```
> restart;
  int(arcsin(x)*log(x),x);
```

$$\frac{1}{1+\tan\left(\frac{1}{2}\arcsin(x)\right)^2}\left(-2\arcsin(x)\tan\left(\frac{1}{2}\arcsin(x)\right) - 2\tan\left(\frac{1}{2}\arcsin(x)\right)^2\ln\left(\frac{2\tan\left(\frac{1}{2}\arcsin(x)\right)}{1+\tan\left(\frac{1}{2}\arcsin(x)\right)^2}\right) + 2\arcsin(x)\tan\left(\frac{1}{2}\arcsin(x)\right)\ln\left(\frac{2\tan\left(\frac{1}{2}\arcsin(x)\right)}{1+\tan\left(\frac{1}{2}\arcsin(x)\right)^2}\right) - 4\right) - \ln\left(1 + \tan\left(\frac{1}{2}\arcsin(x)\right)^2\right) \tag{1}$$

```
> restart;
  int(x*arcsin(x)/sqrt(1-x^2),x);
```

$$x - \arcsin(x)\sqrt{-x^2+1} \tag{2}$$

```
> restart;
  int(arcsin(sqrt(x+1)-sqrt(x)),x);
```

$$-\left(\frac{1}{16}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right) + \frac{3}{8}\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^3 - \frac{3}{8}\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^5 - \frac{1}{8}\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^7 + \frac{1}{8}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^2 + \frac{9}{8}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^4 + \frac{1}{8}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^6 + \frac{1}{16}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^8 + \frac{1}{8}\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)\right) \Big/ \left(\left(1+\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^2\right)^2\tan\left(\frac{1}{2}\arcsin\left(-\sqrt{x+1}+\sqrt{x}\right)\right)^2\right) \tag{3}$$

```
> restart;
  int(log(1+x*sqrt(1+x^2)),x);
```

$$\ln\left(1+x\sqrt{x^2+1}\right)x - 2x + \frac{\sqrt{5}\,\operatorname{arctanh}\left(\frac{2x}{\sqrt{-2+2\sqrt{5}}}\right)}{\sqrt{-2+2\sqrt{5}}} - \frac{\operatorname{arctanh}\left(\frac{2x}{\sqrt{-2+2\sqrt{5}}}\right)}{\sqrt{-2+2\sqrt{5}}} \tag{4}$$

$$+\frac{\sqrt{5}\arctan\left(\frac{2x}{\sqrt{2\sqrt{5}+2}}\right)}{\sqrt{2\sqrt{5}+2}}+\frac{\arctan\left(\frac{2x}{\sqrt{2\sqrt{5}+2}}\right)}{\sqrt{2\sqrt{5}+2}}$$

$$-\frac{2}{5}\sqrt{\sqrt{5}-2}\sqrt{5}\operatorname{arctanh}\left(\frac{\sqrt{x^2+1}-x}{\sqrt{\sqrt{5}-2}}\right)$$

$$+\frac{2}{5}\sqrt{2+\sqrt{5}}\sqrt{5}\arctan\left(\frac{\sqrt{x^2+1}-x}{\sqrt{2+\sqrt{5}}}\right)-\frac{1}{2}\frac{\sqrt{5}\operatorname{arctanh}\left(\frac{\sqrt{x^2+1}-x}{\sqrt{2+\sqrt{5}}}\right)}{\sqrt{2+\sqrt{5}}}$$

$$-\frac{1}{2}\frac{\sqrt{5}\arctan\left(\frac{\sqrt{x^2+1}-x}{\sqrt{\sqrt{5}-2}}\right)}{\sqrt{\sqrt{5}-2}}-\frac{3}{10}\frac{\sqrt{5}\operatorname{arctanh}\left(\frac{\sqrt{x^2+1}-x}{\sqrt{\sqrt{5}-2}}\right)}{\sqrt{\sqrt{5}-2}}$$

$$+\frac{1}{2}\frac{\operatorname{arctanh}\left(\frac{\sqrt{x^2+1}-x}{\sqrt{\sqrt{5}-2}}\right)}{\sqrt{\sqrt{5}-2}}-\frac{3}{10}\frac{\sqrt{5}\arctan\left(\frac{\sqrt{x^2+1}-x}{\sqrt{2+\sqrt{5}}}\right)}{\sqrt{2+\sqrt{5}}}$$

$$-\frac{1}{2}\frac{\arctan\left(\frac{\sqrt{x^2+1}-x}{\sqrt{2+\sqrt{5}}}\right)}{\sqrt{2+\sqrt{5}}}-\frac{1}{2}\frac{\operatorname{arctanh}\left(\frac{\sqrt{x^2+1}-x}{\sqrt{2+\sqrt{5}}}\right)}{\sqrt{2+\sqrt{5}}}$$

$$+\frac{1}{2}\frac{\arctan\left(\frac{\sqrt{x^2+1}-x}{\sqrt{\sqrt{5}-2}}\right)}{\sqrt{\sqrt{5}-2}}$$

```
> restart;
  int(cos(x)^2/sqrt(cos(x)^4+cos(x)^2+1),x);
```

$$-\Bigg(2\sqrt{-\left(\cos(2x)^2+4\cos(2x)+7\right)\left(\cos(2x)^2-1\right)}\,\Big(-3$$

$$+I\sqrt{3}\Big)\sqrt{\frac{\left(-1+I\sqrt{3}\right)\left(\cos(2x)-1\right)}{\left(-3+I\sqrt{3}\right)\left(\cos(2x)+1\right)}}\,(\cos(2x)$$

$$+1)$$

$${}^{2}\sqrt{\frac{\cos(2x)+2+I\sqrt{3}}{\left(I\sqrt{3}+3\right)\left(\cos(2x)+1\right)}}\sqrt{\frac{I\sqrt{3}-\cos(2x)-2}{\left(-3+I\sqrt{3}\right)\left(\cos(2x)+1\right)}}\operatorname{EllipticPi}\Bigg($$

(5)

$$\sqrt{\frac{\left(-1+\mathrm{I}\sqrt{3}\right)\left(\cos(2x)-1\right)}{\left(-3+\mathrm{I}\sqrt{3}\right)\left(\cos(2x)+1\right)}},\ \frac{-3+\mathrm{I}\sqrt{3}}{-1+\mathrm{I}\sqrt{3}},\ \sqrt{\frac{\left(1+\mathrm{I}\sqrt{3}\right)\left(-3+\mathrm{I}\sqrt{3}\right)}{\left(\mathrm{I}\sqrt{3}+3\right)\left(-1+\mathrm{I}\sqrt{3}\right)}}\Bigg)\Bigg)\Bigg/$$

$$\Big(\Big(-1$$

$$+\mathrm{I}\sqrt{3}\Big)$$

$$\sqrt{\left(\cos(2x)-1\right)\left(\cos(2x)+1\right)\left(\cos(2x)+2+\mathrm{I}\sqrt{3}\right)\left(\mathrm{I}\sqrt{3}-\cos(2x)-2\right)}\ \sin(2$$

$$x)\ \sqrt{\cos(2x)^2+4\cos(2x)+7}\Big)$$

```
> restart;
  int(tan(x)*sqrt(1+tan(x)^4),x);
```

$$\frac{1}{2}\sqrt{\left(1+\tan(x)^2\right)^2-2\tan(x)^2}-\frac{1}{2}\operatorname{arcsinh}\left(\tan(x)^2\right) \qquad \textbf{(6)}$$

$$-\frac{1}{2}\sqrt{2}\operatorname{arctanh}\left(\frac{1}{4}\frac{\left(-2\tan(x)^2+2\right)\sqrt{2}}{\sqrt{\left(1+\tan(x)^2\right)^2-2\tan(x)^2}}\right)$$

```
> restart;
  int(tan(x)/sqrt(sec(x)^3+1),x);
```

$$-\frac{2}{3}\operatorname{arctanh}\left(\sqrt{\sec(x)^3+1}\right) \qquad \textbf{(7)}$$

```
> restart;
  int(sqrt(tan(x)^2+2*tan(x)+2),x);
```

$$\operatorname{arcsinh}(\tan(x)+1) \qquad \textbf{(8)}$$

$$+\frac{1}{10}\Bigg($$

$$\left(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+10\right.$$

$$+ 2\sqrt{5}\Big)^{1/2}\sqrt{5}\Bigg($$

$$-5\arctan\Bigg(\frac{1}{80}\Bigg(\sqrt{-22+10\sqrt{5}}$$

$$\sqrt{(5-\sqrt{5})\left(\frac{2\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+\sqrt{5}+3\right)}\Bigg(1\Big/\Big($$

$$-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\Big)^2\Big(11\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2\Big)$$

$$+\frac{25\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+4\sqrt{5}+10\Bigg)(-5+\sqrt{5})\Big(-\frac{1}{2}\sqrt{5}+\frac{1}{2}$$

$$+\tan(x)\Bigg)\Bigg) \Bigg/ \Bigg(\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)\Bigg(\frac{\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^4}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^4}$$

$$+\frac{3\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+1\Bigg)\Bigg)\Bigg)\sqrt{-10+10\sqrt{5}}\,\sqrt{-22+10\sqrt{5}}$$

$$-3\sqrt{5}\,\arctan\Bigg(\frac{1}{80}\Bigg(\sqrt{-22+10\sqrt{5}}$$

$$\sqrt{\left(5-\sqrt{5}\right)\left(\frac{2\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+\sqrt{5}+3\right)}\Bigg(1\Big/\Big($$

$$-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\Big)^2\Big(11\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2\Big)$$

$$+\frac{25\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+4\sqrt{5}+10\Bigg)\left(-5+\sqrt{5}\right)\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}\right.$$

$$\left.+\tan(x)\right)\Bigg)\Bigg/\Bigg(\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)\Bigg(\frac{\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^4}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^4}$$

$$+\frac{3\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+1\Bigg)\Bigg)\Bigg)\sqrt{-10+10\sqrt{5}}\,\sqrt{-22+10\sqrt{5}}$$

$$+20\operatorname{arctanh}\Bigg(\frac{1}{\sqrt{-10+10\sqrt{5}}}$$

$$\Bigg(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+10$$

$$+2\sqrt{5}\Bigg)^{1/2}\Bigg)\sqrt{5}$$

$$-60\,\operatorname{arctanh}\left(\frac{1}{\sqrt{-10+10\sqrt{5}}}\right.$$

$$\left(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}+10\right.$$

$$\left.\left.\left.\left.+2\sqrt{5}\right)^{1/2}\right)\right)\right)\Bigg/$$

$$\Bigg(\Bigg($$

$$-\frac{1}{\left(\frac{-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)}{-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)}+1\right)^{2}}\left(\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}\right.$$

$$^{1/2}$$

$$-\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-2\sqrt{5}-10\Bigg)\Bigg)\left(\frac{-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)}{-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)}\right.$$

$$\left.+1\right)\left(-5+\sqrt{5}\right)\sqrt{-10+10\sqrt{5}}\Bigg)$$

$$+\frac{1}{5}\Bigg($$

$$\left(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+10\right.$$

$$\left.+2\sqrt{5}\right)^{1/2}\sqrt{5}\Bigg($$

$$-\sqrt{5}\,\arctan\left(\frac{1}{80}\left(\sqrt{-22+10\sqrt{5}}\right.\right.$$

$$\sqrt{\left(5-\sqrt{5}\right)\left(\frac{2\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+\sqrt{5}+3\right)}\left(1\Big/\left(\left(\right.\right.\right.$$

$$-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\Bigg)^2\left(11\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2\right)$$

$$+\frac{25\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+4\sqrt{5}+10\Bigg)\left(-5+\sqrt{5}\right)\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}\right.$$

$$+\tan(x)\Big)\Bigg)\Bigg/\left(\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)\left(\frac{\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^4}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^4}\right.\right.$$

$$+\frac{3\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}+1\Bigg)\Bigg)\Bigg)\sqrt{-10+10\sqrt{5}}\,\sqrt{-22+10\sqrt{5}}$$

$$-5\arctan\Bigg(\frac{1}{80}\Bigg(\sqrt{-22+10\sqrt{5}}$$

$$\sqrt{\left(5-\sqrt{5}\right)\left(\frac{2\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}+\sqrt{5}+3\right)}\,\Bigg(1\Big/\Bigg(\Big($$

$$-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\Big)^{2}\Bigg(11\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}\Bigg)$$

$$+\frac{25\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{2}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{2}}+4\sqrt{5}+10\Bigg)\left(-5+\sqrt{5}\right)\Big(-\frac{1}{2}\sqrt{5}+\frac{1}{2}$$

$$+\tan(x)\Big)\Bigg)\Bigg/\Bigg(\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)\Bigg(\frac{\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^{4}}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^{4}}$$

$$+\frac{3\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+1\Bigg)\Bigg)\Bigg)\sqrt{-10+10\sqrt{5}}\,\sqrt{-22+10\sqrt{5}}$$

$$+20\,\operatorname{arctanh}\left(\frac{1}{\sqrt{-10+10\sqrt{5}}}\right.$$

$$\left(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+10\right.$$

$$\left.\left.+2\sqrt{5}\right)^{1/2}\right)\sqrt{5}$$

$$-20\,\operatorname{arctanh}\left(\frac{1}{\sqrt{-10+10\sqrt{5}}}\right.$$

$$\left(\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}+10\right.$$

$$+2\sqrt{5}\Big)^{1/2}\Big)\Big)\Big)\Big)\Big/$$

$$\Bigg(\Bigg($$

$$-\frac{1}{\left(\frac{-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)}{-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)}+1\right)^2}\left(\frac{2\sqrt{5}\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}\right.$$

$$\left.-\frac{10\left(-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)\right)^2}{\left(-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)\right)^2}-2\sqrt{5}-10\right)\Bigg)^{1/2}\left(\frac{-\frac{1}{2}\sqrt{5}+\frac{1}{2}+\tan(x)}{-\frac{1}{2}\sqrt{5}-\frac{1}{2}-\tan(x)}\right.$$

$$\left.+1\right)\left(-5+\sqrt{5}\right)\sqrt{-10+10\sqrt{5}}\Bigg)$$

```
> restart;
  int(sin(x)*arctan(sqrt(sec(x)-1)),x);
```

$$\int \sin(x) \arctan\left(\sqrt{\sec(x) - 1}\right) \mathrm{d}x \tag{9}$$

```
> restart;
  int(x^3*exp(1)^arcsin(x)/sqrt(1-x^2),x);
```

$$\frac{1}{10} \left(x - 3\sqrt{-x^2 + 1}\right) \mathrm{e}^{\arcsin(x)} x^2 + \frac{3}{10} \mathrm{e}^{\arcsin(x)} \left(x - \sqrt{-x^2 + 1}\right) \tag{10}$$