Rubi 3 Test Suite Results

Indefinite Integration Problems Involving Hyperbolic Functions

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1}{a+c\,\text{Sech}[x]+b\,\text{Tanh}[x]},\ x,\ -8,\ 8\right\}$$

$$\frac{a\,x}{a^2-b^2}-\frac{2\,a\,c\,\text{ArcTan}\left[\frac{b+(a-c)\,\text{Tanh}\left[\frac{x}{2}\right]}{\sqrt{a^2-b^2-c^2}}\right]}{\left(a^2-b^2\right)\sqrt{a^2-b^2-c^2}}-\frac{b\,\text{Log}[c+a\,\text{Cosh}[x]+b\,\text{Sinh}[x]]}{a^2-b^2}$$

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

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1}{a+b\,\text{Coth}[x]+c\,\text{Csch}[x]},\ x,\ -8,\ 8\right\}$$

$$\frac{a\,x}{a^2-b^2}-\frac{2\,a\,c\,\text{ArcTan}\left[\frac{a+(b-c)\,\text{Tanh}\left[\frac{x}{2}\right]}{\sqrt{-a^2+b^2-c^2}}\right]}{\left(a^2-b^2\right)\sqrt{-a^2+b^2-c^2}}-\frac{b\,\text{Log}[c+b\,\text{Cosh}[x]+a\,\text{Sinh}[x]]}{a^2-b^2}$$

$$\frac{2\,a\,c\,\text{ArcTanh}\left[\frac{a+(b-c)\,\text{Tanh}\left[\frac{x}{2}\right]}{\sqrt{a^2-b^2+c^2}}\right]}{\left(a^2-b^2\right)\sqrt{a^2-b^2+c^2}}-\frac{\text{Log}\left[1-\text{Tanh}\left[\frac{x}{2}\right]\right]}{a+b}+\frac{\text{Log}\left[1+\text{Tanh}\left[\frac{x}{2}\right]\right]}{a-b}-\frac{b\,\text{Log}\left[b+c+2\,a\,\text{Tanh}\left[\frac{x}{2}\right]+(b-c)\,\text{Tanh}\left[\frac{x}{2}\right]^2\right]}{a^2-b^2}$$

Unable to integrate:

$$\{x\,\text{Cosh}[2\,x]\,\text{Sech}[x],\ x,\ -1,\ 0\}$$

$$-2\,\text{Cosh}[x]+i\,x\,\text{Log}\left[1-i\,e^{-x}\right]-i\,x\,\text{Log}\left[1+i\,e^{-x}\right]+i\,\text{PolyLog}\left[2,\ -i\,e^{-x}\right]-i\,\text{PolyLog}\left[2,\ i\,e^{-x}\right]+2\,x\,\text{Sinh}[x]$$

$$\text{Int}[x\,\text{Cosh}[2\,x]\,\text{Sech}[x],\ x]$$

Unable to integrate:

$$\left\{x\,\text{Cosh}[2\,x]\,\text{Sech}[x]^3,\ x,\ -1,\ 0\right\}$$

$$3\,x\,\text{ArcTan}\left[e^x\right]-\frac{3}{2}\,i\,\text{PolyLog}\left[2,\ -i\,e^x\right]+\frac{3}{2}\,i\,\text{PolyLog}\left[2,\ i\,e^x\right]-\frac{\text{Sech}[x]}{2}-\frac{1}{2}\,x\,\text{Sech}[x]\,\text{Tanh}[x]$$

$$\text{Int}\left[x\,\text{Cosh}[2\,x]\,\text{Sech}[x]^3,\ x\right]$$

Unable to integrate:

$$\left\{\frac{x\,\text{Cosh}[x]-\text{Sinh}[x]}{(x-\text{Sinh}[x])^2},\ x,\ -7,\ 7\right\}$$

$$\frac{x}{x-\text{Sinh}[x]}$$

$$-\text{Int}\left[\frac{1}{x-\text{Sinh}[x]},x\right]+\text{Int}\left[\frac{\text{Cosh}[x]}{x-\text{Sinh}[x]},x\right]+\text{Log}[-x+\text{Sinh}[x]]+\frac{x}{x-\text{Sinh}[x]}$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{\text{Sech}[x]^2\left(2-\text{Tanh}[x]^2\right)}{1-\text{Tanh}[x]^2},x,-4,4\right\}$$

$$x+\text{Tanh}[x]$$

$$\text{ArcTanh}[\text{Tanh}[x]]+\text{Tanh}[x]$$

Valid but unnecessarily complicated antiderivative:

$$\left\{\frac{1+\text{Sinh}[x]^2}{1+\text{Cosh}[x]+\text{Sinh}[x]},x,-13,13\right\}$$

$$\frac{3x}{4}+\frac{\text{Cosh}[x]}{2}-\frac{\text{Cosh}[x]^2}{8}-\text{Log}[1+\text{Cosh}[x]+\text{Sinh}[x]]+\frac{1}{4}\text{Cosh}[x]\,\text{Sinh}[x]-\frac{\text{Sinh}[x]^2}{8}$$

$$\frac{1}{4}\text{Log}\left[1-\text{Tanh}\left[\frac{x}{2}\right]\right]+\frac{3}{4}\text{Log}\left[1+\text{Tanh}\left[\frac{x}{2}\right]\right]+\frac{1}{2\left(1-\text{Tanh}\left[\frac{x}{2}\right]\right)}-\frac{1}{2\left(1+\text{Tanh}\left[\frac{x}{2}\right]\right)^2}+\frac{1}{1+\text{Tanh}\left[\frac{x}{2}\right]}$$