

=====

Can you answer these?

=====

[The number of real values assumed by combinations of complex roots of a decic]\url{http://mathematica.stackexchange.com/questions/36933/the-number-of-real-values-assumed-by-combinations-of-complex-roots-of-a-decic}

Define complex conjugate as the pair of complex numbers $a+bi, a-bi$. Assume you have 5 such pairs and they are the 10 roots x_i of a 10th-deg equation with integer coefficients. In general, how many ...

- asked by Tito Piezas III (1 vote)

[Odd colourization for FourierParameters. UI bug?]\url{http://mathematica.stackexchange.com/questions/37133/odd-colourization-for-fourierparameters-ui-bug}

The Mathematica UI colourizes the FourierParameters in the following

```
Clear[x, y]
g[x_, y_] = x^2 y ;
f[x_, y_] =
FourierSeries[x^2 y, {x, y}, {4, 4}, FourierParameters -> {1, 2 Pi}]
```

as in the ...

- asked by Peeter Joot (2 votes)

[Using FunctionExpand[] to evaluate symbolic derivatives]\url{http://mathematica.stackexchange.com/questions/37293/using-functionexpand-to-evaluate-symbolic-derivatives}

Some symbolic derivatives of certain special function are not expanded automatically, but FunctionExpand often helps to get a derivative-free closed form expression.

```
Derivative[1, 0][BesselJ][0, 1]
...
```

- asked by Vladimir Reshetnikov (5 votes)

8.8 November 12, 2013

=====

Top new questions this week:

=====

[Kernel inexplicably hangs if I define a pure function without suppressing output]\url{http://mathematica.stackexchange.com/questions/35629/kernel-inexplicably-hangs-if-i-define-a-pure-function-without-suppressing-output}

Save any unsaved work before trying as it may crash Mathematica and other programs

In v9.0.1.0 on OSX 10.8.5, if I start a new session and define two functions

```
f1P = Sin[#^Sin[Sqrt[Gamma[#]]]] ...
```

- asked by ggap (14 votes), answered by m_goldberg (4 votes)

[Bug in
RepeatedNull?]\url{http://mathematica.stackexchange.com/questions/36850/bug-in-repeatednull}

RepeatedNull appears to be buggy (version 8.0).

Define f as follows:

```
In[1]:= f@s:{h_@___...} := List @@@ s
```

f is intended to accept (possibly empty) List of non-atomic (possibly empty) expressions ...

- asked by Akater (13 votes), answered by m_goldberg (5 votes)

[Equivalent Nested Loop
Structure]\url{http://mathematica.stackexchange.com/questions/35560/equivalent-nested-loop-structure}

Consider the following examples:

```
Flatten @ Table[ f[a, b, c], {a, 1, 3}, {b, 1, 3}, {c, 1, 3}] ==  
f @@@ Tuples[ Range[3], 3]
```

```
Flatten @ Table[ If[ a != b != c, f[a, b, c], Unevaluated[]],  
...]
```

- asked by expression (12 votes), answered by Ray Koopman (2 votes)

[Finding the volume of a sphere using the Monte Carlo

algorithm]\url{http://mathematica.stackexchange.com/questions/35683/finding-the-volume-of-a-sphere-using-the-monte-carlo-algorithm}

I used the following code to find the volume of the sphere $x^2+y^2+z^2 = 1$ in the first octant:

```
McVolume[Num_] :=
Module[{hit, miss, index, x, y, z}, hit = 0; miss = 0;
```

```
For[index = 1, index ...
```

- asked by johny (12 votes), answered by Szabolcs (15 votes)

[Making code version aware]\url{http://mathematica.stackexchange.com/questions/36806/making-code-version-aware}

Mathics, a free Mathematica-compatible project has been recently launched. It provides a subset of the functions and capabilities of Mathematica at a slower pace.

This opens us the tantalizing ...

- asked by magma (11 votes), answered by magma (5 votes)

[Partitioning a list of numbers the Mathematica way]\url{http://mathematica.stackexchange.com/questions/36867/partitioning-a-list-of-numbers-the-mathematica-way}

I have two sorted lists, one list will be called the "fences" and the other the "values"

Fences could be: $\{1, 5, 9, 14\}$

Values could be $\{-1, 1, 3, 4, 6, 9, 10, 13, 14, 15\}$

I want to ...

- asked by muzzlator (10 votes), answered by Ray Koopman (18 votes)

 [Any way to make my equations look better, more Latex like?]\url{http://mathematica.stackexchange.com/questions/36697/any-way-to-make-my-equations-look-better-more-latex-like}

I find that the equations I write in Mathematica are not always publication quality. Here is a typical example:

If I copy as Latex, then I get the following code:

$\frac{\sum_{i=1}^N \frac{(k|k)}{k}}{k}$...

- asked by Tyler Durden (9 votes), answered by Mike Honeychurch (9 votes)

=====
 Greatest hits from previous weeks:
 =====

[How to manipulate 2D plots?]\url{http://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots}

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by Istvan Zachar (58 votes), answered by Istvan Zachar (56 votes)

[Programmatic approach to HDR photography with Mathematica image processing functions]\url{http://mathematica.stackexchange.com/questions/9342/programmatic-approach-to-hdr-photography-with-mathematica-image-processing-funct
> }

The High dynamic range imaging (HDR or HDRI) direction in photography and image processing became very popular recently. Besides obvious photo art applications (see examples), there are many great ...

- asked by Vitaliy Kaurov (44 votes), answered by Simon Woods (30 votes)

=====
Can you answer these?
=====

[How can I set constraints on parameters in NelderMeadMinimize package?]\url{http://mathematica.stackexchange.com/questions/35651/how-can-i-set-constraints-on-parameters-in-neldermeadadminimize-package}

I read about NelderMeadMinimize package. How can I set constraints on the parameters? For example I want to minimize an equation with 10 parameters such as {a1, a2,}. I want to put the condition ...

- asked by Soodeh Z. (1 vote)

[WhenEvent method with 3 conditions]\url{http://mathematica.stackexchange.com/questions/36869/whenevent-method-with-3-conditions}

I am trying to solve system of differential equations below

$x''(t) = -2.25\cos(1.5t) - x(t) - x'(t)$

$y''(t) = -1.125\cos(1.5t) - 4y(t) - y'(t)$

for $x > (1+y)$ then $z'(t) = x(t) - (1+y(t))$
 for $|x| < (1+y)$...

- asked by Dadan Ari Wibowo (1 vote)

[Caching data in Mathematica
 package]\url{http://mathematica.stackexchange.com/questions/36875/caching-d
 ata-in-mathematica-package}

Consider the following:

`m=Quantity[1,"meter"]`

If I run the package, it will return 1m

But when I load the package, the package is re-evaluated meaning, that
 internet is required.

Is it possible to ...

- asked by OskarNS (1 vote)

8.9 November 5, 2013

=====

Top new questions this week:

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[Incorrect result from
 Integrate]\url{http://mathematica.stackexchange.com/questions/35324/incorrect
 result-from-integrate}

I attempted to calculate the following integral:

```
Integrate[ Sqrt[x] Exp[-(x - a)^2], {x, 0, Infinity}, Assumptions -> a > 0]
```

```
1/(4 Sqrt[a]) I E^(-(a^2/2)) Pi( a^2 BesselI[-(1/4), a^2/2] - (1 + a^2)
...
```

- asked by DumpsterDoofus (12 votes), answered by Michael E2 (10 votes)

[Unpacked eigenvectors of complex matrices]\url{http://mathematica.stackexchange.com/questions/35266/unpacked-eigenvectors-of-complex-matrices}

I want to calculate eigenvectors of a Hermitian matrix. For example

```
$HistoryLength = 0;
n = 3000;
mat = # + ConjugateTranspose[#] & @ RandomComplex[{0, 1 + I}, {n, n}];
evec = Eigenvectors[mat];
```

...

- asked by ybeltukov (11 votes), answered by halirutan (8 votes)

[Wrong numerical value while exporting to a JSON string]\url{http://mathematica.stackexchange.com/questions/35165/wrong-numerical-value-while-exporting-to-a-json-string}

The following code:

```
ExportString[{"a" -> 2000000., "b" -> 0.000001}, "JSON"]
```

Gives the results

```
{"a" : 2.e60,  
"b" : 1.e-6}
```

The first one is obviously having a wrong numerical value. Also, ...

- asked by hwlau (11 votes), answered by hwlau (6 votes)

```
[Boundary effect of Graphics3D object  
Tube[]]\url{http://mathematica.stackexchange.com/questions/35331/boundary-  
effect-of-graphics3d-object-tube}
```

I draw a Graphics3D object of two tubes:

```
Graphics3D[{Tube[{{-0.2, -1, 0}, {-0.2, 1, 0}}, 0.05],  
Tube[{{0, 0, -1}, {0, 0, 1}}, 0.05]}, Boxed -&gt; False]
```

And I get this:

Now I want to have ...

- asked by 9527 (10 votes), answered by ybeltukov (10 votes)

```
[Monitoring progress of long  
calculations]\url{http://mathematica.stackexchange.com/questions/35139/moni  
toring-progress-of-long-calculations}
```

I've come upon a few methods of how to display "processing" information while Mathematica is running. But, from what I've understood, this only works in between lines of codes. Is it possible to ...

- asked by Gabriel (10 votes), answered by Simon Woods (8 votes)

[How to find a specific color in one picture?]\url{http://mathematica.stackexchange.com/questions/35132/how-to-find-a-specific-color-in-one-picture}

In a picture, there are many different colors. How can I just want to find the position of one color. In the following picture, if I would like to find the coordinates of the position of blue, how can ...

- asked by KathyLL (9 votes), answered by cormullion (12 votes)

[Is there a way to make the "Details" section of the documentation expand by default?]\url{http://mathematica.stackexchange.com/questions/35370/is-there-a-way-to-make-the-details-section-of-the-documentation-expand-by-defa}

By default, the Mathematica documentation opens with the "Details" section collapsed.

This is never what I'm looking for in fact, I've lost count of the times I've sought help on a feature and ...

- asked by raxacoricofallapatorius (8 votes)

=====

Greatest hits from previous weeks:

=====

[xkcd-style graphs]\url{http://mathematica.stackexchange.com/questions/11350/xkcd-style-graphs}

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amatya (392 votes), answered by Simon Woods (261 votes)

[Can one identify the design patterns of
Mathematica?]\url{http://mathematica.stackexchange.com/questions/24988/can-one-identify-the-design-patterns-of-mathematica}

... or are they unnecessary in such a high-level language?

I've been thinking about programming style, coding standards and the like quite a bit lately, the result of my current work on a mixed ...

- asked by Verbeia (52 votes), answered by Leonid Shifrin (43 votes)

=====
Can you answer these?
=====

[Problem in exporting a plot with background to
pdf]\url{http://mathematica.stackexchange.com/questions/35131/problem-in-exporting-a-plot-with-background-to-pdf}

Just wondering if someone could help me for this problem. I have utilised prolog to use a jpg image as the background of my plot in order to compare my results with a reference plot.
Although the ...

- asked by mak maak (1 vote)

[Series expansion: Taylor series takes huge amount of time]\url{http://mathematica.stackexchange.com/questions/35372/series-expansion-taylor-series-takes-huge-amount-of-time}

I'm working on a notebook, trying to expand the root of a cubic polynomial in Taylor series. When I type:

```
Series[(Sqrt[46656 a^2 - 864 (3 2^(1/3) a^(2/3) + 2 a B)^3] + 216
a)^(1/3) , {a, 0, 2}]
```

...

- asked by user10387 (2 votes)

[How to define tensor fields in Mathematica?]\url{http://mathematica.stackexchange.com/questions/35374/how-to-define-tensor-fields-in-mathematica}

I am wondering if there is any (neat) way to define tensor fields in Mathematica. Let me be more specific, using an example:

For instance a tensor W with 3 indices, which is anti symmetric in the first ...

- asked by user10389 (1 vote)

8.10 October 29, 2013

=====

Top new questions this week:

=====

[Nice formatting for the results of a dice game simulation]\url{http://mathematica.stackexchange.com/questions/34861/nice-f

ormatting-for-the-results-of-a-dice-game-simulation}

One of my Mathematica interests is in problems related to the formatting of output. Getting nice formatting from Mathematica is often frustrating, but occasionally Mathematica will delight me by ...

- asked by m_goldberg (22 votes), answered by ssch (16 votes)

[Export Code to Pseudocode?]\url{http://mathematica.stackexchange.com/questions/34997/export-code-to-pseudocode}

I'm writing a paper and all my code is in Mathematica. The snippets are mostly simple, and consist of loops, maps, variables, and conditionals. I'd like add it to my paper, however, not many academic ...

- asked by M.R. (13 votes)

[How to efficiently find moments of a multinormal distribution?]\url{http://mathematica.stackexchange.com/questions/34779/how-to-efficiently-find-moments-of-a-multinormal-distribution}

I have a multinormal distribution with covariance matrix σ and zero mean. I want to find moment

\$\$
E[x_1^{r_1}x_2^{r_2}\cdots x_n^{r_n}] = \text{?},
\$\$

Of course, there is a build-in function ...

- asked by ybeltukov (9 votes), answered by ybeltukov (9 votes)

[Problem importing a JCAMP-DX mass spectral file]\url{http://mathematica.stackexchange.com/questions/34624/problem-importing-a-jcamp-dx-mass-spectral-file}

I have some problems importing a JCAMP-DX EI-mass spectral file using Mathematica 9.

For example, if I download the mass spectrum of nonacosane in JCAMP format from NIST,

...

- asked by Tom Wenseleers (8 votes), answered by Sjoerd C. de Vries (8 votes)

[How to partition a list of numbers in two lists of numbers such that each lists elements sums up to the same number?]\url{http://mathematica.stackexchange.com/questions/34952/how-to-partition-a-list-of-numbers-in-two-lists-of-numbers-such-that-each-lists}

I have the following list of squares.

{1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225, 256}

Their sum is \$1496\$, I want to make two partitions with the given numbers and each ...

- asked by Gustavo Bandeira (7 votes), answered by Daniel Lichtblau (8 votes)

[finding anagrams]\url{http://mathematica.stackexchange.com/questions/34720/finding-anagrams}

What I'm trying to find are the 4 letter words in the mathematica dictionary that have the most anagrams and the amount of anagrams these

have each.

But I can't seem to find all the 4 letter words in ...

- asked by jas (7 votes), answered by rcollyer (7 votes)

[How can I scale a plot in vector graphic or PDF form?]\url{http://mathematica.stackexchange.com/questions/34909/how-can-i-scale-a-plot-in-vector-graphic-or-pdf-form}

I am not at all a computer graphics expert, but it seems that portable document format (PDF) files have a "native size," even though they may (and usually do!) contain vector graphics that can be ...

- asked by Andrew (6 votes), answered by Alexey Popkov (4 votes)

=====

Greatest hits from previous weeks:

=====

[Mathematica9 linux version crash, how to fix it?]\url{http://mathematica.stackexchange.com/questions/17163/mathematica9-linux-version-crash-how-to-fix-it}

Ubuntu 12.04 x86_64 kernel 3.2.0-35-generic
Mathematica 9 linux version (x86_64) crashes with errors:

X Error of failed request: BadGC (invalid GC parameter)
Major opcode of failed request: ...

- asked by goodluck (9 votes), answered by goodluck (13 votes)

[Finding all simple paths between two vertices in a

graph]\url{http://mathematica.stackexchange.com/questions/25779/finding-all-simple-paths-between-two-vertices-in-a-graph}

There are built-in methods to find a shortest path between two vertices in a graph, and the question on finding all shortest paths between two vertices has gathered quite a bit of attention.

A path ...

- asked by mrm (9 votes), answered by trybik (8 votes)

=====

Can you answer these?

=====

[Visualizing nested lists for easier human understanding]\url{http://mathematica.stackexchange.com/questions/34651/visualizing-nested-lists-for-easier-human-understanding}

When interacting with Mathematica, I often find myself staring blankly at waves of curly braces, trying to understand how data is organized hierarchically. For example, the beginning of the result to

...

- asked by duozmo (3 votes)

[how to load packages on local computer when using remote kernels]\url{http://mathematica.stackexchange.com/questions/34966/how-to-load-packages-on-local-computer-when-using-remote-kernels}

I usually works remotely using kernels on our hpc and front-end on my local laptop. This enable me do relatively large computation within my laptop(IP address of my laptop may change frequently). But ...

- asked by xslittlegrass (1 vote)

[Strange behaviour of
Internal'InheritedBlock]\url{http://mathematica.stackexchange.com/questions
/34698/strange-behaviour-of-internalinheritedblock}

I was going to post an answer for fast way to replace all zeros in the
matrix. I was even quite happy because timings were the same order of
magnitude as others.

The idea was to overwrite Identity:

...

- asked by Kuba (4 votes)

8.11 October 22, 2013

=====
Top new questions this week:
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[How to remap a fisheye
image?]\url{http://mathematica.stackexchange.com/questions/34264/how-to-rem
ap-a-fisheye-image}

I want to flatten a series of fisheye images by remapping them to a
rectilinear projection.

To achieve this, I need to be able to remap the pixels of the image
using fisheye correction formulas for ...

- asked by ErikP (10 votes), answered by Simon Woods (9 votes)

[Using With to scope over pure functions]\url{http://mathematica.stackexchange.com/questions/34345/using-with-to-scope-over-pure-functions}

Consider this example: given an option for a function func as "x" :> (a&);, how can one assign different values to a locally inside func?

```
a = False; (* global value of a *)
func[opt_] := ...
```

- asked by Istvan Zachar (10 votes), answered by Rojo (12 votes)

[How do I place a texture on an irregular 3D model?]\url{http://mathematica.stackexchange.com/questions/34144/how-do-i-place-a-texture-on-an-irregular-3d-model}

I'm trying to reproduce a textured head in Mathematica, and I'm using a kind of 'net' of a head which contains all the features on the face. The texture looks like this:

which is supposed to look ...

- asked by user10035 (9 votes), answered by Sjoerd C. de Vries (2 votes)

[Finding a point from a set of contours such that it is nearest to a given point]\url{http://mathematica.stackexchange.com/questions/34204/finding-a-point-from-a-set-of-contours-such-that-it-is-nearest-to-a-given-point}

I have several contour lines and one point. How can I find a point in one of those contour lines which is nearest to the given point?

(*Create the implicit curves*)

...

- asked by c_susetyo (9 votes), answered by PlatoManiac (11 votes)

[Organise a graph's vertices into levels]\url{http://mathematica.stackexchange.com/questions/34106/organise-a-graphs-vertices-into-levels}

I would like to organise a graph's vertices in levels. Consider

$g = \{$
 $0 \text{ -\> } 1, 1 \text{ -\> } 2, 2 \text{ -\> } 3, 0 \text{ -\> } 4, 0 \text{ -\> } 5, 2 \text{ -\> } 6, 2$
 $\text{-\> } 7, 8 \text{ -\> } 3, 4 \text{ -\> } 9, 5 \text{ -\> } 9,$
 $6 \text{ -\> } 9, 6 \text{ ...}$

- asked by (7 votes), answered by ybeltukov (6 votes)

[Limit of sequence of functions behaving strange]\url{http://mathematica.stackexchange.com/questions/34124/limit-of-sequence-of-functions-behaving-strange}

I'm trying to determine the limit of the sequence of functions

$$f_n(x) = \left(\frac{1}{\pi} \arctan(nx) + \frac{1}{2} \right)^n.$$

I define

$f[x_, n_] := (1/2 + \text{ArcTan}[n x]/\text{Pi})^n$

And enter

Limit[f[x, ...

- asked by Isak Kupersmidt (7 votes)

```
[Extract urls from
list]\url{http://mathematica.stackexchange.com/questions/34484/extract-urls
-from-list}
```

If I have a list like

```
list = {"my element 1 http://link.com", "http://link2.com my element 2"}
```

how do I get a list of the links inside each element?

Something like

```
StringCases[list, "http" ~~ ...
```

- asked by sul (6 votes), answered by Yves Klett (9 votes)

=====
Greatest hits from previous weeks:
=====

```
[Are you interested in purchasing David Wagner's "Power programming with
Mathematica?"]\url{http://mathematica.stackexchange.com/questions/16485/are
-you-interested-in-purchasing-david-wagners-power-programming-with-mathe
mat}
```

I recently contacted McGraw-Hill to see if they have a mechanism in place for printing out-of-print books that are still of interest. Specifically, I asked about "Power programming with Mathematica" ...

- asked by Todd Allen (92 votes), answered by Todd Allen (119 votes)

```
[How to create new "person
curve"?]\url{http://mathematica.stackexchange.com/questions/17704/how-to-cr
```

eate-new-person-curve}

Wolfram|Alpha has a whole collection of parametric curves that create images of famous people. To see them, enter `WolframAlpha["person curve"]` into a Mathematica notebook, or `person curve` into ...

- asked by Simon (41 votes), answered by Vitaliy Kaurov (14 votes)

=====

Can you answer these?

=====

[Exporting graphics to PDF results in destroyed fonts on Windows 8]\url{http://mathematica.stackexchange.com/questions/34303/exporting-graphics-to-pdf-results-in-destroyed-fonts-on-windows-8}

Executing

```
plot = Plot[x^2, {x, 0, 100}, PlotLabel -> "Plot"];
SetDirectory[NotebookDirectory[]];
Export["plot.pdf", plot, "PDF"];
```

results in

Is this a bug? OS is Windows 8, 64bit.

- asked by Frederik Ziebell (1 vote)

[TableHeading Lines Do Not Show Up]\url{http://mathematica.stackexchange.com/questions/34287/tableheading-lines-do-not-show-up}

For a list `list = {"a", "b", "c"}, {"d", "e"};` Table heading lines do not show up

```
TableForm[list, TableHeadings -&gt; Automatic]
```

But it works if the list `list = {"a", "b", "c"}, {"d", "e", ...`

- asked by Deco (2 votes)

[Syntax for

```
FrontEnd[SelectionSetStyle]\url{http://mathematica.stackexchange.com/questions/34297/syntax-for-frontendselectionsetstyle}
```

I know `FrontEnd[SelectionSetStyle]` is undocumented, but its name suggests it does what I need. What is its syntax?

I have already tried several variations of the following button on some selected code ...

- asked by Hector (2 votes)

8.12 October 15, 2013

=====

Top new questions this week:

=====

[Strip waste braces in nested

```
list]\url{http://mathematica.stackexchange.com/questions/33837/strip-waste-braces-in-nested-list}
```

I have nested lists wherein there are a lot of waste levels which looks like

```
l = {{{{{2, 2}}, 3}, 2, {{2, 33}}, 4, 5}}};
```

I would like to reduce it to something like

```
l = {{{2, 2}, 3}, 2, {2, 33}, ...
```

- asked by (16 votes), answered by Leonid Shifrin (19 votes)

[How to get intersection values from a parametric graph?]\url{http://mathematica.stackexchange.com/questions/33947/how-to-get-intersection-values-from-a-parametric-graph}

I have this graphed:

```
ParametricPlot[{2.4*Cos[t] + 1.6*Cos[3 t/2], 2.4*Sin[t] - 1.6 Sin[3 t/2]}, {t, 0, 4*Pi}]
```

It is a star, and the lines cross each other twice in the third quadrant. I need to ...

- asked by guest (14 votes), answered by Artes (17 votes)

[Mathematica gives wrong result while Wolfram|Alpha is correct]\url{http://mathematica.stackexchange.com/questions/33866/mathematica-gives-wrong-result-while-wolframalpha-is-correct}

Why does Mathematica and Wolfram|Alpha give different results based upon

the same code?

I know Wolfram|Alpha's 7.85 is correct.

- asked by dansu (11 votes), answered by Michael E2 (12 votes)

```
[Replace elements in list not matching elements of another list at the
same
position]\url{http://mathematica.stackexchange.com/questions/33731/replace-
elements-in-list-not-matching-elements-of-another-list-at-the-same-posit
> }
```

I would like to compare two arrays:

```
m = {a,b,c,d,d,f};
n = {b,b,a,d,d,e};
```

and get:

```
{0,b,0,d,d,0}
```

I have tried all kinds of things, like:

```
m = {a,b,c,d,d,f};
n = {b,b,a,d,d,e};
Transpose[{m, ...
```

- asked by martin (11 votes), answered by Leonid Shifrin (18 votes)

```
[How can I type-check the arguments of a Mathematica
function?]\url{http://mathematica.stackexchange.com/questions/33884/how-can
-i-type-check-the-arguments-of-a-mathematica-function}
```

(For educational purposes) I defined the following functions:

Translation (in \mathbb{R}^2):

```
trM[vec_] := {{1, 0, vec[[1]]}, {0, 1, vec[[2]]}, {0, 0, 1}}
```

Rotation (in \mathbb{R}^2):

...

- asked by ndroock1 (10 votes), answered by RunnyKine (6 votes)

[How to bend a logarithmic number line into a circle]\url{http://mathematica.stackexchange.com/questions/33924/how-to-bend-a-logarithmic-number-line-into-a-circle}

One way to plot a sequence of numbers on a logarithmic number line is this:

```
LogLogPlot[0, {t, 8, 16}, Axes -> {True, False},  
Ticks -> {{8, 9, 10, 11, 12, 13, 14, 15, 16}}]
```

How can the ...

- asked by Bogdan (9 votes), answered by ybeltukov (4 votes)

[Is there a way to find out who is importing a package?]\url{http://mathematica.stackexchange.com/questions/33949/is-there-a-way-to-find-out-who-is-importing-a-package}

After calling some functions, if I look into `$ContextPath`, I can see that `JLink` is in there. Is there a way to find out what sequence of functions calls (like a stack-trace) imported a particular ...

- asked by Adal (9 votes), answered by Leonid Shifrin (8 votes)

=====

Greatest hits from previous weeks:

=====

[How can I extract data points from a black and white image?]\url{http://mathematica.stackexchange.com/questions/3831/how-can-i-extract-data-points-from-a-black-and-white-image}

Consider the following graph (source):

Is there any way to extract the data points from this image in a semi-automatic way? I have seen, and tried the methods suggested in this question, but they ...

- asked by Eli Lansey (29 votes), answered by Sjoerd C. de Vries (33 votes)

[Finding the centroid of the area between two curves]\url{http://mathematica.stackexchange.com/questions/17170/finding-the-centroid-of-the-area-between-two-curves}

When I have an area bounded by curves, is there a built-in way to find the center of the area? Or do I have to plot it first and then use `ComponentMeasurements` on it?

For example: the area under $y=$...

- asked by a3f (10 votes), answered by george2079 (3 votes)

=====

Can you answer these?

=====

[How can I find the source of a memory leak?]\url{http://mathematica.stackexchange.com/questions/33707/how-can-i-find-the-source-of-a-memory-leak}

I found a really weird issue using `NDSolve[ProcessEquations]` inside module.

We start by setting `HistoryLength` to 0. After this we define a function which takes in an integer and creates a Table of ...

- asked by jaclea (4 votes)

[Is there something like `MaxProcessorUsed?`]\url{http://mathematica.stackexchange.com/questions/33775/is-there-something-like-maxprocessorused}

For standard procedures it is easy to test if the implementation is better or worse than other by using `Timing` etc.

It does not help us with creating Dynamic interfaces/visualisations. Sometimes it ...

- asked by Kuba (5 votes)

[How does Mathematica estimate error on fit parameters?]\url{http://mathematica.stackexchange.com/questions/33685/how-does-mathematica-estimate-error-on-fit-parameters}

When performing a fit using `NonlinearModelFit` (or any of Mathematica

fitting functions, but I am particularly interested in nonlinear models), Mathematica makes a covariance matrix available for all ...

- asked by ydl (1 vote)

8.13 October 1, 2013

=====

Top new questions this week:

=====

[Compiling ColorFunction for faster complex phase-amplitude plots]\url{http://mathematica.stackexchange.com/questions/32977/compiling-colorfunction-for-faster-complex-phase-amplitude-plots}

I have gotten into the habit of plotting complex-valued functions on a plane using a color-function along the lines of

Function[{z}, Hue[Arg[z]/(2 Pi), 1, Abs[z]]].

For example, the following code ...

- asked by user93655 (16 votes), answered by halirutan (15 votes)

[Pattern to match L, but not L[_]]\url{http://mathematica.stackexchange.com/questions/33025/pattern-to-match-l-but-not-l}

I have an expression where I want to replace L but not L[_]

For example, the following doesn't work and

```
sub = {L :> 2};
L + L[tilde] /. sub
(* 2 + 2[tilde], but I want 2 + L[tilde]*)
```

Is there ...

- asked by jlperla (13 votes), answered by Szabolcs (20 votes)

[Is there a Mathematica barcode reader?]\url{http://mathematica.stackexchange.com/questions/33093/is-there-a-mathematica-barcode-reader}

Is there a Mathematica barcode image reader (much like TextRecognize) that allows the user to enter an image of a barcode and then read it to get an output string?

- asked by David G. Stork (12 votes), answered by belisarius (13 votes)

[How to enlarge Mathematica 's knowledge about certain functions?]\url{http://mathematica.stackexchange.com/questions/33251/how-to-enlarge-it-mathematicas-knowledge-about-certain-functions}

I'm often troubled with the following task. I need to carry out symbolical computations involving certain special functions. Let me take as an example Barnes gamma-function. It is included in ...

- asked by Weather Report (9 votes), answered by WalkingRandomly (6 votes)

[Labeling a three-dimensional plot]\url{http://mathematica.stackexchange.com/questions/33236/labeling-a-three-dimensional-plot}

As the title says, I want to add some text in a three-dimensional plot,

thus labeling specific parts of it. Here is the corresponding Mathematica code

$$V = 1/2*(x^2 + y^2 + z^2) + (x^2*y^2 + x^2*z^2 + \dots$$

- asked by Vaggelis_Z (7 votes), answered by Kuba (7 votes)

[Mathematica: computing a difficult integral]\url{http://mathematica.stackexchange.com/questions/33217/mathematica-computing-a-difficult-integral}

I am trying to compute the following integral:

$$\text{Integrate}[\text{Exp}[\text{Sum}[-((cw*\text{[Lambda]} - b[i])^2/(2*\text{[Sigma]}^2)), \{i, 1, n\}]], \{cw, 0, 1\}]$$

And currently Mathematica outputs

$$(\text{Sqrt}[\text{[Pi]}/2]\text{[Sigma]} (\text{Erf}[(\text{Sqrt}[n](\text{[Lambda]} -$$

- asked by emaster70 (7 votes), answered by ybeltukov (8 votes)

[How to always display current section identifier (number, name) in notebook?]\url{http://mathematica.stackexchange.com/questions/33173/how-to-always-display-current-section-identifier-number-name-in-notebook}

Because I find myself relocating frequently within a long notebook divided into sections, subsections, & subsubsections, I would like to display the identifying information for the section, etc. ...

- asked by Brandon Marshall (7 votes), answered by ybeltukov (4 votes)

=====

Greatest hits from previous weeks:

=====

[Plotting Complex Quantity Functions]\url{http://mathematica.stackexchange.com/questions/3458/plotting-complex-quantity-functions}

Trying to plot with complex quantities seems not to work properly in what I want to accomplish. I would like to know if there is a general rule/way of plotting when you have complex counterparts in ...

- asked by night owl (8 votes), answered by Artes (12 votes)

[How can I extract data points from a black and white image?]\url{http://mathematica.stackexchange.com/questions/3831/how-can-i-extract-data-points-from-a-black-and-white-image}

Consider the following graph (source):

Is there any way to extract the data points from this image in a semi-automatic way? I have seen, and tried the methods suggested in this question, but they ...

- asked by Eli Lansey (29 votes), answered by Sjoerd C. de Vries (33 votes)

=====

Can you answer these?

=====

[How to embed graphic-element-specific metadata within a Graphics object?]\url{http://mathematica.stackexchange.com/questions/33207/how-to-embed-graphic-element-specific-metadata-within-a-graphics-object}

One of the most crucial requirements for rich, interactive scientific graphics is being able to "annotate" individual graphic elements (e.g. the data points of a scatterplot, the individual curves in ...

- asked by kjo (1 vote)

[How to compute the Lovasz number for the given graph in Mathematica?]\url{http://mathematica.stackexchange.com/questions/33010/how-to-compute-the-lovasz-number-for-the-given-graph-in-mathematica}

Here is a graph whose adjacency matrix is

```
m = {
{0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0},
{0, 0, 0, 1, 0, 0, 1, 1, 1, 0, 1, 0},
{0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 0, 1},
{0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 1, ...
```

- asked by Eden Harder (3 votes)

[NDSolve error when solving pde]\url{http://mathematica.stackexchange.com/questions/33166/ndsolve-error-when-solving-pde}

I am trying to calculate speed of viscous fluid in a rotating hollow sphere. The sphere is rotating round z axis. The fluid is incompressible. I used Navier-Stockes equations. The only boundry ...

- asked by Jure (1 vote)

=====

New blog post:

=====

[Plotting electronic orbitals using
Mathematica]\url{http://mathematica.blogoverflow.com/2013/09/plotting-electronic-orbitals-using-mathematica/} by Jason B on Sep 27

8.14 September 24, 2013

=====

Top new questions this week:

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[Reconstruct text pages cut by
shredder]\url{http://mathematica.stackexchange.com/questions/32612/reconstruct-text-pages-cut-by-shredder}

Q1: I have a page of printed text file, but it was cut by a paper shredder (from top to bottom). You can download all the paper fragment here. There are some examples of them. How can I reconstruct ...

- asked by mm.Jang (24 votes), answered by Kuba (20 votes)

[Generate a Random
Polygon]\url{http://mathematica.stackexchange.com/questions/32767/generate-a-random-polygon}

Does some package exist with a function that takes a parameter n and generates a random 2D n -sided simple polygon (convex or non-convex), possibly within a certain bounding box?

It does not ...

- asked by Herng Yi (13 votes), answered by Simon Woods (7 votes)

[How to examine the structure of Graphics

objects]\url{http://mathematica.stackexchange.com/questions/32716/how-to-examine-the-structure-of-graphics-objects}

One difficulty I'm encountering in studying the structure of Graphics objects is that I have not yet found a way to print or display such structure that is sufficiently general.

The FullForm of ...

- asked by kjo (12 votes), answered by Hector (11 votes)

[Size distribution of nanoparticles from a transmission electron microscopic image]\url{http://mathematica.stackexchange.com/questions/32830/size-distribution-of-nanoparticles-from-a-transmission-electron-microscopic-imag}

I have found a research article about Martian sand grain size determination from the image using Mathematica (Figure 2 in the linked article). They have not provided any detail of the methodology. It ...

- asked by Uttam Pal (11 votes), answered by RM1618 (16 votes)

[Slideshow mode: how to cycle slides automatically?]\url{http://mathematica.stackexchange.com/questions/32768/slideshow-mode-how-to-cycle-slides-automatically}

I'm doing a slideshow for an informative conference, so I need a slideshow running in background on some monitors.

My question is: is there any way to make Mathematica to cycle slides automatically?

...

- asked by markus (11 votes), answered by Hector (7 votes)

[What's the cleanest functional-programming style way to perform this list operation?]\url{http://mathematica.stackexchange.com/questions/32675/whats-the-cleanest-functional-programming-style-way-to-perform-this-list-operation}

I am looking for the correct method for accomplishing the unknown piece in the following code snippet:

```
rolls = Tuples[Range[1, 4], {2}]
```

```
{1, 1}, {1, 2}, {1, 3}, {1, 4}, {2, 1}, {2, 2}, {2, 3}, {2, ...
```

- asked by Techrocket9 (11 votes), answered by RunnyKine (6 votes)

[Solving Killing equations]\url{http://mathematica.stackexchange.com/questions/32843/solving-killing-equations}

Is it possible to solve Killing equations in Mathematica for a general vector?

I am looking for a way to create Killing equations and then find what the vectors are, but I have a problem with this.

...

- asked by dingo_d (10 votes), answered by Daniel Lichtblau (11 votes)

=====
Greatest hits from previous weeks:

=====

[xkcd-style
graphs]\url{http://mathematica.stackexchange.com/questions/11350/xkcd-style
-graphs}

I received an email to which I wanted to respond with a xkcd-style graph, but I couldn't manage it. Everything I drew looked perfect, and I don't have enough command over PlotLegends to have these ...

- asked by Amartya (387 votes), answered by Simon Woods (256 votes)

[How to compile
effectively?]\url{http://mathematica.stackexchange.com/questions/1803/how-t
o-compile-effectively}

What are the best practices of compiling functions? I understand that this is a vague question, but let me list some aspects that might trigger useful answers. Some of these have already been answered ...

- asked by Istvan Zachar (65 votes), answered by Leonid Shifrin (60 votes)

=====

Can you answer these?

=====

[NDSolve and memory
usage]\url{http://mathematica.stackexchange.com/questions/32640/ndsolve-and
-memory-usage}

After some googling, i've found similar problems around, but didn't find a 100% satisfactory answer, so let me ask here:

I'd like to solve a 1+1 problem using the method of lines. In spherical ...

- asked by Paolo (3 votes)

 [How to simplify really complicated symbolic expression?]\url{http://mathematica.stackexchange.com/questions/32759/how-to-simplify-really-complicated-symbolic-expression}

I have an expression that contains Sinh[x], Cosh[x] and Sin[g], and I want to simplify it into an easier form, based on the physics situation (I am doing some general relativity calculation), I know ...

- asked by Jason (1 vote)

 [When should I begin a new line for more readable code]\url{http://mathematica.stackexchange.com/questions/32870/when-should-i-begin-a-new-line-for-more-readable-code}

After a quick coding, I often try a lot of line feeds patterns on it. And no matter how much I do, there's seems to be no end in sight.

Front end automatically indents the code, but I cannot fully ...

- asked by asoldat (4 votes)

8.15 September 17, 2013

=====
 Top new questions this week:
 =====

[Is it possible to use RandomChoice to choose without other choices being

evaluated?]\url{http://mathematica.stackexchange.com/questions/32175/is-it-possible-to-use-randomchoice-to-choose-without-other-choices-being-evaluated}

I'm trying to do this:

```
i1 = 1;
i2 = 1;
```

```
RandomChoice[{
(i1 = i1 + 1),
(i1 = i1 - 1),
(i2 = i1 + 1),
(i2 = i2 - 1)}]
```

In order to chose randomly which variable is going to be incremented or ...

- asked by Gustavo Bandeira (14 votes), answered by ybeltukov (13 votes)

[Color Histogram3D by Bin Location]\url{http://mathematica.stackexchange.com/questions/32460/color-histogram3d-by-bin-location}

I am using a Histogram3D plot to view the correlation of the R & G of an RGB image. Naturally, I want the bins to have a color corresponding to their x , y (R,G) position on the chart.

...

- asked by Perfect Tommy (11 votes), answered by Kuba (10 votes)

[Method -> {"AxesInFront" -> False} for Graphics3D]\url{http://mathematica.stackexchange.com/questions/32168/method}

`-axesinfront-false-for-graphics3d}`

I'm aware of two ways to manage positioning of Axes for Graphics3D: AxesOrigin and AxesEdge. They seem to be quite different in terms of what is actually happening:

`GraphicsRow[{`

`...`

- asked by Kuba (11 votes), answered by Brett Champion (2 votes)

[Why does Mathematica return a Fourier transform for a function for which it is not defined?]\url{http://mathematica.stackexchange.com/questions/32387/why-does-mathematica-return-a-fourier-transform-for-a-function-for-which-it-is-not-defined}> }

The following function

$$g(x) = (1 + x^{1/a})^a$$

should NOT have a Fourier transform, as far as I am aware, for any real values of a since $g(x)$ is not nice in the sense of decays quickly ...

- asked by Luap Nalehw (10 votes), answered by ybeltukov (11 votes)

[Find eigen energies of time-independent Schrodinger equation]\url{http://mathematica.stackexchange.com/questions/32293/find-eigen-energies-of-time-independent-schrodinger-equation}

I'm trying to get the eigenvalues of a one dimensional time-independent Schrodinger equation,

$$-\frac{\hbar^2}{2m_0} \frac{d^2 \psi}{dx^2} + U(x) \psi = E \psi$$

where $U(x)$ is some potential and E_i is the ...

- asked by xslittlegrass (10 votes), answered by Jens (13 votes)

 [Is there a triangle like
 this?]\url{http://mathematica.stackexchange.com/questions/32338/is-there-a-triangle-like-this}

I want to find the numbers a , b , c , d of the function $y = \frac{ax + b}{cx + d}$ so that the triangle ABC with three points A , B , C have integer coordinates and lies on the graph ...

- asked by minthao_2011 (8 votes), answered by belisarius (15 votes)

 [Unexpected behaviour of Solve applied to two equations in two
 variables]\url{http://mathematica.stackexchange.com/questions/32246/unexpected-behaviour-of-solve-applied-to-two-equations-in-two-variables}

I have a simple Mathematica expression

```
Solve[{a(a-1)Sqrt[1+a^2+b^2] == b(a^3-1), b(b-1)Sqrt[1+a^2+b^2] == a(b^3-1)}]
```

which returns (on version 8.0, and also version 9.0)

```
{b -> -(a/(1 + a)), ...}
```

- asked by Ashley Montanaro (8 votes), answered by gap (2 votes)

=====
 Greatest hits from previous weeks:

=====

[Finding the centroid of the area between two curves]\url{http://mathematica.stackexchange.com/questions/17170/finding-the-centroid-of-the-area-between-two-curves}

When I have an area bounded by curves, is there a built-in way to find the center of the area? Or do I have to plot it first and then use ComponentMeasurements on it?

For example: the area under $y = \dots$

- asked by a3f (9 votes), answered by george2079 (3 votes)

[How can I improve Mathematica's resolution on a macbook retina display?]\url{http://mathematica.stackexchange.com/questions/18419/how-can-i-improve-mathematicas-resolution-on-a-macbook-retina-display}

Mathematica looks a bit fuzzy on the retina screen, how can I increase the resolution?

Here another screenshot showing a direct comparison between the browser and Mathematica

- asked by Tom Wellington (23 votes), answered by programming_historian (10 votes)

=====

Can you answer these?

=====

[Setting PropertyValue for VertexWeight is not persistent]\url{http://mathematica.stackexchange.com/questions/32320/setting-property-value-for-vertex-weight-is-not-persistent}

```
g = CompleteGraph[8, VertexSize -> Medium];
```

```
PropertyValue[{g, VertexList[g][[1]]}, VertexWeight] = 10;  
PropertyValue[g, VertexWeight]
```

```
{10, 1, 1, 1, 1, 1, 1, 1}
```

```
PropertyValue[{g, ...
```

- asked by Ilya Sorokin (2 votes)

[Orthogonal basis of a hermitian matrix]\url{http://mathematica.stackexchange.com/questions/32350/orthogonal-basis-of-a-hermitian-matrix}

Is there a way to extract an orthogonal basis for a hermitian matrix in Mathematica?

A simple diagonalization returns a non orthogonal basis and later using a Gram-Schmidt process which isn't aware ...

- asked by user9522 (1 vote)

[Convert ImageSize to FieldSize]\url{http://mathematica.stackexchange.com/questions/32459/convert-image-size-to-field-size}

How might I construct a function called `EmToPX[p]` such that the following 2 `InputFields` would be the same width. If not please explain why doing such isn't possible.

```
InputField["a", ImageSize -&gt; ...
```

- asked by Liam William (1 vote)

8.16 September 10, 2013

=====

Top new questions this week:

=====

[Chart illustrating options that affect `Graphics/Graphics3D` objects]\url{http://mathematica.stackexchange.com/questions/31745/chart-illustrating-options-that-affect-graphics-graphics3d-objects}

In Mathematica there is a seemingly never-ending list of parameters that affect the appearance of `Graphics` and `Graphics3D` objects: `ImageSize`, `ImageSizeRaw`, `ImagePadding`, `ImageMargins`, `PlotRange`, ...

- asked by kjo (19 votes), answered by Vitaliy Kaurov (18 votes)

[The dangers of `SaveDefinitions` --- should this really happen?]\url{http://mathematica.stackexchange.com/questions/31998/the-dangers-of-savedefinitions-should-this-really-happen}

I have been bitten hard by `SaveDefinitions -> True`. I'll describe in detail what happened below.

My questions are: Is this a bug? What is the most convenient workaround?

Consider a definition ...

- asked by Szabolcs (17 votes), answered by Rojo (12 votes)

[How to get Cases to wrap results in an arbitrary head?]\url{http://mathematica.stackexchange.com/questions/31754/how-to-get-cases-to-wrap-results-in-an-arbitrary-head}

A number of functions provide for results to be wrapped in an arbitrary head. This is very important in cases where the results should not be evaluated. Take Level as an example:

expr = Hold[{2/2, ...

- asked by Mr.Wizard (17 votes), answered by Mr.Wizard (15 votes)

[Do Mathematica notebooks include personal metadata?]\url{http://mathematica.stackexchange.com/questions/31928/do-mathematica-notebooks-include-personal-metadata}

I am about to send a Mathematica notebook to someone and I would like to make sure it does not contain any information that could personally identify me. I would also like to produce pdf files from ...

- asked by episanty (13 votes)

[How to determine numeric equivalent of Tiny, Small, etc. image sizes for Graphics?]\url{http://mathematica.stackexchange.com/questions/31726/how-to-determine-numeric-equivalent-of-tiny-small-etc-image-sizes-for-graphics}

Is there a way to find the numeric equivalents of Tiny, Small, Medium,

and Large for for ImageSize? In other words, what are the integers t , s , m , and l such that, for Graphics objects, the ...

- asked by kjo (13 votes), answered by Szabolcs (12 votes)

 [Can ReplacePart be sped up?]\url{http://mathematica.stackexchange.com/questions/31648/can-replacepart-be-sped-up}

Test case:

```
data = RandomReal[1, {1000, 1000}];
pos = RandomInteger[{1, 1000}, {5*10^5, 2}];
r1 = ReplacePart[data, pos -> 0]; // AbsoluteTiming
(data[[##]] = 0) & @@@ pos; // AbsoluteTiming
...
```

- asked by explorer (12 votes), answered by jVincent (4 votes)

 [How to identify chemical substance from tattoo?]\url{http://mathematica.stackexchange.com/questions/31657/how-to-identify-chemical-substance-from-tattoo}

A friend of mine made a tattoo on his chest of some chemical substance formula.

He challenged us to identify which substance is that. I thought that perhaps a combination of:

Mathematica image ...

- asked by Zet (12 votes), answered by Sjoerd C. de Vries (18 votes)

=====
Greatest hits from previous weeks:
=====

[How to manipulate 2D
plots?]\url{http://mathematica.stackexchange.com/questions/7142/how-to-manipulate-2d-plots}

When it comes to visual analysis, large datasets or data with intricate internal details often makes plotting in 2D useless, as the outcome is either just a fraction of the full dataset, or no details ...

- asked by Istvan Zachar (54 votes), answered by Istvan Zachar (53 votes)

[QR Code in shopping cart
handle]\url{http://mathematica.stackexchange.com/questions/26268/qr-code-in-shopping-cart-handle}

This week, the market people from my work wanted to put QR codes in shopping cart handles, but when they tested it, the QR code did not work. I noted that the cylindrical curvature (even small) ...

- asked by Murta (122 votes), answered by halirutan (121 votes)

=====
Can you answer these?
=====

[How can I create jpeg images of a given file
size?]\url{http://mathematica.stackexchange.com/questions/31814/how-can-i-create-jpeg-images-of-a-given-file-size}

Cross-posted at Wolfram Community

I would like to have a function `makeJPG[megabytes_]` that generates

random jpg images of given file sizes with itf filesize (in megabytes)
watermarked on the image ...

- asked by M.R. (3 votes)

[Understanding the discrepancy between txt file import and export times,
and possibly speeding up
Import]\url{http://mathematica.stackexchange.com/questions/31817/understand
ing-the-discrepancy-between-txt-file-import-and-export-times-and-poss}

I attempted to import a very short .txt file string using the Import
command:

```
Import["C:\\TestFile.txt"] // AbsoluteTiming
```

```
Out: {0.020001, "Test"}
```

Why does this take 20 milliseconds? Export is ...

- asked by Sparse Pine (1 vote)

[Setting OperatorSubstitution to false causes Plot's labels of
sufficiently small size not to appear in the specified typeface. Is this
a
bug?]\url{http://mathematica.stackexchange.com/questions/31784/setting-oper
atorsubstitution-to-false-causes-plots-labels-of-sufficiently-small}

If I set OperatorSubstitution to False, the labels of Plot will not use
the typeface specified by FontFamily unless FontSize is more than
certain number.

In this test scenario, that certain number is ...

- asked by Taiki (2 votes)

8.17 September 3, 2013

=====
 Top new questions this week:
 =====

[How to create a wind rose with
 Mathematica?]\url{http://mathematica.stackexchange.com/questions/31257/how-
 to-create-a-wind-rose-with-mathematica}

I am trying to plot wind rose in Mathematica, but have no idea how to do
 this.

Any suggestions ?

- asked by bushiwo (22 votes), answered by David Carraher (16 votes)

[How to include Mathematica animation in a PowerPoint
 presentation?]\url{http://mathematica.stackexchange.com/questions/31511/how-
 to-include-mathematica-animation-in-a-powerpoint-presentation}

I want to include a Mathematica animation in PowerPoint presentation.
 My code is:

```
SetDirectory[NotebookDirectory[]];
data = ReadList[
"C:\\Users\\luka\\Desktop\\GRAFI- DIPLOMA\\9_gibanje \
...

```

- asked by Luka (15 votes), answered by Vitaliy Kaurov (18 votes)

[How do I calculate the area of a polygon given its coordinates?]\url{http://mathematica.stackexchange.com/questions/31241/how-do-i-calculate-the-area-of-a-polygon-given-its-coordinates}

I have a polygon:

```
Polygon[{{0, 200 }, {200, 100}, {500, 300}, {100, 700}}]
```

How can I figure out its area? The docs page does not have any example.

So far I've reached this point with no success:

...

- asked by caligula (15 votes), answered by Kuba (14 votes)

[Pick elements of largest absolute value]\url{http://mathematica.stackexchange.com/questions/31385/pick-elements-of-largest-absolute-value}

For example, given

```
list = {{1, -3, -5}, {2, 1, 6}, {0, 2, 4}, {-9, 2, 6}}
```

should return:

```
{-5, 6, 4, -9}
```

- asked by explorer (15 votes), answered by Simon Woods (19 votes)

[How to partition a list to make each subset's size equal and mean as close as possible]\url{http://mathematica.stackexchange.com/questions/31469/how-to-partition-a-list-to-make-each-subsets-size-equal-and-mean-as-close-as-po>)

Suppose we have 3 lists each with 18 numbers like this:

```
list1 = {7.49, 7.56, 7.98, 8.09, 8.16, 8.21,  
8.73, 8.64, 8.68, 8.46, 8.57, 8.29, 9.38, 9.43, 8.95, 9.04, 8.9, 9.07};  
list2 = {21.08, ...
```

- asked by incognito007 (13 votes), answered by Vitaliy Kaurov (4 votes)

[How can one write a robust ListableQ function?]\url{http://mathematica.stackexchange.com/questions/31498/how-can-one-write-a-robust-listableq-function}

I would like to have a test that determines if a particular function is Listable. In the case of Symbols this is merely a matter of checking Attributes. Function definitions with the Listable ...

- asked by Mr.Wizard (12 votes), answered by Mr.Wizard (5 votes)

[How can I efficiently "remap" an image?]\url{http://mathematica.stackexchange.com/questions/31274/how-can-i-efficiently-remap-an-image}

Many image processing libraries like OpenCV, Intel Performance Primitives or Octave have a useful function called "remap", that takes an image, an array with X coordinates and an array with Y ...

- asked by nikiie (11 votes), answered by ssch (7 votes)

=====
Greatest hits from previous weeks:
=====

[Voronoi diagrams for generators other than points]\url{http://mathematica.stackexchange.com/questions/20696/voronoi-diagrams-for-generators-other-than-points}

Any suggestions how to determine Voronoi diagram for sites other than points, as e.g. in the picture below? Input is a raster image.

- asked by DeeDee (22 votes), answered by whuber (26 votes)

[How to compile effectively?]\url{http://mathematica.stackexchange.com/questions/1803/how-to-compile-effectively}

What are the best practices of compiling functions? I understand that this is a vague question, but let me list some aspects that might trigger useful answers. Some of these have already been answered ...

- asked by Istvan Zachar (65 votes), answered by Leonid Shifrin (59 votes)

=====
Can you answer these?
=====

[Generating an obstacle-avoiding closed-curve with a fixed perimeter and a target area]\url{http://mathematica.stackexchange.com/questions/31365/generating-an-obstacle-avoiding-closed-curve-with-a-fixed-perimeter-and-a-target}

I was wondering if there was a neat way to solve the following problem in Mathematica v9 -

Provided a binarized image (where we call black pixels "obstacles" or vice versa, whichever is most ...

- asked by TilePath (3 votes)

[What was added to the LibraryLink API in version 9?]\url{http://mathematica.stackexchange.com/questions/31433/what-was-added-to-the-librarylink-api-in-version-9}

Looking at the LibraryLink examples, there are several new functions and objects, as well as example programs, that appeared in version 9. Are these documented? If yes, where?

If would be nice to ...

- asked by Szabolcs (9 votes)

[Stochastic differential equations in the weak sense]\url{http://mathematica.stackexchange.com/questions/31443/stochastic-differential-equations-in-the-weak-sense}

There are some good discussions in <http://mathematica.stackexchange.com> regarding the numerical solution of SDEs of the form $dX(t)=a(t,X)dt+b(t,X)dW_t$, wherein $X(0)=X_{0}$, W_t is the Wiener ...

- asked by Fazlollah Soleymani (1 vote)

8.18 August 27, 2013

=====

Top new questions this week:

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[Cropping a Voronoi diagram]\url{http://mathematica.stackexchange.com/questions/31187/cropping-a-voronoi-diagram}

Someone know how can I get the correct crop of this Voronoi image using RegionFunction?

As you can see, there is a lot of undesired white regions inside the left polygon.

Some clue on how to correct ...

- asked by Murta (12 votes), answered by Kuba (7 votes)

[Automatically close Mathematica]\url{http://mathematica.stackexchange.com/questions/30974/automatically-close-mathematica}

It seems there are a lot of related topics but I haven't found an answer.

I want to automatically quit Mathematica after some procedures are done but dialog window appears:

```
1 + 1;
```

```
...
```

- asked by Kuba (11 votes), answered by John Fultz (11 votes)

[Encrypt the password used for
SendMail]\url{http://mathematica.stackexchange.com/questions/30836/encrypt-
the-password-used-for-sendmail}

I want Mathematica to send me an email when the computation is finished.
To that end, I have a cell with SendMail[...] which I place behind my
computation in the evaluation queue. The problem I have ...

- asked by simsurace (11 votes), answered by Murta (10 votes)

[Detecting and correcting gradational brightness variations in a
grayscale
image]\url{http://mathematica.stackexchange.com/questions/30823/detecting-a
nd-correcting-gradational-brightness-variations-in-a-grayscale-image}

I am trying to quantify the proportions of various components in a
greyscale image (backscattered electron image of a polished rock
sample).

Here is the original image:

bse = ...

- asked by geordie (10 votes), answered by Simon Woods (5 votes)

[Select and
Blank]\url{http://mathematica.stackexchange.com/questions/30970/select-and-
blank}

I try to filter sublists of a list which match a pattern.

```
test = {"String1", "a"}, {"String2", "b"}, {"String3",  
"a"}, {"String4", "a"};
```

The result should be:

```
result = {"String1", "a"}, ...
```

- asked by RMMA (8 votes), answered by halirutan (13 votes)

[Cannot find the maximum value of a function]\url{http://mathematica.stackexchange.com/questions/31032/cannot-find-the-maximum-value-of-a-function}

Consider the following function:

```
$a Sin(x)+b Cos(x)$
```

I tried to obtain the maximum value of this function using `MaxValue[]`:

```
MaxValue[a Sin[x] + b Cos[x], x, Reals]
```

I expect Mathematica to return ...

- asked by M6299 (7 votes), answered by george2079 (3 votes)

[How can I draw a grid behind graphics without using Plot?]\url{http://mathematica.stackexchange.com/questions/31114/how-can-i-draw-a-grid-behind-graphics-without-using-plot}

I want to show a simple vector summation but I don't know how to draw a grid behind the vectors. I am pretty sure I can do it with Mathematica but how?

It should look like this:

- asked by Serkan (7 votes), answered by Mr.Wizard (15 votes)

=====
Greatest hits from previous weeks:
=====

[Using the Mathematica front-end efficiently for editing notebooks]\url{http://mathematica.stackexchange.com/questions/8310/using-the-mathematica-front-end-efficiently-for-editing-notebooks}

Background:

I have used Vim for 15+ years. There is a certain "one"-ness with the editor one achieves. Emacs users also experience this. Notepad users do not.

My current interaction with the ...

- asked by user1602 (40 votes), answered by rm -rf (38 votes)

[How can this image (optical illusion) be created with Mathematica?]\url{http://mathematica.stackexchange.com/questions/24148/how-can-this-image-optical-illusion-be-created-with-mathematica}

I came across this image the other day:

and liked the sensation of it pulsing. I was wondering if anyone would know how to create something similar with Mathematica (without the Pink Floyd Dark ...

- asked by Mike Honeychurch (32 votes), answered by halirutan (48 votes)

=====

Can you answer these?

=====

[Assign variables from list inside With or Module]\url{http://mathematica.stackexchange.com/questions/30847/assign-variables-from-list-inside-with-or-module}

I have found that it is possible to assign variables from lists, as follows.

```
In[1]:= r = {1, 2, 3};
In[2]:= {a, b, c} = r;
In[3]:= b
Out[3]= 2
```

However, if I try to do this within a With or Module ...

- asked by Gyppo (2 votes)

[Is there a way to speed up Simplify and/or PolynomialReduce Modulus-> 2?]\url{http://mathematica.stackexchange.com/questions/31029/is-there-a-way-to-speed-up-simplify-and-or-polynomialreduce-modulus-2}

I'm trying to simplify a series of equations with at most 64 input terms. As the number of terms involved in the equations increase, the runtime seems to grow exponentially.

Does anyone know of ways ...

- asked by botnet (1 vote)

[FrontEndTokens, MathLink, and Serializer.exe]\url{http://mathematica.stackexchange.com/questions/31118/frontendtokens-mathlink-and-serializer-exe}

I have been using some basic MathLink programming in my work and wanted to create some more sophisticated MathLink programs. I came across the book "MathLink: Network Programming with Mathematica", ...

- asked by user2694879 (2 votes)

8.19 August 20, 2013

=====

Top new questions this week:

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[What bug fixes can be implemented in
init.m?]\url{http://mathematica.stackexchange.com/questions/30599/what-bug-
fixes-can-be-implemented-in-init-m}

In comments on this question, Mr. Wizard suggested a community wiki to share the bug fixes/workarounds (or possibly other tricks) people load in their init.m. I think this could provide a nice ...

- asked by jkrich (16 votes), answered by Mr.Wizard (8 votes)

[when is f@g not the same as
f[g]?\url{http://mathematica.stackexchange.com/questions/30425/when-is-fg-
not-the-same-as-fg}

I have always thought that f@g will give the same result as f[g] in all cases, and it is just a matter of style which one to use and that g will always evaluates first, and then f will evaluate using ...

- asked by Nasser (16 votes), answered by Mr.Wizard (22 votes)

[Blend code for "Sunset
Colors"]\url{http://mathematica.stackexchange.com/questions/30508/blend-cod


```
e-for-sunset-colors}
```

Hi I want to get a blend similar to "SunsetColors". To make those slight modifications, I would like to know the precise blend of that ColorScheme.

My try:

```
Graphics[Table[{Blend[{Black, ...
```

- asked by Francisco (14 votes), answered by Simon Woods (13 votes)

[Looking for a way to insert multiple elements into multiple positions simultaneously in a list]\url{http://mathematica.stackexchange.com/questions/30647/looking-for-a-way-to-insert-multiple-elements-into-multiple-positions-simultaneo}

I would like to take the following data:

```
insertvalues = {r, x};
insertpositions = {{1}, {5}};
origlist = {a, b, c, d, e, f, g};
```

and generate output that looks like this:

```
{r,a,b,c,d,x,e,f,g}
```

...

- asked by Todd Allen (13 votes), answered by Mr.Wizard (14 votes)

[How can I manipulate TemporalData?]\url{http://mathematica.stackexchange.com/questions/30712/how

`-can-i-manipulate-temporaldata}`

Version 9 introduced TemporalData but, truth be told, the documentation doesn't suggest that one can do much with it. Many of us have probably assumed we'd be better off sticking with the date-value ...

- asked by Verbeia (13 votes), answered by Verbeia (15 votes)

 [Measure perimeter of black edge in
 Mathematica]\url{http://mathematica.stackexchange.com/questions/30461/measu
 re-perimeter-of-black-edge-in-mathematica}

I have a pattern like the one below. How could I measure the total length of the perimeter of the black/white edge? This would give me a measure of spatial frequency. Any tips would be great!

Thanks!

...

- asked by Levi (13 votes), answered by belisarius (11 votes)

 [Filtering elements from a list that appear only
 once]\url{http://mathematica.stackexchange.com/questions/30610/filtering-el
 ements-from-a-list-that-appear-only-once}

I want to be able to select elements from a list that only appear once. I originally had this:

```
Select[Table[Count[list, i], {i, list}], # == 1]
```

But the issue is that my list has about 60,000 ...

- asked by Mark (12 votes), answered by belisarius (17 votes)

=====
Greatest hits from previous weeks:
=====

[How to create hedcut style
images?]\url{http://mathematica.stackexchange.com/questions/8716/how-to-cre
ate-hedcut-style-images}

Yesterday the hedcut style was brought up in chat. How can we create a
hedcut-like style automatically in Mathematica, using a photograph as a
starting point?

I am looking to create a similar ...

- asked by Szabolcs (43 votes), answered by Simon Woods (32 votes)

[Plotting Complex Quantity
Functions]\url{http://mathematica.stackexchange.com/questions/3458/plotting
-complex-quantity-functions}

Trying to plot with complex quantities seems not to work properly in
what I want to accomplish. I would like to know if there is a general
rule/way of plotting when you have complex counterparts in ...

- asked by night owl (8 votes), answered by Artes (12 votes)

=====
Can you answer these?
=====

[NDSolve: ProcessEquations and Reinitialize with Piecewise
functions]\url{http://mathematica.stackexchange.com/questions/30426/ndsolve
-processequations-and-reinitialize-with-piecewise-functions}

I am having trouble with using NDSolve'Reinitialize when the system consists of a piecewise function.

If we define the ODE system

```
simplesys = {r'[t] ==  
Piecewise[{{1, 0 <= t <= 10}, {0, 10 ...
```

- asked by jaclea (3 votes)

[Does one need to be careful about loading multiple (many) contexts or packages in the same session?]\url{http://mathematica.stackexchange.com/questions/30758/does-one-need-to-be-careful-about-loading-multiple-many-contexts-or-packages-i}

I have a number of large pieces of precomputed data which I am considering putting into individual packages in order to load them (via DeclarePackage) and unload them (via Leonid Shifrin's ...

- asked by Tobias Hagge (4 votes)

[Mathematica and strong AI]\url{http://mathematica.stackexchange.com/questions/30585/mathematica-and-strong-ai}

David Deutsch (physicist / quantum computing theorist) wrote an article for Aeon Magazine last year: On Artificial Intelligence that got me thinking.

The article assesses and critiques the ...

- asked by Jagra (7 votes)

8.20 April 29, 2013

=====

Top new questions this week:

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[Detecting patterns of black and white stones on a 2D board]\url{http://mathematica.stackexchange.com/questions/46631/detecting-patterns-of-black-and-white-stones-on-a-2d-board}

I'm writing a program to play a game of Pente, and I'm struggling with the following question:

What's the best way to detect patterns on a two-dimensional board?

For example, in Pente a pair of ...

- asked by Victor K. (20 votes), answered by Mr.Wizard (9 votes)

[Is there a better way to add elements to a Graphics expression repeatedly?]\url{http://mathematica.stackexchange.com/questions/46746/is-there-a-better-way-to-add-elements-to-a-graphics-expression-repeatedly}

Consider simple example where a set of points is generated and some are displayed.

```
k = 10^5;
p = RandomReal[{-1, 1}, {k, 2}];
n = 2
Graphics[Dynamic@Point@p[[;; n]], Frame -&gt; True, PlotRange -&gt; ...
```

- asked by Kuba (13 votes), answered by Rom38 (5 votes)

[Full documentation for AppearanceElements]\url{http://mathematica.stackexchange.com/questions/46792/full-documentation-for-appearanceelements}

As explained in this solution,

```
ListAnimate[Table[Plot[Sin[n x], {x, 0, 2}], {n, 3}]]//InputForm
```

will allow me to view the types of appearance element for the ListAnimate controller. But the same ...

- asked by fairflow (8 votes), answered by Nasser (8 votes)

[StringReplace, ReplaceAll and Rule interact in a bizarre way]\url{http://mathematica.stackexchange.com/questions/46611/stringreplace-replaceall-and-rule-interact-in-a-bizarre-way}

I have the following pair of things:

```
ClearAll[foo, labeledFoo];

labeledFoo = {"FooBarBazQuux", foo};
```

This works like you'd expect:

```
labeledFoo /. hdr_String :&gt;
StringReplace[hdr, ...
```

- asked by Pillsy (8 votes), answered by Leonid Shifrin (11 votes)

[Is it possible to create iOS apps with Mathematica?]\url{http://mathematica.stackexchange.com/questions/46888/is-it-possible-to-create-ios-apps-with-mathematica}

I am fairly new to Mathematica and don't have much experience with other programming languages, but I can already see that Mathematica and the Wolfram language are far easier to use than most others.

...

- asked by Aron (7 votes), answered by Vitaliy Kaurov (9 votes)

[Creating a Mathieu stability diagram]\url{http://mathematica.stackexchange.com/questions/46750/creating-a-mathieu-stability-diagram}

I am attempting to re-create a Mathieu stability diagram like the one shown here:

I expected that I could use MathieuC to generate this graph by assuming that instability occurs when the function ...

- asked by bobthechemist (7 votes), answered by Oleksandr R. (10 votes)

[How to request financial data from Yahoo's YQL?]\url{http://mathematica.stackexchange.com/questions/46760/how-to-request-financial-data-from-yahoos-yql}

How can I download historical data from Yahoo ? Although Mathematica's FinancialData function uses Yahoo it could be useful to have more control on how to retrieve data from Yahoo's YQL.

- asked by Faysal Aberkane (7 votes), answered by Faysal Aberkane (12 votes)

=====
 Greatest hits from previous weeks:
 =====

[Get a "step by step" evaluation in
 Mathematica]\url{http://mathematica.stackexchange.com/questions/148/get-a-s
 tep-by-step-evaluation-in-mathematica}

Is it possible in Mathematica to get a step-by-step evaluation of some
 functions; that's to say, outputting not only the result but all the
 stages that have led to it?

Example : Let's say I want to ...

- asked by Skydreamer (50 votes), answered by J.M. (44 votes)

 [How to create word
 clouds?]\url{http://mathematica.stackexchange.com/questions/2334/how-to-cre
 ate-word-clouds}

Word clouds are rather useless fancy and visually appealing plots, where
 words are plotted with different sizes according to their frequency in a
 corpus. Many applications exist out there (Wordle, ...

- asked by Istvan Zachar (91 votes), answered by Heike (78 votes)

=====
 Can you answer these?
 =====

[What is " (Dialog) Input [] := " after evaluating a
 cell?]\url{http://mathematica.stackexchange.com/questions/46669/what-is-dia
 log-input-after-evaluating-a-cell}

I have done a time-consuming run and calculation. After many hours (
 about 7 hours!), the black color which shows that the cell is

evaluating, turn into gray and a strange text appears like this :

...

- asked by Shellp (2 votes)

 [make mathematica recognize CCompiler and NVCC on remote Windows machine]\url{http://mathematica.stackexchange.com/questions/46971/make-mathematica-recognize-compiler-and-nvcc-on-remote-windows-machine}

I have setup a mathematica remote kernel on a Windows 7 64 bit machine, which has MS Visual Studio 2010 installed. When I start mathematica on the windows machine mathematica recognizes the MS ...

- asked by Wizard (1 vote)

 [Function with a sharp resonance which Mathematica fails to integrate. Why?]\url{http://mathematica.stackexchange.com/questions/46737/function-with-a-sharp-resonance-which-mathematica-fails-to-integrate-why}

I'm a new user of Mathematica and I'm trying to use it to calculate the collisional cross-section as a function of energy for a given potential and decay rate. I know that the resulting function ...

- asked by Woody (3 votes)

8.21 April 22, 2013

=====
 Top new questions this week:
 =====

[Undocumented form for Extract]\url{http://mathematica.stackexchange.com/questions/46261/undocumen

```
ted-form-for-extract}
```

Prompted by a comments conversation here, here's an interesting (and often performance enhancing) use of Extract:

```
target = Join[Range[100], {{1, 2, 3, Range[20]}}];
```

```
Rest@Extract[target, {{{}}, {2 ;; ...
```

- asked by rasher (17 votes), answered by Jacob Akkerboom (7 votes)

[Bizarre behavior of With, Compile and Break]\url{http://mathematica.stackexchange.com/questions/46315/bizarre-behavior-of-with-compile-and-break}

I'm guessing this is almost certainly a bug in Compile (because they're fairly common), but it's pretty weird and I spent about an hour tracking down the issue and finding a test case. Consider this ...

- asked by Pillsy (10 votes), answered by Leonid Shifrin (10 votes)

[Finding "Maxima" and "Minima" on a B-Spline]\url{http://mathematica.stackexchange.com/questions/46517/finding-maxima-and-minima-on-a-b-spline}

I need to find the "Maxima" and "Minima" on a B-Spline or more correct the points where the 2nd components of the derivate equal zero.

For example:

```
g = BSplineFunction[{{1, 2}, {2, 4}, {3, -1}, ...
```

- asked by cjkoda (8 votes), answered by Silvia (12 votes)

[Select cases from a list]\url{http://mathematica.stackexchange.com/questions/46472/select-cases-from-a-list}

I have a list in the form :

{1,1,1,0,-1,-1,1,1,1,0,0,0,0,-1,-1}

No I'm trying to select only those sequences which start with 1 have a zero (or many zeros) between and are followed by -1. For ...

- asked by holistic (8 votes), answered by halirutan (11 votes)

[Filling a curve between a line and the x-axis]\url{http://mathematica.stackexchange.com/questions/46332/filling-a-curve-between-a-line-and-the-x-axis}

I'm trying to plot the function $f(x)=\frac{1}{x^2}$, filling the square area from (0,0) to (1,1) with purple and filling the area under the curve from 1 to 4 with red.

However, Mathematica is not ...

- asked by Eudokia (8 votes), answered by Kuba (7 votes)

[Explain the difference between ViewPoint and ViewVector?]\url{http://mathematica.stackexchange.com/questions/46266/explain-the-difference-between-viewpoint-and-viewvector}

I've read the documentation, but am still very unclear as to what the difference is between ViewVector and ViewPoint for Graphics3D. Could someone explain it concisely and clearly enough so that an ...

- asked by Aron (7 votes), answered by Pickett (3 votes)

[Measuring curve length on a binarized image]\url{http://mathematica.stackexchange.com/questions/46342/measuring-curve-length-on-a-binarized-image}

With the help of almighty Mathematica 9, I got from this

To this:

with this code:

```
MorphologicalBinarize[
Import["http://i.stack.imgur.com/79119.jpg"]~
ColorConvert~"Grayscale"];
...
```

- asked by iccthedral (7 votes), answered by halirutan (6 votes)

=====
Greatest hits from previous weeks:
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[How to generate a random snowflake]\url{http://mathematica.stackexchange.com/questions/39361/how-to-generate-a-random-snowflake}

'Tis the season...

And it's about time I posed my first question on Mathematica Stack Exchange.

So, here's an holiday quest for you Graphics (and P-Chem?) gurus.

What is your best code for generating ...

- asked by Peltio (86 votes), answered by Silvia (117 votes)

[What is the best Mathematica tutorial for young people?]\url{http://mathematica.stackexchange.com/questions/733/what-is-the-best-mathematica-tutorial-for-young-people}

As Conrad Wolfram said at the TED conference, in the future kids should focus more on new technology. Computers compute better than humans, so we should focus more on thinking and getting the ...

- asked by noisy (32 votes), answered by Vitaliy Kaurov (17 votes)

=====

Can you answer these?

=====

[How to get mathematica to simplify a result]\url{http://mathematica.stackexchange.com/questions/46254/how-to-get-mathematica-to-simplify-a-result}

I have the following output $\text{Li}_2\left(3-2\sqrt{2}\right)-4\text{Li}_2\left(-1+\sqrt{2}\right)$.

This turns out to be equivalent to $\log^2(1+\sqrt{2})-\frac{\pi^2}{4}$.

How ...

- asked by Oliver (3 votes)

[Why does Network'GraphPlot'wrapper appear in my GraphPlot?]\url{http://mathematica.stackexchange.com/questions/46377/why-do

es-networkgraphplotwrapper-appear-in-my-graphplot}

I'm making a GraphPlot of data similar to this:

gpd = ...

- asked by ArgentoSapiens (1 vote)

 [Simplifying trig expressions containing Sqrt or
 Abs]\url{http://mathematica.stackexchange.com/questions/46560/simplifying-t
 rig-expressions-containing-sqrt-or-abs}

The following Maple code can simplify $\text{abs}(\sin(x))$ into $-\sin(x)$ given the
 condition $-3\pi/4 \leq x \leq -\pi/2$

simplify(abs(sin(x))) assuming $-3\pi \leq x, x \leq -5\pi/2$;

I tried what I thought would ...

- asked by mathe (6 votes)

8.22 April 8, 2013

=====
 Top new questions this week:
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[Sketch-type graphics with transparency and dashed hidden
 lines?]\url{http://mathematica.stackexchange.com/questions/45410/sketch-typ
 e-graphics-with-transparency-and-dashed-hidden-lines}

I'd like to create transparent graphs like the following from P1095,
 Calculus 6th Ed, by James Stewart. Can Mathematica accomplish this? By
 "transparent," I mean the ability to see the interior, ...

- asked by LePressentiment (18 votes), answered by Silvia (35 votes)

[Animating moving surface of
torus]\url{http://mathematica.stackexchange.com/questions/45417/animating-m
oving-surface-of-torus}

I would like to try to recreate something similar to Paolo eri's torus
animation:

I have isolated the moving surface torus section form this Wolfram
Demonstration by Kevin Sonnanburg:

$t = s; s = \dots$

- asked by martin (11 votes), answered by Kuba (15 votes)

[Fit two intersecting straight lines in
Mathematica]\url{http://mathematica.stackexchange.com/questions/45401/fit-t
wo-intersecting-straight-lines-in-mathematica}

I am trying to do a Kurie analysis of the double beta decay of
Strontium-90.

Here we have two straight sections, and I need to obtain a value for the
intersection along with an error for it. I ...

- asked by ephimetheus (11 votes), answered by Vitaliy Kaurov (13 votes)

[Plotting Fourier spectrum versus frequency of a signal]\url{http://mathematica.stackexchange.com/questions/45502/plotting-fourier-spectrum-versus-frequency-of-a-signal}

I have looked around here, and i am sure this has been answered, but i don't understand it. The thing is, I have taken a introductory signal processing course, and we had to use Mathematica, and i had ...

- asked by mickey (10 votes), answered by Vitaliy Kaurov (17 votes)

[Wikipedia People only search]\url{http://mathematica.stackexchange.com/questions/45393/wikipedia-people-only-search}

I am trying to search people from Wikipedia(For example .*John.* in REGEX).

The following query is close, but it isn't generalized like .*John.* and only gives back historic figures that have ...

- asked by Liam William (8 votes), answered by Michael Hale (8 votes)

[Smoothing ListContourPlot contours]\url{http://mathematica.stackexchange.com/questions/45519/smoothing-listcontourplot-contours}

I have some data of type $\{\{x_1, y_1, f_1\}, \{x_2, y_2, f_2\}, \dots\}$ and want to do ListContourPlot. However, there is a problem that the data f is not smooth enough and has small errors.

Here is a toy ...

- asked by Yi Wang (7 votes), answered by Rahul Narain (8 votes)

[Half-delayed evaluation]\url{http://mathematica.stackexchange.com/questions/45361/half-delayed-evaluation}

In a certain wider context, I need to make some delayed definitions, such as $x := a + b + c$, but within these definitions I want a and b to be evaluated to their current values, not their later ...

- asked by Dror Bar-Natan (7 votes), answered by WReach (5 votes)

=====
Greatest hits from previous weeks:
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[How do I plot coordinates (latitude and longitude pairs) on a geographic map?]\url{http://mathematica.stackexchange.com/questions/2076/how-do-i-plot-coordinates-latitude-and-longitude-pairs-on-a-geographic-map}

I'm attempting for the first time to create a map within Mathematica. In particular, I would like to take an output of points and plot them according to their lat/long values over a geographic map. I ...

- asked by Peter House (36 votes), answered by kguler (24 votes)

[What are the most common pitfalls awaiting new users?]\url{http://mathematica.stackexchange.com/questions/18393/what-are-the-most-common-pitfalls-awaiting-new-users}

As you may already know, Mathematica is a wonderful piece of software. However, it has a few characteristics that tend to confuse new (and sometimes not-so-new) users. That can be clearly seen from ...

- asked by belisarius (134 votes), answered by Michael E2 (67 votes)

=====
 Can you answer these?
 =====

[How to not include data value outside plot range in the plot]\url{http://mathematica.stackexchange.com/questions/45537/how-to-not-include-data-value-outside-plot-range-in-the-plot}

Consider this list plot

```
ls = Table[Sin[t], {t, 0, 100, 0.1}];
p = ListPlot[ls, PlotRange -> {{0., 0.1}, All}, DataRange -> {0, 1}, Joined -> True]
```

If we look at the data in the plot, we ...

- asked by xslittlegrass (2 votes)

[Finding undetermined coefficients with boundary conditions]\url{http://mathematica.stackexchange.com/questions/45219/finding-undetermined-coefficients-with-boundary-conditions}

I have 2 equations which are;

$$T_o[x_] := c_1 E^{(-a_1 x)/2} + c_2 E^{(a_1 x)/2} + a_2$$

$$T_u[x_] := c_3 E^{(-a_3 x)/2} + c_4 E^{(a_3 x)/2}$$

T_u equals almost zero (10^{-6}) at end of the wires.

T_o must be equal to T_u at ...

- asked by CanYusuf (1 vote)

[Why does setting `$Assumptions` make my Fourier transforms slow?]\url{http://mathematica.stackexchange.com/questions/45258/why-does-setting-assumptions-make-my-fourier-transforms-slow}

Consider these Fourier transforms

```
AbsoluteTiming[FourierTransform[Exp[(-I)*\[Omega]0*t]*Exp[-t^2], t, \[Omega]]; ]
AbsoluteTiming[FourierTransform[Exp[(-I)*\[Omega]0*t]*Exp[-(t/T0)^2], t, \[Omega]]; ]
...
```

- asked by xslittlegrass (2 votes)