Rubi 3 Test Suite Results

Contributed Indefinite Integration Problems

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1}{A^4-A^2 B^2+\left(-A^2+B^2\right) x^2},\ x,\ -1,\ 1\right\}$$

$$\frac{\operatorname{ArcTanh}\left[\frac{x}{A}\right]}{A\left(A^2-B^2\right)}$$

$$\frac{\operatorname{ArcTan}\left[\frac{\sqrt{-A^2+B^2}\ x}{\sqrt{A^4-A^2 B^2}}\right]}{\sqrt{-A^2+B^2}\ \sqrt{A^4-A^2 B^2}}$$

Unable to integrate:

$$\left\{\frac{x^2+2\,x\,\text{Log}[x]+\text{Log}[x]^2+(1+x)\sqrt{x+\text{Log}[x]}}{x^3+2\,x^2\,\text{Log}[x]+x\,\text{Log}[x]^2},\ x,\ -10,\ 10\right\}$$

$$\text{Log}[x]-\frac{2}{\sqrt{x+\text{Log}[x]}}$$

$$\text{Log}[x]-\frac{2}{\sqrt{x+\text{Log}[x]}}+\frac{2}{\text{Log}[x]\sqrt{x+\text{Log}[x]}}-\frac{2\sqrt{x+\text{Log}[x]}}{\text{Log}[x]^2}-\text{Subst}\left[\text{Int}\left[\frac{1}{(e^x+x)^{3/2}},\ x\right],\ x,\ \text{Log}[x]\right]+$$
$$\text{Subst}\left[\text{Int}\left[\frac{1}{x\,(e^x+x)^{3/2}},\ x\right],\ x,\ \text{Log}[x]\right]+3\,\text{Subst}\left[\text{Int}\left[\frac{1}{x^2\sqrt{e^x+x}},\ x\right],\ x,\ \text{Log}[x]\right]-$$
$$4\,\text{Subst}\left[\text{Int}\left[\frac{\sqrt{e^x+x}}{x^3},\ x\right],\ x,\ \text{Log}[x]\right]+\text{Subst}\left[\text{Int}\left[\frac{\sqrt{e^x+x}}{x^2},\ x\right],\ x,\ \text{Log}[x]\right]$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1}{\sqrt{-1+x^2}\ \left(-4+3\,x^2\right)^2},\ x,\ -9,\ 9\right\}$$

$$\frac{3\,x\sqrt{-1+x^2}}{32-24\,x^2}+\frac{5}{16}\operatorname{ArcTanh}\left[\frac{x}{2\sqrt{-1+x^2}}\right]$$

$$\frac{\sqrt{3}\ \sqrt{-1+x^2}}{16\left(2-\sqrt{3}\ x\right)}-\frac{\sqrt{3}\ \sqrt{-1+x^2}}{16\left(2+\sqrt{3}\ x\right)}-\frac{5}{32}\operatorname{ArcTanh}\left[\frac{\sqrt{3}-2\,x}{\sqrt{-1+x^2}}\right]+\frac{5}{32}\operatorname{ArcTanh}\left[\frac{\sqrt{3}+2\,x}{\sqrt{-1+x^2}}\right]$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{\sqrt{-1+x^2}}{(-i+x)^2},\ x,\ -9,\ 9\right\}$$

$$\frac{\sqrt{-1+x^2}}{i-x}-i\sqrt{2}\ \operatorname{ArcTan}\left[\frac{i-x-\sqrt{-1+x^2}}{\sqrt{2}}\right]+\operatorname{ArcTanh}\left[\frac{\sqrt{-1+x^2}}{x}\right]$$

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

$$\frac{2\,i\left(x+\sqrt{-1+x^2}\right)}{1-2\,i\left(x+\sqrt{-1+x^2}\right)+\left(x+\sqrt{-1+x^2}\right)^2}-i\sqrt{2}\,\text{ArcTan}\left[\frac{i-x-\sqrt{-1+x^2}}{\sqrt{2}}\right]+\text{Log}\left[x+\sqrt{-1+x^2}\right]$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1}{\sqrt{-1+x^2}\,\left(1+x^2\right)^2},\,x,\,-9,\,9\right\}$$

$$-\frac{x\sqrt{-1+x^2}}{4+4\,x^2}+\frac{3\,\text{ArcTanh}\left[\frac{\sqrt{2}\,x}{\sqrt{-1+x^2}}\right]}{4\sqrt{2}}$$

$$\frac{\sqrt{-1+x^2}}{8\,(i-x)}-\frac{\sqrt{-1+x^2}}{8\,(i+x)}+\frac{3\,i\,\text{ArcTan}\left[\frac{1-i\,x}{\sqrt{2}\,\sqrt{-1+x^2}}\right]}{8\sqrt{2}}-\frac{3\,i\,\text{ArcTan}\left[\frac{1+i\,x}{\sqrt{2}\,\sqrt{-1+x^2}}\right]}{8\sqrt{2}}$$

Unable to integrate:

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

$$\frac{2-4\,x}{5\left(\sqrt{x}+\sqrt{-1+x^2}\right)}+\frac{1}{25}\sqrt{-110+50\sqrt{5}}\,\text{ArcTan}\left[\frac{1}{2}\sqrt{2+2\sqrt{5}}\,\sqrt{x}\right]-\frac{1}{50}\sqrt{-110+50\sqrt{5}}\,\text{ArcTan}\left[\frac{\sqrt{-2+2\sqrt{5}}\,\sqrt{-1+x^2}}{2-\left(1-\sqrt{5}\right)x}\right]-$$

$$\frac{1}{25}\sqrt{110+50\sqrt{5}}\,\text{ArcTanh}\left[\frac{1}{2}\sqrt{-2+2\sqrt{5}}\,\sqrt{x}\right]-\frac{1}{50}\sqrt{110+50\sqrt{5}}\,\text{ArcTanh}\left[\frac{\sqrt{2+2\sqrt{5}}\,\sqrt{-1+x^2}}{2-x-\sqrt{5}\,x}\right]$$

$$2\,\text{Subst}\left[\text{Int}\left[\frac{x}{\sqrt{-1+x^4}\,\left(x+\sqrt{-1+x^4}\right)^2},\,x\right],\,x,\,\sqrt{x}\right]$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{\left(\sqrt{x}-\sqrt{-1+x^2}\right)^2}{\left(1+x-x^2\right)^2\sqrt{-1+x^2}},\,x,\,-50,\,50\right\}$$

$$\frac{2-4\,x}{5\left(\sqrt{x}+\sqrt{-1+x^2}\right)}+\frac{1}{25}\sqrt{-110+50\sqrt{5}}\,\text{ArcTan}\left[\frac{1}{2}\sqrt{2+2\sqrt{5}}\,\sqrt{x}\right]-\frac{1}{50}\sqrt{-110+50\sqrt{5}}\,\text{ArcTan}\left[\frac{\sqrt{-2+2\sqrt{5}}\,\sqrt{-1+x^2}}{2-\left(1-\sqrt{5}\right)x}\right]-$$

$$\frac{1}{25}\sqrt{110+50\sqrt{5}}\,\text{ArcTanh}\left[\frac{1}{2}\sqrt{-2+2\sqrt{5}}\,\sqrt{x}\right]-\frac{1}{50}\sqrt{110+50\sqrt{5}}\,\text{ArcTanh}\left[\frac{\sqrt{2+2\sqrt{5}}\,\sqrt{-1+x^2}}{2-x-\sqrt{5}\,x}\right]$$

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

$$\frac{1}{25}\,\sqrt{-110+50\,\sqrt{5}}\;\text{ArcTan}\left[\frac{1}{2}\,\sqrt{2+2\,\sqrt{5}}\;\sqrt{x}\right]-\frac{1}{5}\,\sqrt{-2+2\,\sqrt{5}}\;\text{ArcTan}\left[\frac{\sqrt{2+2\,\sqrt{5}}\;\left(2-\left(1-\sqrt{5}\right)\,x\right)}{4\,\sqrt{-1+x^2}}\right]+$$

$$\frac{3}{50}\,\sqrt{10+10\,\sqrt{5}}\;\text{ArcTan}\left[\frac{\sqrt{2+2\,\sqrt{5}}\;\left(2-\left(1-\sqrt{5}\right)\,x\right)}{4\,\sqrt{-1+x^2}}\right]-\frac{1}{25}\,\sqrt{110+50\,\sqrt{5}}\;\text{ArcTanh}\left[\frac{1}{2}\,\sqrt{-2+2\,\sqrt{5}}\;\sqrt{x}\right]-$$

$$\frac{1}{5}\,\sqrt{2+2\,\sqrt{5}}\;\text{ArcTanh}\left[\frac{\sqrt{-2+2\,\sqrt{5}}\;\left(2-\left(1+\sqrt{5}\right)\,x\right)}{4\,\sqrt{-1+x^2}}\right]+\frac{3}{50}\,\sqrt{-10+10\,\sqrt{5}}\;\text{ArcTanh}\left[\frac{\sqrt{-2+2\,\sqrt{5}}\;\left(2-\left(1+\sqrt{5}\right)\,x\right)}{4\,\sqrt{-1+x^2}}\right]$$