Mathematica 11.3 Integration Test Results

Test results for the 151 problems in "5.2.5 Inverse cosine functions.m"

Problem 5: Result more than twice size of optimal antiderivative.

$$\int \frac{a + b \operatorname{ArcCos}[c x]}{x \left(d - c^2 d x^2\right)} \, dx$$

Optimal (type 4, 71 leaves, 7 steps):

$$\frac{2 \left(a + b \operatorname{ArcCos}[c x]\right) \operatorname{ArcTanh}\left[e^{2 i \operatorname{ArcCos}[c x]}\right]}{d} - \frac{i b \operatorname{PolyLog}\left[2, -e^{2 i \operatorname{ArcCos}[c x]}\right]}{2 d} + \frac{i b \operatorname{PolyLog}\left[2, e^{2 i \operatorname{ArcCos}[c x]}\right]}{2 d}$$

Result (type 4, 143 leaves):

$$-\frac{1}{2 d}\left(2 b \operatorname{ArcCos}[c x] \operatorname{Log}\left[1 - e^{i \operatorname{ArcCos}[c x]}\right] + 2 b \operatorname{ArcCos}[c x] \operatorname{Log}\left[1 + e^{i \operatorname{ArcCos}[c x]}\right] - 2 b \operatorname{ArcCos}[c x] \operatorname{Log}\left[1 + e^{2 i \operatorname{ArcCos}[c x]}\right] - 2 a \operatorname{Log}[x] + a \operatorname{Log}\left[1 - c^2 x^2\right] - 2 i b \operatorname{PolyLog}\left[2, -e^{i \operatorname{ArcCos}[c x]}\right] - 2 i b \operatorname{PolyLog}\left[2, e^{i \operatorname{ArcCos}[c x]}\right] + i b \operatorname{PolyLog}\left[2, -e^{2 i \operatorname{ArcCos}[c x]}\right]\right)$$

Problem 24: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(d - c^2 d x^2\right)^{3/2} \left(a + b \operatorname{ArcCos}[c x]\right)}{f + g x} \, dx$$

Optimal (type 4, 1064 leaves, 29 steps):

$$-\frac{a\,d\,(c\,f-g)\,(c\,f+g)\,\sqrt{d-c^2\,d\,x^2}}{g^3}+\frac{b\,c\,d\,x\,\sqrt{d-c^2\,d\,x^2}}{3\,g\,\sqrt{1-c^2\,x^2}}-\frac{b\,c\,d\,(c\,f-g)\,(c\,f+g)\,x\,\sqrt{d-c^2\,d\,x^2}}{g^3\,\sqrt{1-c^2\,x^2}}+$$

$$\frac{b\,c^3\,d\,f\,x^2\,\sqrt{d-c^2\,d\,x^2}}{4\,g^2\,\sqrt{1-c^2\,x^2}}-\frac{b\,c^3\,d\,x^3\,\sqrt{d-c^2\,d\,x^2}}{9\,g\,\sqrt{1-c^2\,x^2}}-\frac{b\,d\,(c\,f-g)\,(c\,f+g)\,\sqrt{d-c^2\,d\,x^2}\,\text{ArcCos}[c\,x]}{g^3}+$$

$$\frac{c^2\,d\,f\,x\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)}{2\,g^2}+\frac{d\,\left(1-c^2\,x^2\right)\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)}{3\,g}-$$

$$\frac{c\,d\,f\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)^2}{4\,b\,g^2\,\sqrt{1-c^2\,x^2}}+\frac{c\,d\,(c\,f-g)\,(c\,f+g)\,x\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)^2}{2\,b\,g^3\,\sqrt{1-c^2\,x^2}}+$$

$$\frac{d\,\left(c^2\,f^2-g^2\right)^2\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)^2}{2\,b\,c\,g^4\,(f+g\,x)\,\sqrt{1-c^2\,x^2}}+$$

$$\frac{d\,(c\,f-g)\,(c\,f+g)\,\sqrt{1-c^2\,x^2}\,\sqrt{d-c^2\,d\,x^2}\,\left(a+b\,\text{ArcCos}[c\,x]\right)^2}{2\,b\,c\,g^2\,(f+g\,x)}+$$

$$\frac{a\,d\,\left(c^2\,f^2-g^2\right)^{3/2}\,\sqrt{d-c^2\,d\,x^2}\,\text{ArcTan}\left[\frac{g+c^2\,f\,x}{\sqrt{c^2\,f^2-g^2}\,\sqrt{1-c^2\,x^2}}\right]}{g^4\,\sqrt{1-c^2\,x^2}}+\frac{1}{g^4\,\sqrt{1-c^2\,x^2}}$$

$$i\,b\,d\,\left(c^2\,f^2-g^2\right)^{3/2}\,\sqrt{d-c^2\,d\,x^2}\,\text{ArcCos}[c\,x]\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]-$$

$$\frac{1}{g^4\,\sqrt{1-c^2\,x^2}}i\,b\,d\,\left(c^2\,f^2-g^2\right)^{3/2}\,\sqrt{d-c^2\,d\,x^2}\,\text{ArcCos}[c\,x]\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]+$$

$$\frac{b\,d\,\left(c^2\,f^2-g^2\right)^{3/2}\,\sqrt{d-c^2\,d\,x^2}\,\text{PolyLog}\left[2,\,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{g^4\,\sqrt{1-c^2\,x^2}}-$$

$$\frac{b\,d\,\left(c^2\,f^2-g^2\right)^{3/2}\,\sqrt{d-c^2\,d\,x^2}\,\text{PolyLog}\left[2,\,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{g^4\,\sqrt{1-c^2\,x^2}}$$

Result (type 4, 3034 leaves):

$$\sqrt{-d\,\left(-1+c^2\,x^2\right)}\,\left(\frac{a\,d\,\left(-3\,c^2\,f^2+4\,g^2\right)}{3\,g^3}+\frac{a\,c^2\,d\,f\,x}{2\,g^2}-\frac{a\,c^2\,d\,x^2}{3\,g}\right)+$$

$$\frac{a\,c\,d^{3/2}\,f\,\left(2\,c^2\,f^2-3\,g^2\right)\,\text{ArcTan}\left[\frac{c\,x\,\sqrt{-d\,\left(-1+c^2\,x^2\right)}}{\sqrt{d}\,\left(-1+c^2\,x^2\right)}\right]}{2\,g^4}+\frac{a\,d^{3/2}\,\left(-c^2\,f^2+g^2\right)^{3/2}\,\text{Log}[f+g\,x]}{g^4}-$$

$$\frac{1}{g^4}a\,d^{3/2}\,\left(-c^2\,f^2+g^2\right)^{3/2}\,\text{Log}\left[d\,g+c^2\,d\,f\,x+\sqrt{d}\,\sqrt{-c^2\,f^2+g^2}\,\sqrt{-d\,\left(-1+c^2\,x^2\right)}\,\right]-\frac{1}{2\,g^2}$$

$$b\,d\,\sqrt{d\,\left(1-c^2\,x^2\right)}\,\left(-\frac{2\,c\,g\,x}{\sqrt{1-c^2\,x^2}}-2\,g\,\text{ArcCos}[c\,x]+\frac{c\,f\,\text{ArcCos}[c\,x]^2}{\sqrt{1-c^2\,x^2}}+\frac{1}{\sqrt{-c^2\,f^2+g^2}\,\sqrt{1-c^2\,x^2}}\right.$$

$$2\left(-c\,f+g\right)\left(c\,f+g\right)\left(2\,\text{ArcCos}[c\,x]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\right.$$

$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+\right.$$

$$\left.2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}[c\,x]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}[c\,x]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\right]+$$

$$i\left(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\right]-$$

$$\left.\left.\text{PolyLog}\left[2,\,\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\Big/\right.\right.$$

$$\left.\left.\left.\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\right]\right)\right)\right)+\frac{1}{72\,\sqrt{1-c^2\,x^2}}$$

$$b\,d\,\sqrt{d\,\left(1-c^2\,x^2\right)}\,\left(\frac{1}{\sqrt{-c^2\,f^2+g^2}}\,9\,\left(2\,\text{ArcCos}[c\,x]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\right.\right.$$

$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+\right.$$

$$\left.2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\,\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\,\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]+$$

$$i\,\left(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$

$$\text{PolyLog}\left[2,\,\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\right)+$$

$$\frac{1}{g^4}\left(18\,c\,g\,\left(-4\,c^2\,f^2+g^2\right)\,x+18\,g\,\left(-4\,c^2\,f^2+g^2\right)\,\sqrt{1-c^2\,x^2}\,\text{ArcCos}\left[c\,x\right]+\right.$$

$$18\,c\,f\,\left(2\,c^2\,f^2-g^2\right)\,\text{ArcCos}\left[c\,x\right]^2+9\,c\,f\,g^2\,\text{Cos}\left[2\,\text{ArcCos}\left[c\,x\right]\right]-$$

$$\left.2\,g^3\,\text{Cos}\left[3\,\text{ArcCos}\left[c\,x\right]\right]-\frac{1}{\sqrt{-c^2\,f^2+g^2}}\right.$$

$$9\left(8c^4f^4-8c^2f^2g^2+g^4\right)\left(2\,\text{ArcCos}[cx]\,\text{ArcTanh}\left[\frac{(cf+g)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]-2\,\text{ArcCos}\left[-\frac{cf}{g}\right]\text{ArcTanh}\left[\frac{(-cf+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]+\left(\text{ArcCos}\left[-\frac{cf}{g}\right]-2i\,\text{ArcTanh}\left[\frac{(cf+g)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]+2i\,\text{ArcTanh}\left[\frac{(-cf+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}i\,\text{ArcCos}[cx]}\sqrt{-c^2f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{cf+cgx}}\right]+\left(\text{ArcCos}\left[-\frac{cf}{g}\right]+2i\left(\text{ArcTanh}\left[\frac{(cf+g)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]-\text{ArcTanh}\left[\frac{(-cf+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}i\,\text{ArcCos}[cx]}\sqrt{-c^2f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{cf+cgx}}\right]-\left(\text{ArcCos}\left[-\frac{cf}{g}\right]-2i\,\text{ArcTanh}\left[\frac{(-cf+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]\right)\text{Log}\left[\left((cf+g)\left(-icf+ig+\sqrt{-c^2f^2+g^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\Big/\left(g\left(cf+g+\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\right]-\left(\text{ArcCos}\left[-\frac{cf}{g}\right]+2i\,\text{ArcTanh}\left[\frac{(-cf+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]}{\sqrt{-c^2f^2+g^2}}\right]\right)\text{Log}\left[\left((cf+g)\left(icf-ig+\sqrt{-c^2f^2+g^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\Big/\left(g\left(cf+g+\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\right]+i\left(\text{PolyLog}\left[2,\left(\left(cf-i\sqrt{-c^2f^2+g^2}\right)\left(cf+g-\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\Big/\left(g\left(cf+g+\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\right]-\text{PolyLog}\left[2,\left(\left(cf+i\sqrt{-c^2f^2+g^2}\right)\left(cf+g-\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\Big/\left(g\left(cf+g+\sqrt{-c^2f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[cx]\right]\right)\right)\right]\right)+18\,cfg^2\,\text{ArcCos}[cx]\,\text{Sin}[2\,\text{ArcCos}[cx]]-6g^3\,\text{ArcCos}[cx]\,\text{Sin}[3\,\text{ArcCos}[cx]]\Bigg)\Bigg)$$

Problem 28: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(d - c^2 d x^2\right)^{5/2} \left(a + b \operatorname{ArcCos}[c x]\right)}{f + g x} \, dx$$

Optimal (type 4, 1637 leaves, 37 steps):

$$\frac{a d^2 \left(c^2 f^2 - g^2\right)^2 \sqrt{d - c^2 d x^2}}{g^5} - \frac{2 b c d^2 x \sqrt{d - c^2 d x^2}}{15 g \sqrt{1 - c^2 x^2}} - \frac{b c d^2 \left(c^2 f^2 - 2 g^2\right) x \sqrt{d - c^2 d x^2}}{3 g^3 \sqrt{1 - c^2 x^2}} +$$
$$\frac{b c d^2 \left(c^2 f^2 - g^2\right)^2 x \sqrt{d - c^2 d x^2}}{g^5 \sqrt{1 - c^2 x^2}} + \frac{b c^3 d^2 f x^2 \sqrt{d - c^2 d x^2}}{16 g^2 \sqrt{1 - c^2 x^2}} - \frac{b c^3 d^2 f \left(c^2 f^2 - 2 g^2\right) x^2 \sqrt{d - c^2 d x^2}}{4 g^4 \sqrt{1 - c^2 x^2}} -$$
$$\frac{b c^3 d^2 x^3 \sqrt{d - c^2 d x^2}}{45 g \sqrt{1 - c^2 x^2}} + \frac{b c^3 d^2 \left(c^2 f^2 - 2 g^2\right) x^3 \sqrt{d - c^2 d x^2}}{9 g^3 \sqrt{1 - c^2 x^2}} - \frac{b c^5 d^2 f x^4 \sqrt{d - c^2 d x^2}}{16 g^2 \sqrt{1 - c^2 x^2}} +$$
$$\frac{b c^5 d^2 x^5 \sqrt{d - c^2 d x^2}}{25 g \sqrt{1 - c^2 x^2}} + \frac{b d^2 \left(c^2 f^2 - g^2\right)^2 \sqrt{d - c^2 d x^2} \operatorname{ArcCos}[c x]}{g^5} +$$
$$\frac{c^2 d^2 f x \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{8 g^2} - \frac{c^2 d^2 f \left(c^2 f^2 - 2 g^2\right) x \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{2 g^4} -$$
$$\frac{c^4 d^2 f x^3 \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{4 g^2} - \frac{d^2 \left(1 - c^2 x^2\right) \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{3 g} -$$
$$\frac{d^2 \left(c^2 f^2 - 2 g^2\right) \left(1 - c^2 x^2\right) \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{3 g^3} +$$
$$\frac{d^2 \left(1 - c^2 x^2\right)^2 \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)}{5 g} + \frac{c d^2 f \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)^2}{16 b g^2 \sqrt{1 - c^2 x^2}} +$$
$$\frac{c d^2 f \left(c^2 f^2 - 2 g^2\right) \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)^2}{4 b g^4 \sqrt{1 - c^2 x^2}} -$$
$$\frac{c d^2 \left(c^2 f^2 - g^2\right)^2 x \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)^2}{2 b g^5 \sqrt{1 - c^2 x^2}} -$$
$$\frac{d^2 \left(c^2 f^2 - g^2\right)^3 \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)^2}{2 b c g^6 \left(f + g x\right) \sqrt{1 - c^2 x^2}} -$$
$$\frac{d^2 \left(c^2 f^2 - g^2\right)^2 \sqrt{1 - c^2 x^2} \sqrt{d - c^2 d x^2} \left(a + b \operatorname{ArcCos}[c x]\right)^2}{2 b c g^4 \left(f + g x\right)} -$$
$$\frac{a d^2 \left(c^2 f^2 - g^2\right)^{5/2} \sqrt{d - c^2 d x^2} \operatorname{ArcTan}\left[\frac{g + c^2 f x}{\sqrt{c^2 f^2 - g^2} \sqrt{1 - c^2 x^2}}\right]}{g^6 \sqrt{1 - c^2 x^2}} -$$
$$\frac{i b d^2 \left(c^2 f^2 - g^2\right)^{5/2} \sqrt{d - c^2 d x^2} \operatorname{ArcCos}[c x] \operatorname{Log}\left[1 + \frac{e^{i \operatorname{ArcCos}[c x]} g}{c f - \sqrt{c^2 f^2 - g^2}}\right]}{g^6 \sqrt{1 - c^2 x^2}} +$$

$$\frac{i\, b\, d^2 \left(c^2 f^2 - g^2\right)^{5/2} \sqrt{d - c^2 d x^2}\ \text{ArcCos}[c x]\ \text{Log}\left[1 + \frac{e^{i\,\text{ArcCos}[c x]}\, g}{c f + \sqrt{c^2 f^2 - g^2}}\right]}{g^6 \sqrt{1 - c^2 x^2}} -$$

$$\frac{b\, d^2 \left(c^2 f^2 - g^2\right)^{5/2} \sqrt{d - c^2 d x^2}\ \text{PolyLog}\left[2, -\frac{e^{i\,\text{ArcCos}[c x]}\, g}{c f - \sqrt{c^2 f^2 - g^2}}\right]}{g^6 \sqrt{1 - c^2 x^2}} +$$

$$\frac{b\, d^2 \left(c^2 f^2 - g^2\right)^{5/2} \sqrt{d - c^2 d x^2}\ \text{PolyLog}\left[2, -\frac{e^{i\,\text{ArcCos}[c x]}\, g}{c f + \sqrt{c^2 f^2 - g^2}}\right]}{g^6 \sqrt{1 - c^2 x^2}}$$

Result (type 4, 7206 leaves) :

$$\sqrt{-d\left(-1 + c^2 x^2\right)}\ \left(\frac{a\, d^2 \left(15\, c^4 f^4 - 35\, c^2 f^2 g^2 + 23\, g^4\right)}{15\, g^5} - \right.$$

$$\left. \frac{a\, c^2 d^2 f \left(4\, c^2 f^2 - 9\, g^2\right) x}{8\, g^4} - \frac{a\, c^2 d^2 \left(-5\, c^2 f^2 + 11\, g^2\right) x^2}{15\, g^3} - \frac{a\, c^4 d^2 f\, x^3}{4\, g^2} + \frac{a\, c^4 d^2 x^4}{5\, g}\right) -$$

$$\frac{a\, c\, d^{5/2} f \left(8\, c^4 f^4 - 20\, c^2 f^2 g^2 + 15\, g^4\right) \text{ArcTan}\left[\frac{c x \sqrt{-d\left(-1 + c^2 x^2\right)}}{\sqrt{d}\left(-1 + c^2 x^2\right)}\right]}{8\, g^6} +$$

$$\frac{a\, d^{5/2} \left(-c^2 f^2 + g^2\right)^{5/2} \text{Log}[f + g x]}{g^6} - \frac{1}{g^6}$$

$$a\, d^{5/2} \left(-c^2 f^2 + g^2\right)^{5/2} \text{Log}\left[d\, g + c^2 d\, f\, x + \sqrt{d}\ \sqrt{-c^2 f^2 + g^2}\ \sqrt{-d\left(-1 + c^2 x^2\right)}\ \right] - \frac{1}{2\, g^2}$$

$$b\, d^2 \sqrt{d\left(1 - c^2 x^2\right)}\ \left(-\frac{2\, c\, g\, x}{\sqrt{1 - c^2 x^2}} - 2\, g\, \text{ArcCos}[c x] + \frac{c\, f\, \text{ArcCos}[c x]^2}{\sqrt{1 - c^2 x^2}} + \frac{1}{\sqrt{-c^2 f^2 + g^2}\ \sqrt{1 - c^2 x^2}}\right.$$

$$2\left(-c f + g\right)\left(c f + g\right)\left(2\, \text{ArcCos}[c x]\ \text{ArcTanh}\left[\frac{\left(c f + g\right) \text{Cot}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2 + g^2}}\right] - \right.$$

$$2\, \text{ArcCos}\left[-\frac{c f}{g}\right] \text{ArcTanh}\left[\frac{\left(-c f + g\right) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2 + g^2}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right] - 2\, i\, \text{ArcTanh}\left[\frac{\left(c f + g\right) \text{Cot}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2 + g^2}}\right] + \right.$$

$$\left. 2\, i\, \text{ArcTanh}\left[\frac{\left(-c f + g\right) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2 + g^2}}\right]\right) \text{Log}\left[\frac{e^{-\frac{1}{2} i\, \text{ArcCos}[c x]} \sqrt{-c^2 f^2 + g^2}}{\sqrt{2}\ \sqrt{g}\ \sqrt{c f + c g x}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right] + 2\, i \left(\text{ArcTanh}\left[\frac{\left(c f + g\right) \text{Cot}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2 + g^2}}\right] - \text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]+$$

$$i\,\left(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$

$$\text{PolyLog}\left[2,\,\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left.\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\right)\right)\right)+\frac{1}{36\,\sqrt{1-c^2\,x^2}}$$

$$b\,d^2\,\sqrt{d\,\left(1-c^2\,x^2\right)}\,\left(\frac{1}{\sqrt{-c^2\,f^2+g^2}}\,9\,\left(2\,\text{ArcCos}\left[c\,x\right]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\right.\right.$$

$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+\right.$$

$$\left.2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$
$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$
$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]+$$
$$i\,\left(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-\text{PolyLog}\left[2,\,\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\right)+$$

$$\frac{1}{g^4}\left(18\,c\,g\,\left(-4\,c^2\,f^2+g^2\right)\,x+18\,g\,\left(-4\,c^2\,f^2+g^2\right)\,\sqrt{1-c^2\,x^2}\,\text{ArcCos}\left[c\,x\right]+18\,c\,f\,\left(2\,c^2\,f^2-g^2\right)\,\text{ArcCos}\left[c\,x\right]^2+9\,c\,f\,g^2\,\text{Cos}\left[2\,\text{ArcCos}\left[c\,x\right]\right]-2\,g^3\,\text{Cos}\left[3\,\text{ArcCos}\left[c\,x\right]\right]-\frac{1}{\sqrt{-c^2\,f^2+g^2}}\right.$$
$$9\,\left(8\,c^4\,f^4-8\,c^2\,f^2\,g^2+g^4\right)\,\left(2\,\text{ArcCos}\left[c\,x\right]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\,\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\right.$$

$$\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\Bigg)\Bigg)\,\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/$$

$$\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Bigg]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/$$

$$\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Bigg]+$$

$$i\,\Bigg(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/$$

$$\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Bigg]-\text{PolyLog}\left[2,\right.$$

$$\left.\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\Bigg)+$$

$$18\,c\,f\,g^2\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[2\,\text{ArcCos}\left[c\,x\right]\right]-6\,g^3\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[3\,\text{ArcCos}\left[c\,x\right]\right]\Bigg)\Bigg)-$$

$$b\,d^2\,\Bigg(\frac{1}{32\,g^2\,\sqrt{1-c^2\,x^2}}\,\sqrt{d\,\left(1-c^2\,x^2\right)}\,\Bigg(2\,c\,g\,x+2\,g\,\sqrt{1-c^2\,x^2}\,\text{ArcCos}\left[c\,x\right]-c\,f\,\text{ArcCos}\left[c\,x\right]^2-$$

$$\frac{1}{\sqrt{-c^2\,f^2+g^2}}\,\left(-2\,c^2\,f^2+g^2\right)\,\Bigg(2\,\text{ArcCos}\left[c\,x\right]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-$$

$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+$$

$$\Bigg(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+2\,i$$

$$\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\Bigg)\,\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]+$$

$$i\left(\text{PolyLog}\left[2,\,\left(\left(c\,f-i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-\text{PolyLog}\left[2,\,\left(\left(c\,f+i\,\sqrt{-c^2\,f^2+g^2}\right)\,\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\right)+$$

$$\frac{1}{16\,\sqrt{-c^2\,f^2+g^2}\,\sqrt{1-c^2\,x^2}}\sqrt{d\,\left(1-c^2\,x^2\right)}\left(2\,\text{ArcCos}\left[c\,x\right]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}\left[c\,x\right]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}\left[c\,x\right]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right]+2 i \left(\text{ArcTanh}\left[\frac{(c f+g) \text{Cot}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]-\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(-c f+g) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)\right) \text{Log}\left[\frac{e^{\frac{1}{2} i \text{ArcCos}[c x]} \sqrt{-c^2 f^2+g^2}}{\sqrt{2}\ \sqrt{g}\ \sqrt{c f+c g x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right]-2 i \text{ArcTanh}\left[\frac{(-c f+g) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left((c f+g)\left(-i c f+i g+\sqrt{-c^2 f^2+g^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right]+2 i \text{ArcTanh}\left[\frac{(-c f+g) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left((c f+g)\left(i c f-i g+\sqrt{-c^2 f^2+g^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]+$$

$$i\left(\text{PolyLog}\left[2,\left(\left(c f-i\sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]-$$

$$\text{PolyLog}\left[2,\left(\left(c f+i\sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\right.$$

$$\left.\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]\right)+$$

$$\frac{1}{144 g^4 \sqrt{1-c^2 x^2}}\sqrt{d\left(1-c^2 x^2\right)}\left(18 c g\left(-4 c^2 f^2+g^2\right) x+18 g\left(-4 c^2 f^2+g^2\right)\right.$$

$$\sqrt{1-c^2 x^2}\ \text{ArcCos}[c x]+18 c f\left(2 c^2 f^2-g^2\right)\text{ArcCos}[c x]^2+$$

$$9 c f g^2 \text{Cos}[2\,\text{ArcCos}[c x]]-2 g^3 \text{Cos}[3\,\text{ArcCos}[c x]]-\frac{1}{\sqrt{-c^2 f^2+g^2}}$$

$$9\left(8 c^4 f^4-8 c^2 f^2 g^2+g^4\right)\left(2\,\text{ArcCos}[c x]\,\text{ArcTanh}\left[\frac{(c f+g) \text{Cot}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]-\right.$$

$$\left.2\,\text{ArcCos}\left[-\frac{c f}{g}\right]\text{ArcTanh}\left[\frac{(-c f+g) \text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]+\right.$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{(c\,f+g)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-c\,f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}i\,\text{ArcCos}[c\,x]}\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(c\,f+g)\,\text{Cot}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]-\text{ArcTanh}\left[\frac{(-c\,f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\text{Log}\left[\frac{e^{\frac{1}{2}i\,\text{ArcCos}[c\,x]}\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]-2\,i\,\text{ArcTanh}\left[\frac{(-c\,f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\left((c\,f+g)\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-c\,f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\text{Log}\left[\left((c\,f+g)\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\right]+$$

$$i\left(\text{PolyLog}\left[2,\left(\left(c\,f-i\sqrt{-c^2\,f^2+g^2}\right)\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\right]-\text{PolyLog}\left[2,\left(\left(c\,f+i\sqrt{-c^2\,f^2+g^2}\right)\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c\,x]\right]\right)\right)\right]\right)+$$

$$18\,c\,f\,g^2\,\text{ArcCos}[c\,x]\,\text{Sin}[2\,\text{ArcCos}[c\,x]]-6\,g^3\,\text{ArcCos}[c\,x]\,\text{Sin}[3\,\text{ArcCos}[c\,x]]\Bigg)+$$

$$\frac{1}{32\sqrt{1-c^2\,x^2}}\sqrt{d\,(1-c^2\,x^2)}\left(-\frac{2\,c\,\left(16\,c^4\,f^4-12\,c^2\,f^2\,g^2+g^4\right)x}{g^5}-\frac{32\,c^4\,f^4\sqrt{1-c^2\,x^2}\,\text{ArcCos}[c\,x]}{g^5}+\right.$$

$$\frac{24\,c^2\,f^2\,\sqrt{1-c^2\,x^2}\,\text{ArcCos}[c\,x]}{g^3} -$$
$$\frac{2\,\sqrt{1-c^2\,x^2}\,\text{ArcCos}[c\,x]}{g} + \frac{16\,c^5\,f^5\,\text{ArcCos}[c\,x]^2}{g^6} -$$
$$\frac{16\,c^3\,f^3\,\text{ArcCos}[c\,x]^2}{g^4} + \frac{3\,c\,f\,\text{ArcCos}[c\,x]^2}{g^2} -$$
$$\frac{2\,c\,f\,\left(-2\,c^2\,f^2+g^2\right)\,\text{Cos}[2\,\text{ArcCos}[c\,x]]}{g^4} -$$
$$\frac{8\,c^2\,f^2\,\text{Cos}[3\,\text{ArcCos}[c\,x]]}{9\,g^3} + \frac{2\,\text{Cos}[3\,\text{ArcCos}[c\,x]]}{9\,g} +$$
$$\frac{c\,f\,\text{Cos}[4\,\text{ArcCos}[c\,x]]}{4\,g^2} - \frac{2\,\text{Cos}[5\,\text{ArcCos}[c\,x]]}{25\,g} +$$
$$\frac{1}{g^6\,\sqrt{-c^2\,f^2+g^2}}\left(-2\,c^2\,f^2+g^2\right)\left(16\,c^4\,f^4-16\,c^2\,f^2\,g^2+g^4\right)$$
$$\left(2\,\text{ArcCos}[c\,x]\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right] -\right.$$
$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right] +$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] - 2\,i\,\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right] + 2\,i\right.$$
$$\left.\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\,\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}[c\,x]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right] +$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] + 2\,i\,\left(\text{ArcTanh}\left[\frac{\left(c\,f+g\right)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right] -\right.\right.$$
$$\left.\left.\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)\right)\,\text{Log}\left[\frac{e^{\frac{1}{2}\,i\,\text{ArcCos}[c\,x]}\,\sqrt{-c^2\,f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,f+c\,g\,x}}\right] -$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] - 2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$
$$\text{Log}\left[\left(\left(c\,f+g\right)\,\left(-i\,c\,f+i\,g+\sqrt{-c^2\,f^2+g^2}\right)\,\left(-i+\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\Big/\right.$$
$$\left.\left(g\,\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]\right)\right)\right] -$$
$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] + 2\,i\,\text{ArcTanh}\left[\frac{\left(-c\,f+g\right)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left(\left(c\,f+g\right)\left(i\,c\,f-i\,g+\sqrt{-c^2\,f^2+g^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]+$$
$$i\left(\text{PolyLog}\left[2,\left(\left(c\,f-i\sqrt{-c^2\,f^2+g^2}\right)\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]-\text{PolyLog}\left[2,\left(\left(c\,f+i\sqrt{-c^2\,f^2+g^2}\right)\left(c\,f+g-\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\Big/\left(g\left(c\,f+g+\sqrt{-c^2\,f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}\left[c\,x\right]\right]\right)\right)\right]\right)+$$
$$\frac{8\,c^3\,f^3\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[2\,\text{ArcCos}\left[c\,x\right]\right]}{g^4}-\frac{4\,c\,f\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[2\,\text{ArcCos}\left[c\,x\right]\right]}{g^2}-$$
$$\frac{8\,c^2\,f^2\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[3\,\text{ArcCos}\left[c\,x\right]\right]}{3\,g^3}+$$
$$\frac{2\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[3\,\text{ArcCos}\left[c\,x\right]\right]}{3\,g}+$$
$$\frac{c\,f\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[4\,\text{ArcCos}\left[c\,x\right]\right]}{g^2}-$$
$$\frac{2\,\text{ArcCos}\left[c\,x\right]\,\text{Sin}\left[5\,\text{ArcCos}\left[c\,x\right]\right]}{5\,g}\Bigg)\Bigg)$$

Problem 32: Result more than twice size of optimal antiderivative.

$$\int\frac{a+b\,\text{ArcCos}\left[c\,x\right]}{\left(f+g\,x\right)\sqrt{d-c^2\,d\,x^2}}\,dx$$

Optimal (type 4, 370 leaves, 10 steps):

$$\frac{i\sqrt{1-c^2\,x^2}\,\left(a+b\,\text{ArcCos}\left[c\,x\right]\right)\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}\left[c\,x\right]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{\sqrt{c^2\,f^2-g^2}\,\sqrt{d-c^2\,d\,x^2}}-$$
$$\frac{i\sqrt{1-c^2\,x^2}\,\left(a+b\,\text{ArcCos}\left[c\,x\right]\right)\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}\left[c\,x\right]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{\sqrt{c^2\,f^2-g^2}\,\sqrt{d-c^2\,d\,x^2}}+$$
$$\frac{b\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}\left[c\,x\right]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{\sqrt{c^2\,f^2-g^2}\,\sqrt{d-c^2\,d\,x^2}}-\frac{b\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}\left[c\,x\right]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{\sqrt{c^2\,f^2-g^2}\,\sqrt{d-c^2\,d\,x^2}}$$

Result (type 4, 930 leaves):

$$\frac{1}{\sqrt{-c^2 f^2+g^2}}\left(\frac{a \operatorname{Log}[f+g x]}{\sqrt{d}}-\frac{a \operatorname{Log}\left[d\left(g+c^2 f x\right)+\sqrt{d}\ \sqrt{-c^2 f^2+g^2}\ \sqrt{d-c^2 d x^2}\right]}{\sqrt{d}}-\right.$$

$$\frac{1}{\sqrt{d-c^2 d x^2}} b \sqrt{1-c^2 x^2}\left(2 \operatorname{ArcCos}[c x] \operatorname{ArcTanh}\left[\frac{\left(c f+g\right) \operatorname{Cot}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]-\right.$$

$$2 \operatorname{ArcCos}\left[-\frac{c f}{g}\right] \operatorname{ArcTanh}\left[\frac{\left(-c f+g\right) \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]+$$

$$\left(\operatorname{ArcCos}\left[-\frac{c f}{g}\right]-2 i \operatorname{ArcTanh}\left[\frac{\left(c f+g\right) \operatorname{Cot}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]+\right.$$

$$\left.2 i \operatorname{ArcTanh}\left[\frac{\left(-c f+g\right) \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right) \operatorname{Log}\left[\frac{e^{-\frac{1}{2} i \operatorname{ArcCos}[c x]} \sqrt{-c^2 f^2+g^2}}{\sqrt{2}\ \sqrt{g}\ \sqrt{c\left(f+g x\right)}}\right]+$$

$$\left(\operatorname{ArcCos}\left[-\frac{c f}{g}\right]+2 i\left(\operatorname{ArcTanh}\left[\frac{\left(c f+g\right) \operatorname{Cot}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]-\right.\right.$$

$$\left.\left.\operatorname{ArcTanh}\left[\frac{\left(-c f+g\right) \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)\right) \operatorname{Log}\left[\frac{e^{\frac{1}{2} i \operatorname{ArcCos}[c x]} \sqrt{-c^2 f^2+g^2}}{\sqrt{2}\ \sqrt{g}\ \sqrt{c\left(f+g x\right)}}\right]-$$

$$\left(\operatorname{ArcCos}\left[-\frac{c f}{g}\right]-2 i \operatorname{ArcTanh}\left[\frac{\left(-c f+g\right) \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\operatorname{Log}\left[\left(\left(c f+g\right)\left(-i c f+i g+\sqrt{-c^2 f^2+g^2}\right)\left(-i+\operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right) \Big/\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right)\right]-$$

$$\left(\operatorname{ArcCos}\left[-\frac{c f}{g}\right]+2 i \operatorname{ArcTanh}\left[\frac{\left(-c f+g\right) \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\operatorname{Log}\left[\left(\left(c f+g\right)\left(i c f-i g+\sqrt{-c^2 f^2+g^2}\right)\left(i+\operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right) \Big/\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right)\right]+$$

$$i\left(\operatorname{PolyLog}\left[2,\ \left(\left(c f-i \sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right) \Big/\right.\right.$$

$$\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right)\right]-$$

$$\operatorname{PolyLog}\left[2,\ \left(\left(c f+i \sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right) \Big/\right.$$

$$\left.\left.\left.\left.\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\ \operatorname{Tan}\left[\frac{1}{2} \operatorname{ArcCos}[c x]\right]\right)\right)\right]\right)\right)\right)$$

Problem 33: Result more than twice size of optimal antiderivative.

$$\int \frac{a + b\,\text{ArcCos}[c\,x]}{(f + g\,x)^2\,\sqrt{d - c^2\,d\,x^2}}\,dx$$

Optimal (type 4, 496 leaves, 13 steps):

$$\frac{g\,(1 - c^2\,x^2)\,(a + b\,\text{ArcCos}[c\,x])}{(c^2\,f^2 - g^2)\,(f + g\,x)\,\sqrt{d - c^2\,d\,x^2}} + \frac{i\,c^2\,f\,\sqrt{1 - c^2\,x^2}\,(a + b\,\text{ArcCos}[c\,x])\,\text{Log}\left[1 + \frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f - \sqrt{c^2\,f^2 - g^2}}\right]}{(c^2\,f^2 - g^2)^{3/2}\,\sqrt{d - c^2\,d\,x^2}} -$$

$$\frac{i\,c^2\,f\,\sqrt{1 - c^2\,x^2}\,(a + b\,\text{ArcCos}[c\,x])\,\text{Log}\left[1 + \frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f + \sqrt{c^2\,f^2 - g^2}}\right]}{(c^2\,f^2 - g^2)^{3/2}\,\sqrt{d - c^2\,d\,x^2}} + \frac{b\,c\,\sqrt{1 - c^2\,x^2}\,\text{Log}[f + g\,x]}{(c^2\,f^2 - g^2)\,\sqrt{d - c^2\,d\,x^2}} +$$

$$\frac{b\,c^2\,f\,\sqrt{1 - c^2\,x^2}\,\text{PolyLog}\left[2, -\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f - \sqrt{c^2\,f^2 - g^2}}\right]}{(c^2\,f^2 - g^2)^{3/2}\,\sqrt{d - c^2\,d\,x^2}} - \frac{b\,c^2\,f\,\sqrt{1 - c^2\,x^2}\,\text{PolyLog}\left[2, -\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f + \sqrt{c^2\,f^2 - g^2}}\right]}{(c^2\,f^2 - g^2)^{3/2}\,\sqrt{d - c^2\,d\,x^2}}$$

Result (type 4, 1108 leaves):

$$-\frac{a\,g\,\sqrt{d - c^2\,d\,x^2}}{d\,(-c^2\,f^2 + g^2)\,(f + g\,x)} - \frac{a\,c^2\,f\,\text{Log}[f + g\,x]}{\sqrt{d}\,(-c^2\,f^2 + g^2)^{3/2}} -$$

$$\frac{a\,c^2\,f\,\text{Log}\left[d\,(g + c^2\,f\,x) + \sqrt{d}\,\sqrt{-c^2\,f^2 + g^2}\,\sqrt{d - c^2\,d\,x^2}\right]}{\sqrt{d}\,(c\,f - g)\,(c\,f + g)\,\sqrt{-c^2\,f^2 + g^2}} -$$

$$\frac{1}{\sqrt{d - c^2\,d\,x^2}}\,b\,c\,\sqrt{1 - c^2\,x^2}\left(-\frac{g\,\sqrt{1 - c^2\,x^2}\,\text{ArcCos}[c\,x]}{(c\,f - g)\,(c\,f + g)\,(c\,f + c\,g\,x)} - \frac{\text{Log}\left[1 + \frac{g\,x}{f}\right]}{c^2\,f^2 - g^2} -\right.$$

$$\frac{1}{(-c^2\,f^2 + g^2)^{3/2}}\,c\,f\left(2\,\text{ArcCos}[c\,x]\,\text{ArcTanh}\left[\frac{(c\,f + g)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2 + g^2}}\right] -\right.$$

$$2\,\text{ArcCos}\left[-\frac{c\,f}{g}\right]\text{ArcTanh}\left[\frac{(-c\,f + g)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2 + g^2}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] - 2\,i\,\text{ArcTanh}\left[\frac{(c\,f + g)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2 + g^2}}\right] +\right.$$

$$\left.2\,i\,\text{ArcTanh}\left[\frac{(-c\,f + g)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2 + g^2}}\right]\right)\text{Log}\left[\frac{e^{-\frac{1}{2}\,i\,\text{ArcCos}[c\,x]}\,\sqrt{-c^2\,f^2 + g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,(f + g\,x)}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{c\,f}{g}\right] + 2\,i\left(\text{ArcTanh}\left[\frac{(c\,f + g)\,\text{Cot}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{-c^2\,f^2 + g^2}}\right] - \text{ArcTanh}\left[\right.\right.\right.$$

$$\left(\frac{(-c f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\Bigg)\Bigg)\,\text{Log}\left[\frac{e^{\frac{1}{2} i \text{ArcCos}[c x]}\sqrt{-c^2 f^2+g^2}}{\sqrt{2}\,\sqrt{g}\,\sqrt{c\,(f+g x)}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right]-2 i\,\text{ArcTanh}\left[\frac{(-c f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left((c f+g)\left(-i c f+i g+\sqrt{-c^2 f^2+g^2}\right)\left(-i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{c f}{g}\right]+2 i\,\text{ArcTanh}\left[\frac{(-c f+g)\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]}{\sqrt{-c^2 f^2+g^2}}\right]\right)$$

$$\text{Log}\left[\left((c f+g)\left(i c f-i g+\sqrt{-c^2 f^2+g^2}\right)\left(i+\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]+$$

$$i\left(\text{PolyLog}\left[2,\left(\left(c f-i\sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]-\right.$$

$$\left.\text{PolyLog}\left[2,\left(\left(c f+i\sqrt{-c^2 f^2+g^2}\right)\left(c f+g-\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\Big/\left(g\left(c f+g+\sqrt{-c^2 f^2+g^2}\,\text{Tan}\left[\frac{1}{2}\text{ArcCos}[c x]\right]\right)\right)\right]\right)\Bigg)$$

Problem 35: Unable to integrate problem.

$$\int\frac{(a+b\,\text{ArcCos}[c x])^2\,\text{Log}\left[h\,(f+g x)^m\right]}{\sqrt{1-c^2 x^2}}\,dx$$

Optimal (type 4, 496 leaves, 13 steps):

$$-\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])^4}{12\,b^2\,c}+\frac{m\,(a+b\,\text{ArcCos}[c\,x])^3\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{3\,b\,c}+$$
$$\frac{m\,(a+b\,\text{ArcCos}[c\,x])^3\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{3\,b\,c}-\frac{(a+b\,\text{ArcCos}[c\,x])^3\,\text{Log}\left[h\,(f+g\,x)^m\right]}{3\,b\,c}-$$
$$\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])^2\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}-$$
$$\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])^2\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}+$$
$$\frac{2\,b\,m\,(a+b\,\text{ArcCos}[c\,x])\,\text{PolyLog}\left[3,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}+$$
$$\frac{2\,b\,m\,(a+b\,\text{ArcCos}[c\,x])\,\text{PolyLog}\left[3,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}+$$
$$\frac{2\,i\,b^2\,m\,\text{PolyLog}\left[4,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}+\frac{2\,i\,b^2\,m\,\text{PolyLog}\left[4,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}$$

Result (type 8, 37 leaves):

$$\int\frac{(a+b\,\text{ArcCos}[c\,x])^2\,\text{Log}\left[h\,(f+g\,x)^m\right]}{\sqrt{1-c^2\,x^2}}\,dx$$

Problem 36: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{ArcCos}[c\,x])\,\text{Log}\left[h\,(f+g\,x)^m\right]}{\sqrt{1-c^2\,x^2}}\,dx$$

Optimal (type 4, 374 leaves, 11 steps):

$$-\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])^3}{6\,b^2\,c}+\frac{m\,(a+b\,\text{ArcCos}[c\,x])^2\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{2\,b\,c}+$$

$$\frac{m\,(a+b\,\text{ArcCos}[c\,x])^2\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{2\,b\,c}-\frac{(a+b\,\text{ArcCos}[c\,x])^2\,\text{Log}\left[h\,(f+g\,x)^m\right]}{2\,b\,c}-$$

$$\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}-$$

$$\frac{i\,m\,(a+b\,\text{ArcCos}[c\,x])\,\text{PolyLog}\left[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}+$$

$$\frac{b\,m\,\text{PolyLog}\left[3,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}+\frac{b\,m\,\text{PolyLog}\left[3,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}$$

Result (type 4, 1248 leaves):

$$\frac{1}{6\,c}\left(-3\,i\,a\,m\,\text{ArcCos}[c\,x]^2-i\,b\,m\,\text{ArcCos}[c\,x]^3+\right.$$

$$24\,i\,a\,m\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(c\,f-g)\,\text{Tan}\left[\frac{1}{2}\,\text{ArcCos}[c\,x]\right]}{\sqrt{c^2\,f^2-g^2}}\right]+3\,b\,m\,\text{ArcCos}[c\,x]^2$$

$$\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]+6\,a\,m\,\text{ArcCos}[c\,x]\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)}{g}\right]+$$

$$3\,b\,m\,\text{ArcCos}[c\,x]^2\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)}{g}\right]+$$

$$12\,a\,m\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\right]\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)}{g}\right]+$$

$$12\,b\,m\,\text{ArcCos}[c\,x]\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\right]\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)}{g}\right]+$$

$$3\,b\,m\,\text{ArcCos}[c\,x]^2\,\text{Log}\left[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]+$$

$$6\,a\,m\,\text{ArcCos}[c\,x]\,\text{Log}\Big[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]+$$

$$3\,b\,m\,\text{ArcCos}[c\,x]^2\,\text{Log}\Big[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]-$$

$$12\,a\,m\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\Big]\,\text{Log}\Big[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]-$$

$$12\,b\,m\,\text{ArcCos}[c\,x]\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\Big]\,\text{Log}\Big[1+\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]-$$

$$6\,a\,m\,\text{ArcCos}[c\,x]\,\text{Log}[f+g\,x]-6\,a\,m\,\text{ArcSin}[c\,x]\,\text{Log}[f+g\,x]-$$
$$3\,b\,\text{ArcCos}[c\,x]^2\,\text{Log}\left[h\,(f+g\,x)^m\right]+6\,a\,\text{ArcSin}[c\,x]\,\text{Log}\left[h\,(f+g\,x)^m\right]-$$

$$3\,b\,m\,\text{ArcCos}[c\,x]^2\,\text{Log}\Big[1+\frac{\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)\left(c\,x+i\,\sqrt{1-c^2\,x^2}\right)}{g}\Big]-$$

$$12\,b\,m\,\text{ArcCos}[c\,x]\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\Big]\,\text{Log}\Big[1+\frac{\left(c\,f-\sqrt{c^2\,f^2-g^2}\right)\left(c\,x+i\,\sqrt{1-c^2\,x^2}\right)}{g}\Big]-$$

$$3\,b\,m\,\text{ArcCos}[c\,x]^2\,\text{Log}\Big[1+\frac{\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)\left(c\,x+i\,\sqrt{1-c^2\,x^2}\right)}{g}\Big]+$$

$$12\,b\,m\,\text{ArcCos}[c\,x]\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{c\,f}{g}}}{\sqrt{2}}\Big]\,\text{Log}\Big[1+\frac{\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)\left(c\,x+i\,\sqrt{1-c^2\,x^2}\right)}{g}\Big]-$$

$$6\,i\,b\,m\,\text{ArcCos}[c\,x]\,\text{PolyLog}\Big[2,\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{-c\,f+\sqrt{c^2\,f^2-g^2}}\Big]-$$

$$6\,i\,a\,m\,\text{PolyLog}\Big[2,\frac{e^{i\,\text{ArcCos}[c\,x]}\left(-c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]-$$

$$6\,i\,b\,m\,\text{ArcCos}[c\,x]\,\text{PolyLog}\Big[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\Big]-$$

$$6\,i\,a\,m\,\text{PolyLog}\Big[2,-\frac{e^{i\,\text{ArcCos}[c\,x]}\left(c\,f+\sqrt{c^2\,f^2-g^2}\right)}{g}\Big]+$$

$$6\,b\,m\,\text{PolyLog}\left[3,\ \frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{-c\,f+\sqrt{c^2\,f^2-g^2}}\right]+6\,b\,m\,\text{PolyLog}\left[3,\ -\frac{e^{i\,\text{ArcCos}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]\Bigg)$$

Problem 37: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Log}\left[h\,\left(f+g\,x\right)^m\right]}{\sqrt{1-c^2\,x^2}}\,dx$$

Optimal (type 4, 237 leaves, 9 steps):

$$\frac{i\,m\,\text{ArcSin}[c\,x]^2}{2\,c}-\frac{m\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-\frac{i\,e^{i\,\text{ArcSin}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}-\frac{m\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-\frac{i\,e^{i\,\text{ArcSin}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}+$$
$$\frac{\text{ArcSin}[c\,x]\,\text{Log}\left[h\,\left(f+g\,x\right)^m\right]}{c}+\frac{i\,m\,\text{PolyLog}\left[2,\ \frac{i\,e^{i\,\text{ArcSin}[c\,x]}\,g}{c\,f-\sqrt{c^2\,f^2-g^2}}\right]}{c}+\frac{i\,m\,\text{PolyLog}\left[2,\ \frac{i\,e^{i\,\text{ArcSin}[c\,x]}\,g}{c\,f+\sqrt{c^2\,f^2-g^2}}\right]}{c}$$

Result (type 1, 1 leaves):

???

Problem 54: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{\text{ArcCos}[a\,x]}{\left(c+d\,x^2\right)^{3/2}}\,dx$$

Optimal (type 3, 66 leaves, 6 steps):

$$\frac{x\,\text{ArcCos}[a\,x]}{c\,\sqrt{c+d\,x^2}}-\frac{\text{ArcTan}\left[\frac{\sqrt{d}\,\sqrt{1-a^2\,x^2}}{a\,\sqrt{c+d\,x^2}}\right]}{c\,\sqrt{d}}$$

Result (type 6, 159 leaves):

$$\frac{1}{\sqrt{c+d\,x^2}}x\left(\left(2\,a\,x\,\text{AppellF1}\left[1,\ \frac{1}{2},\ \frac{1}{2},\ 2,\ a^2\,x^2,\ -\frac{d\,x^2}{c}\right]\right)\Big/\right.$$
$$\left(\sqrt{1-a^2\,x^2}\,\left(4\,c\,\text{AppellF1}\left[1,\ \frac{1}{2},\ \frac{1}{2},\ 2,\ a^2\,x^2,\ -\frac{d\,x^2}{c}\right]+x^2\,\left(-d\,\text{AppellF1}\left[2,\ \frac{1}{2},\ \frac{3}{2},\ 3,\right.\right.\right.\right.$$
$$\left.\left.\left.\left.a^2\,x^2,\ -\frac{d\,x^2}{c}\right]+a^2\,c\,\text{AppellF1}\left[2,\ \frac{3}{2},\ \frac{1}{2},\ 3,\ a^2\,x^2,\ -\frac{d\,x^2}{c}\right]\right)\right)\right)+\frac{\text{ArcCos}[a\,x]}{c}\Bigg)$$

Problem 55: Result unnecessarily involves higher level functions.

$$\int \frac{\text{ArcCos}[a\,x]}{\left(c+d\,x^2\right)^{5/2}}\,dx$$

Optimal (type 3, 136 leaves, 7 steps):

$$-\frac{a\sqrt{1-a^2x^2}}{3c\left(a^2c+d\right)\sqrt{c+dx^2}}+\frac{x\,\text{ArcCos}[a\,x]}{3c\left(c+dx^2\right)^{3/2}}+\frac{2x\,\text{ArcCos}[a\,x]}{3c^2\sqrt{c+dx^2}}-\frac{2\,\text{ArcTan}\left[\frac{\sqrt{d}\sqrt{1-a^2x^2}}{a\sqrt{c+dx^2}}\right]}{3c^2\sqrt{d}}$$

Result (type 6, 216 leaves):

$$\frac{1}{3c^2\left(c+dx^2\right)^{3/2}}\left(-\frac{ac\sqrt{1-a^2x^2}\left(c+dx^2\right)}{a^2c+d}+\left(4acx^2\left(c+dx^2\right)\text{AppellF1}\left[1,\frac{1}{2},\frac{1}{2},2,a^2x^2,-\frac{dx^2}{c}\right]\right)\Big/\left(\sqrt{1-a^2x^2}\left(4c\,\text{AppellF1}\left[1,\frac{1}{2},\frac{1}{2},2,a^2x^2,-\frac{dx^2}{c}\right]+x^2\left(-d\,\text{AppellF1}\left[2,\frac{1}{2},\frac{3}{2},3,a^2x^2,-\frac{dx^2}{c}\right]+a^2c\,\text{AppellF1}\left[2,\frac{3}{2},\frac{1}{2},3,a^2x^2,-\frac{dx^2}{c}\right]\right)\right)\right)+\left(3cx+2dx^3\right)\text{ArcCos}[a\,x]\right)$$

Problem 56: Result unnecessarily involves higher level functions.

$$\int \frac{\text{ArcCos}[a\,x]}{\left(c+d\,x^2\right)^{7/2}}\,dx$$

Optimal (type 3, 211 leaves, 8 steps):

$$-\frac{a\sqrt{1-a^2x^2}}{15c\left(a^2c+d\right)\left(c+dx^2\right)^{3/2}}-\frac{2a\left(3a^2c+2d\right)\sqrt{1-a^2x^2}}{15c^2\left(a^2c+d\right)^2\sqrt{c+dx^2}}+$$

$$\frac{x\,\text{ArcCos}[a\,x]}{5c\left(c+dx^2\right)^{5/2}}+\frac{4x\,\text{ArcCos}[a\,x]}{15c^2\left(c+dx^2\right)^{3/2}}+\frac{8x\,\text{ArcCos}[a\,x]}{15c^3\sqrt{c+dx^2}}-\frac{8\,\text{ArcTan}\left[\frac{\sqrt{d}\sqrt{1-a^2x^2}}{a\sqrt{c+dx^2}}\right]}{15c^3\sqrt{d}}$$

Result (type 6, 277 leaves):

$$\frac{1}{15\,c^3\,\left(c+d\,x^2\right)^{5/2}}\left(-\frac{a\,c^2\,\sqrt{1-a^2\,x^2}\,\left(c+d\,x^2\right)}{a^2\,c+d}-\frac{2\,a\,c\,\left(3\,a^2\,c+2\,d\right)\,\sqrt{1-a^2\,x^2}\,\left(c+d\,x^2\right)^2}{\left(a^2\,c+d\right)^2}+\left(16\,a\,c\,x^2\,\left(c+d\,x^2\right)^2\,\text{AppellF1}\left[1,\frac{1}{2},\frac{1}{2},2,a^2\,x^2,-\frac{d\,x^2}{c}\right]\right)\Big/\left(\sqrt{1-a^2\,x^2}\,\left(4\,c\,\text{AppellF1}\left[1,\frac{1}{2},\frac{1}{2},2,a^2\,x^2,-\frac{d\,x^2}{c}\right]+x^2\left(-d\,\text{AppellF1}\left[2,\frac{1}{2},\frac{3}{2},3,a^2\,x^2,-\frac{d\,x^2}{c}\right]+a^2\,c\,\text{AppellF1}\left[2,\frac{3}{2},\frac{1}{2},3,a^2\,x^2,-\frac{d\,x^2}{c}\right]\right)\right)\right)+x\,\left(15\,c^2+20\,c\,d\,x^2+8\,d^2\,x^4\right)\,\text{ArcCos}\left[a\,x\right]\Bigg)$$

Problem 81: Result unnecessarily involves imaginary or complex numbers.

$$\int x^2\,\text{ArcCos}\left[a\,x^2\right]\,\mathbb{d}x$$

Optimal (type 4, 55 leaves, 4 steps):

$$-\frac{2\,x\,\sqrt{1-a^2\,x^4}}{9\,a}+\frac{1}{3}\,x^3\,\text{ArcCos}\left[a\,x^2\right]+\frac{2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{a}\,x\right],-1\right]}{9\,a^{3/2}}$$

Result (type 4, 63 leaves):

$$\frac{1}{9}\left(-\frac{2\,x\,\sqrt{1-a^2\,x^4}}{a}+3\,x^3\,\text{ArcCos}\left[a\,x^2\right]+\frac{2\,i\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-a}\,x\right],-1\right]}{(-a)^{3/2}}\right)$$

Problem 83: Result unnecessarily involves imaginary or complex numbers.

$$\int \text{ArcCos}\left[a\,x^2\right]\,\mathbb{d}x$$

Optimal (type 4, 43 leaves, 6 steps):

$$x\,\text{ArcCos}\left[a\,x^2\right]+\frac{2\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{a}\,x\right],-1\right]}{\sqrt{a}}-\frac{2\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{a}\,x\right],-1\right]}{\sqrt{a}}$$

Result (type 4, 56 leaves):

$$x\,\text{ArcCos}\left[a\,x^2\right]+\frac{1}{(-a)^{3/2}}2\,i\,a\left(\text{EllipticE}\left[i\,\text{ArcSinh}\left[\sqrt{-a}\,x\right],-1\right]-\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-a}\,x\right],-1\right]\right)$$

Problem 85: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\text{ArcCos}\left[a\,x^2\right]}{x^2}\,\mathbb{d}x$$

Optimal (type 4, 29 leaves, 3 steps):

$$-\frac{\text{ArcCos}\left[a\,x^2\right]}{x}-2\,\sqrt{a}\;\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{a}\;x\right],\,-1\right]$$

Result (type 4, 40 leaves):

$$-\frac{\text{ArcCos}\left[a\,x^2\right]+2\,i\,\sqrt{-a}\;x\;\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{-a}\;x\right],\,-1\right]}{x}$$

Problem 88: Result more than twice size of optimal antiderivative.

$$\int \text{ArcCos}\left[\frac{a}{x}\right]\,dx$$

Optimal (type 3, 27 leaves, 5 steps):

$$x\,\text{ArcSec}\left[\frac{x}{a}\right]-a\,\text{ArcTanh}\left[\sqrt{1-\frac{a^2}{x^2}}\,\right]$$

Result (type 3, 84 leaves):

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

Problem 135: Unable to integrate problem.

$$\int \frac{\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^3}{1-c^2\,x^2}\,dx$$

Optimal (type 4, 279 leaves, 8 steps):

$$\frac{i\,\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^4}{4\,b\,c}-\frac{\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^3\,\text{Log}\left[1+e^{2\,i\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{c}+$$

$$\frac{3\,i\,b\,\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^2\,\text{PolyLog}\left[2,\,-e^{2\,i\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{2\,c}-$$

$$\frac{3\,b^2\,\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)\,\text{PolyLog}\left[3,\,-e^{2\,i\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{2\,c}-\frac{3\,i\,b^3\,\text{PolyLog}\left[4,\,-e^{2\,i\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{4\,c}$$

Result (type 8, 42 leaves):

$$\int \frac{\left(a+b\,\text{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^3}{1-c^2\,x^2}\,dx$$

Problem 136: Unable to integrate problem.

$$\int \frac{\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^2}{1 - c^2\,x^2}\,dx$$

Optimal (type 4, 207 leaves, 7 steps):

$$\frac{i\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^3}{3\,b\,c} - \frac{\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^2 \operatorname{Log}\left[1 + e^{2\,i \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{c} +$$

$$\frac{i\,b\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right) \operatorname{PolyLog}\left[2, -e^{2\,i \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{c} - \frac{b^2 \operatorname{PolyLog}\left[3, -e^{2\,i \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{2\,c}$$

Result (type 8, 42 leaves):

$$\int \frac{\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^2}{1 - c^2\,x^2}\,dx$$

Problem 137: Unable to integrate problem.

$$\int \frac{a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}{1 - c^2\,x^2}\,dx$$

Optimal (type 4, 141 leaves, 6 steps):

$$\frac{i\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right)^2}{2\,b\,c} -$$

$$\frac{\left(a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]\right) \operatorname{Log}\left[1 + e^{2\,i \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{c} + \frac{i\,b \operatorname{PolyLog}\left[2, -e^{2\,i \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}\right]}{2\,c}$$

Result (type 8, 40 leaves):

$$\int \frac{a + b \operatorname{ArcCos}\left[\frac{\sqrt{1-c\,x}}{\sqrt{1+c\,x}}\right]}{1 - c^2\,x^2}\,dx$$

Problem 140: Attempted integration timed out after 120 seconds.

$$\int \operatorname{ArcCos}\left[c\,e^{a+b\,x}\right]\,dx$$

Optimal (type 4, 84 leaves, 6 steps):

$$-\frac{i\,\text{ArcCos}\left[c\,e^{a+b\,x}\right]^2}{2\,b}+\frac{\text{ArcCos}\left[c\,e^{a+b\,x}\right]\,\text{Log}\left[1+e^{2\,i\,\text{ArcCos}\left[c\,e^{a+b\,x}\right]}\right]}{b}-\frac{i\,\text{PolyLog}\left[2,\,-e^{2\,i\,\text{ArcCos}\left[c\,e^{a+b\,x}\right]}\right]}{2\,b}$$

Result (type 1, 1 leaves):

???

Problem 147: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \text{ArcCos}\left[\frac{c}{a+b\,x}\right]\,dx$$

Optimal (type 3, 48 leaves, 6 steps):

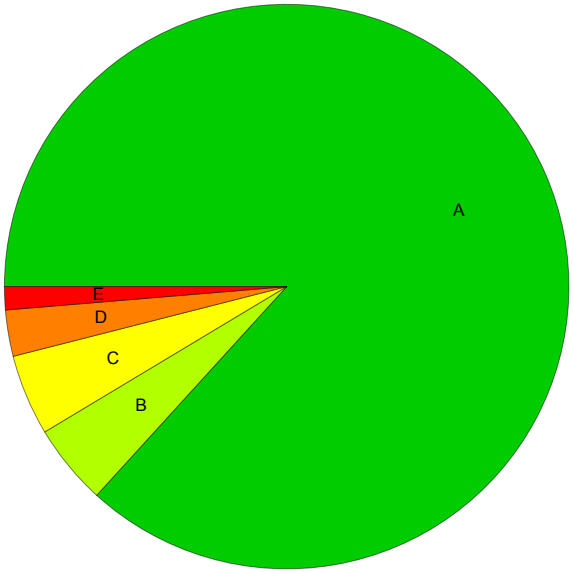
$$\frac{(a+b\,x)\,\text{ArcSec}\left[\frac{a}{c}+\frac{b\,x}{c}\right]}{b}-\frac{c\,\text{ArcTanh}\left[\sqrt{1-\frac{c^2}{(a+b\,x)^2}}\right]}{b}$$

Result (type 3, 167 leaves):

$$x\,\text{ArcCos}\left[\frac{c}{a+b\,x}\right]-\left(\left(a+b\,x\right)\sqrt{\frac{a^2-c^2+2\,a\,b\,x+b^2\,x^2}{\left(a+b\,x\right)^2}}\left(i\,a\,\text{Log}\left[-\frac{2\,b^2\left(-i\,c+\sqrt{a^2-c^2+2\,a\,b\,x+b^2\,x^2}\right)}{a\,\left(a+b\,x\right)}\right]+c\,\text{Log}\left[a+b\,x+\sqrt{a^2-c^2+2\,a\,b\,x+b^2\,x^2}\right]\right)\right)\Big/\left(b\sqrt{a^2-c^2+2\,a\,b\,x+b^2\,x^2}\right)$$

Summary of Integration Test Results

151 integration problems



A - 131 optimal antiderivatives

B - 7 more than twice size of optimal antiderivatives

C - 7 unnecessarily complex antiderivatives

D - 4 unable to integrate problems

E - 2 integration timeouts