Mathematica 11.3 Integration Test Results

Test results for the 595 problems in "5.1.4a (f x)^m (d-c^2 d x^2)^p (a+b arcsin(c x))^n.m"

Problem 29: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 144 leaves, 8 steps):

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

Result (type 4, 294 leaves):

$$-\frac{1}{4 c^4 d}\left(2 a c^2 x^2+b c x \sqrt{1-c^2 x^2}-b \text{ArcSin}[c x]+4 i b \pi \text{ArcSin}[c x]+2 b c^2 x^2 \text{ArcSin}[c x]-2 i b \text{ArcSin}[c x]^2+8 b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+2 b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+4 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-2 b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+4 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+2 a \text{Log}\left[1-c^2 x^2\right]-8 b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+2 b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2 \text{ArcSin}[c x]\right)\right]\right]-2 b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2 \text{ArcSin}[c x]\right)\right]\right]-4 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-4 i b \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]\right)$$

Problem 31: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 82 leaves, 5 steps):

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

Result (type 4, 244 leaves):

$$-\frac{1}{2 c^2 d}\left(2 i b \pi \text{ArcSin}[c x] - i b \text{ArcSin}[c x]^2 + 4 b \pi \text{Log}\left[1 + e^{-i \text{ArcSin}[c x]}\right] + b \pi \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] + 2 b \text{ArcSin}[c x] \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] - b \pi \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] + 2 b \text{ArcSin}[c x] \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] + a \text{Log}\left[1 - c^2 x^2\right] - 4 b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] + b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi + 2 \text{ArcSin}[c x]\right)\right]\right] - b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi + 2 \text{ArcSin}[c x]\right)\right]\right] - 2 i b \text{PolyLog}\left[2, -i e^{i \text{ArcSin}[c x]}\right] - 2 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)$$

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

$$\int \frac{a + b \text{ArcSin}[c x]}{d - c^2 d x^2} \, dx$$

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

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

Result (type 4, 207 leaves):

$$\frac{1}{2 c d}\left(-i b \pi \text{ArcSin}[c x] + b \pi \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] + 2 b \text{ArcSin}[c x] \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] + b \pi \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] - 2 b \text{ArcSin}[c x] \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] - a \text{Log}[1 - c x] + a \text{Log}[1 + c x] - b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi + 2 \text{ArcSin}[c x]\right)\right]\right] - b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi + 2 \text{ArcSin}[c x]\right)\right]\right] + 2 i b \text{PolyLog}\left[2, -i e^{i \text{ArcSin}[c x]}\right] - 2 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)$$

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

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

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

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

Result (type 4, 274 leaves):

$$-\frac{1}{2d}\Big(2\,i\,b\,\pi\,\text{ArcSin}[c\,x]+4\,b\,\pi\,\text{Log}\big[1+e^{-i\,\text{ArcSin}[c\,x]}\big]+b\,\pi\,\text{Log}\big[1-i\,e^{i\,\text{ArcSin}[c\,x]}\big]+2\,b\,\text{ArcSin}[c\,x]\,\text{Log}\big[1-i\,e^{i\,\text{ArcSin}[c\,x]}\big]-b\,\pi\,\text{Log}\big[1+i\,e^{i\,\text{ArcSin}[c\,x]}\big]+2\,b\,\text{ArcSin}[c\,x]\,\text{Log}\big[1+i\,e^{i\,\text{ArcSin}[c\,x]}\big]-2\,b\,\text{ArcSin}[c\,x]\,\text{Log}\big[1-e^{2\,i\,\text{ArcSin}[c\,x]}\big]-2\,a\,\text{Log}[x]+a\,\text{Log}\big[1-c^2\,x^2\big]-4\,b\,\pi\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]+b\,\pi\,\text{Log}\Big[-\text{Cos}\Big[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\Big]\Big]-b\,\pi\,\text{Log}\Big[\text{Sin}\Big[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\Big]\Big]-2\,i\,b\,\text{PolyLog}\big[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\big]-2\,i\,b\,\text{PolyLog}\big[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\big]+i\,b\,\text{PolyLog}\big[2,\,e^{2\,i\,\text{ArcSin}[c\,x]}\big]\Big)$$

Problem 34: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 116 leaves, 10 steps):

$$-\frac{a+b\,\text{ArcSin}[c\,x]}{d\,x}-\frac{2\,i\,c\,(a+b\,\text{ArcSin}[c\,x])\,\text{ArcTan}\big[e^{i\,\text{ArcSin}[c\,x]}\big]}{d}-\frac{b\,c\,\text{ArcTanh}\big[\sqrt{1-c^2\,x^2}\big]}{d}+\frac{i\,b\,c\,\text{PolyLog}\big[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\big]}{d}-\frac{i\,b\,c\,\text{PolyLog}\big[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\big]}{d}$$

Result (type 4, 268 leaves):

$$-\frac{1}{2\,d\,x}\Big(2\,a+2\,b\,\text{ArcSin}[c\,x]+i\,b\,c\,\pi\,x\,\text{ArcSin}[c\,x]-b\,c\,\pi\,x\,\text{Log}\big[1-i\,e^{i\,\text{ArcSin}[c\,x]}\big]-2\,b\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\big[1-i\,e^{i\,\text{ArcSin}[c\,x]}\big]-b\,c\,\pi\,x\,\text{Log}\big[1+i\,e^{i\,\text{ArcSin}[c\,x]}\big]+2\,b\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\big[1+i\,e^{i\,\text{ArcSin}[c\,x]}\big]-2\,b\,c\,x\,\text{Log}[x]+a\,c\,x\,\text{Log}[1-c\,x]-a\,c\,x\,\text{Log}[1+c\,x]+2\,b\,c\,x\,\text{Log}\Big[1+\sqrt{1-c^2\,x^2}\Big]+b\,c\,\pi\,x\,\text{Log}\Big[-\text{Cos}\Big[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\Big]\Big]+b\,c\,\pi\,x\,\text{Log}\Big[\text{Sin}\Big[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\Big]\Big]-2\,i\,b\,c\,x\,\text{PolyLog}\big[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\big]+2\,i\,b\,c\,x\,\text{PolyLog}\big[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\big]\Big)$$

Problem 35: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 124 leaves, 9 steps):

$$-\frac{b\,c\,\sqrt{1-c^2\,x^2}}{2\,d\,x}-\frac{a+b\,\text{ArcSin}[c\,x]}{2\,d\,x^2}-\frac{2\,c^2\,(a+b\,\text{ArcSin}[c\,x])\,\text{ArcTanh}\big[e^{2\,i\,\text{ArcSin}[c\,x]}\big]}{d}+\frac{i\,b\,c^2\,\text{PolyLog}\big[2,\,-e^{2\,i\,\text{ArcSin}[c\,x]}\big]}{2\,d}-\frac{i\,b\,c^2\,\text{PolyLog}\big[2,\,e^{2\,i\,\text{ArcSin}[c\,x]}\big]}{2\,d}$$

Result (type 4, 392 leaves):

$$-\frac{1}{2\,d\,x^2}\left(a+b\,c\,x\,\sqrt{1-c^2\,x^2}+b\,\text{ArcSin}[c\,x]+2\,i\,b\,c^2\,\pi\,x^2\,\text{ArcSin}[c\,x]+4\,b\,c^2\,\pi\,x^2\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+\right.$$
$$b\,c^2\,\pi\,x^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b\,c^2\,x^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$b\,c^2\,\pi\,x^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b\,c^2\,x^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$2\,b\,c^2\,x^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{2\,i\,\text{ArcSin}[c\,x]}\right]-2\,a\,c^2\,x^2\,\text{Log}[x]+a\,c^2\,x^2\,\text{Log}\left[1-c^2\,x^2\right]-$$
$$4\,b\,c^2\,\pi\,x^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+b\,c^2\,\pi\,x^2\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-$$
$$b\,c^2\,\pi\,x^2\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-2\,i\,b\,c^2\,x^2\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$\left.2\,i\,b\,c^2\,x^2\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+i\,b\,c^2\,x^2\,\text{PolyLog}\left[2,\,e^{2\,i\,\text{ArcSin}[c\,x]}\right]\right)$$

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

$$\int\frac{a+b\,\text{ArcSin}[c\,x]}{x^4\,\left(d-c^2\,d\,x^2\right)}\,dx$$

Optimal (type 4, 173 leaves, 15 steps):

$$-\frac{b\,c\,\sqrt{1-c^2\,x^2}}{6\,d\,x^2}-\frac{a+b\,\text{ArcSin}[c\,x]}{3\,d\,x^3}-\frac{c^2\,(a+b\,\text{ArcSin}[c\,x])}{d\,x}-$$
$$\frac{2\,i\,c^3\,(a+b\,\text{ArcSin}[c\,x])\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{d}-\frac{7\,b\,c^3\,\text{ArcTanh}\left[\sqrt{1-c^2\,x^2}\right]}{6\,d}+$$
$$\frac{i\,b\,c^3\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{d}-\frac{i\,b\,c^3\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{d}$$

Result (type 4, 363 leaves):

$$-\frac{1}{6\,d\,x^3}\left(2\,a+6\,a\,c^2\,x^2+b\,c\,x\,\sqrt{1-c^2\,x^2}+2\,b\,\text{ArcSin}[c\,x]+6\,b\,c^2\,x^2\,\text{ArcSin}[c\,x]+3\,i\,b\,c^3\,\pi\,x^3\,\text{ArcSin}[c\,x]-\right.$$
$$3\,b\,c^3\,\pi\,x^3\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-6\,b\,c^3\,x^3\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$3\,b\,c^3\,\pi\,x^3\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,b\,c^3\,x^3\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$7\,b\,c^3\,x^3\,\text{Log}[x]+3\,a\,c^3\,x^3\,\text{Log}[1-c\,x]-3\,a\,c^3\,x^3\,\text{Log}[1+c\,x]+7\,b\,c^3\,x^3\,\text{Log}\left[1+\sqrt{1-c^2\,x^2}\right]+$$
$$3\,b\,c^3\,\pi\,x^3\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+3\,b\,c^3\,\pi\,x^3\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-$$
$$\left.6\,i\,b\,c^3\,x^3\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,i\,b\,c^3\,x^3\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)$$

Problem 38: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 155 leaves, 8 steps):

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

Result (type 4, 334 leaves):

$$\frac{1}{4 c^4 d^2}\left(\frac{b \sqrt{1-c^2 x^2}}{-1+c x}+\frac{b \sqrt{1-c^2 x^2}}{1+c x}-\frac{2 a}{-1+c^2 x^2}+4 i b \pi \operatorname{ArcSin}[c x]+\frac{b \operatorname{ArcSin}[c x]}{1-c x}+\frac{b \operatorname{ArcSin}[c x]}{1+c x}-2 i b \operatorname{ArcSin}[c x]^2+8 b \pi \operatorname{Log}\left[1+e^{-i \operatorname{ArcSin}[c x]}\right]+2 b \pi \operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[c x]}\right]+4 b \operatorname{ArcSin}[c x] \operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[c x]}\right]-2 b \pi \operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[c x]}\right]+4 b \operatorname{ArcSin}[c x] \operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[c x]}\right]+2 a \operatorname{Log}\left[1-c^2 x^2\right]-8 b \pi \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} \operatorname{ArcSin}[c x]\right]\right]+2 b \pi \operatorname{Log}\left[-\operatorname{Cos}\left[\frac{1}{4} (\pi+2 \operatorname{ArcSin}[c x])\right]\right]-2 b \pi \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{4} (\pi+2 \operatorname{ArcSin}[c x])\right]\right]-4 i b \operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[c x]}\right]-4 i b \operatorname{PolyLog}\left[2, i e^{i \operatorname{ArcSin}[c x]}\right]\right)$$

Problem 39: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 144 leaves, 8 steps):

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

Result (type 4, 463 leaves):

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

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

$$\left(\frac{3\,i\,\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\right.$$

$$\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]}{c}+$$

$$\left.\frac{\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)-\frac{1}{4\,c^2}$$

$$\left(\frac{i\,\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\right.$$

$$\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]}{c}-$$

$$\left.\left.\frac{\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)\right)$$

Problem 41: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 141 leaves, 8 steps):

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

$$\frac{i\,b\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{2\,c\,d^2}-\frac{i\,b\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{2\,c\,d^2}$$

Result (type 4, 334 leaves):

$$-\frac{1}{4 d^2}\left(\frac{b\sqrt{1-c^2 x^2}}{c-c^2 x}+\frac{b\sqrt{1-c^2 x^2}}{c+c^2 x}+\frac{2 a x}{-1+c^2 x^2}+\frac{i b \pi \text{ArcSin}[c x]}{c}+\frac{b \text{ArcSin}[c x]}{c(-1+c x)}+\right.$$
$$\frac{b \text{ArcSin}[c x]}{c+c^2 x}-\frac{b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}-$$
$$\frac{b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}+\frac{2 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}+\frac{a \text{Log}[1-c x]}{c}-$$
$$\frac{a \text{Log}[1+c x]}{c}+\frac{b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]}{c}+\frac{b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]}{c}-$$
$$\left.\frac{2 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{c}+\frac{2 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]}{c}\right)$$

Problem 42: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 122 leaves, 9 steps):

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

Result (type 4, 364 leaves):

$$\frac{1}{4 d^2}\left(\frac{b\sqrt{1-c^2 x^2}}{-1+c x}+\frac{b\sqrt{1-c^2 x^2}}{1+c x}-\frac{2 a}{-1+c^2 x^2}-4 i b \pi \text{ArcSin}[c x]+\frac{b \text{ArcSin}[c x]}{1-c x}+\right.$$
$$\frac{b \text{ArcSin}[c x]}{1+c x}-8 b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]-2 b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-$$
$$4 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-$$
$$4 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+4 b \text{ArcSin}[c x] \text{Log}\left[1-e^{2 i \text{ArcSin}[c x]}\right]+4 a \text{Log}[x]-$$
$$2 a \text{Log}\left[1-c^2 x^2\right]+8 b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-2 b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+$$
$$2 b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+4 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+$$
$$\left.4 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]-2 i b \text{PolyLog}\left[2, e^{2 i \text{ArcSin}[c x]}\right]\right)$$

Problem 44: Result more than twice size of optimal antiderivative.

$$\int \frac{a+b \text{ArcSin}[c x]}{x^3\left(d-c^2 d x^2\right)^2} dx$$

Optimal (type 4, 159 leaves, 12 steps):

$$-\frac{b c}{2 d^2 x \sqrt{1-c^2 x^2}}+\frac{c^2 (a+b \text{ArcSin}[c x])}{d^2 (1-c^2 x^2)}-\frac{a+b \text{ArcSin}[c x]}{2 d^2 x^2 (1-c^2 x^2)}-\frac{4 c^2 (a+b \text{ArcSin}[c x]) \text{ArcTanh}[e^{2 i \text{ArcSin}[c x]}]}{d^2}+\frac{i b c^2 \text{PolyLog}[2,-e^{2 i \text{ArcSin}[c x]}]}{d^2}-\frac{i b c^2 \text{PolyLog}[2,e^{2 i \text{ArcSin}[c x]}]}{d^2}$$

Result (type 4, 461 leaves):

$$\frac{1}{4 d^2}\left(-\frac{2 a}{x^2}-\frac{2 b c \sqrt{1-c^2 x^2}}{x}+\frac{b c^2 \sqrt{1-c^2 x^2}}{-1+c x}+\frac{b c^2 \sqrt{1-c^2 x^2}}{1+c x}-\frac{2 a c^2}{-1+c^2 x^2}-8 i b c^2 \pi \text{ArcSin}[c x]-\frac{2 b \text{ArcSin}[c x]}{x^2}+\frac{b c^2 \text{ArcSin}[c x]}{1-c x}+\frac{b c^2 \text{ArcSin}[c x]}{1+c x}-16 b c^2 \pi \text{Log}[1+e^{-i \text{ArcSin}[c x]}]-4 b c^2 \pi \text{Log}[1-i e^{i \text{ArcSin}[c x]}]-8 b c^2 \text{ArcSin}[c x] \text{Log}[1-i e^{i \text{ArcSin}[c x]}]+4 b c^2 \pi \text{Log}[1+i e^{i \text{ArcSin}[c x]}]-8 b c^2 \text{ArcSin}[c x] \text{Log}[1+i e^{i \text{ArcSin}[c x]}]+8 b c^2 \text{ArcSin}[c x] \text{Log}[1-e^{2 i \text{ArcSin}[c x]}]+8 a c^2 \text{Log}[x]-4 a c^2 \text{Log}[1-c^2 x^2]+16 b c^2 \pi \text{Log}[\text{Cos}[\frac{1}{2} \text{ArcSin}[c x]]]-4 b c^2 \pi \text{Log}[-\text{Cos}[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])]]+4 b c^2 \pi \text{Log}[\text{Sin}[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])]]+8 i b c^2 \text{PolyLog}[2,-i e^{i \text{ArcSin}[c x]}]+8 i b c^2 \text{PolyLog}[2,i e^{i \text{ArcSin}[c x]}]-4 i b c^2 \text{PolyLog}[2,e^{2 i \text{ArcSin}[c x]}]\right)$$

Problem 46: Result more than twice size of optimal antiderivative.

$$\int \frac{x^4 (a+b \text{ArcSin}[c x])}{(d-c^2 d x^2)^3} \, dx$$

Optimal (type 4, 204 leaves, 12 steps):

$$-\frac{b}{12 c^5 d^3 (1-c^2 x^2)^{3/2}}+\frac{5 b}{8 c^5 d^3 \sqrt{1-c^2 x^2}}+\frac{x^3 (a+b \text{ArcSin}[c x])}{4 c^2 d^3 (1-c^2 x^2)^2}-\frac{3 x (a+b \text{ArcSin}[c x])}{8 c^4 d^3 (1-c^2 x^2)}-\frac{3 i (a+b \text{ArcSin}[c x]) \text{ArcTan}[e^{i \text{ArcSin}[c x]}]}{4 c^5 d^3}+\frac{3 i b \text{PolyLog}[2,-i e^{i \text{ArcSin}[c x]}]}{8 c^5 d^3}-\frac{3 i b \text{PolyLog}[2,i e^{i \text{ArcSin}[c x]}]}{8 c^5 d^3}$$

Result (type 4, 445 leaves):

$$\frac{1}{48 c^5 d^3}\left(-\frac{2 b \sqrt{1-c^2 x^2}}{(-1+c x)^2}+\frac{b c x \sqrt{1-c^2 x^2}}{(-1+c x)^2}-\frac{15 b \sqrt{1-c^2 x^2}}{-1+c x}-\frac{2 b \sqrt{1-c^2 x^2}}{(1+c x)^2}-\frac{b c x \sqrt{1-c^2 x^2}}{(1+c x)^2}+\frac{15 b \sqrt{1-c^2 x^2}}{1+c x}+\frac{12 a c x}{(-1+c^2 x^2)^2}+\frac{30 a c x}{-1+c^2 x^2}-9 i b \pi \text{ArcSin}[c x]+\frac{3 b \text{ArcSin}[c x]}{(-1+c x)^2}+\frac{15 b \text{ArcSin}[c x]}{-1+c x}-\frac{3 b \text{ArcSin}[c x]}{(1+c x)^2}+\frac{15 b \text{ArcSin}[c x]}{1+c x}+9 b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+18 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+9 b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-18 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-9 a \text{Log}[1-c x]+9 a \text{Log}[1+c x]-9 b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-9 b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+18 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-18 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)$$

Problem 48: Result more than twice size of optimal antiderivative.

$$\int \frac{x^2 (a+b \text{ArcSin}[c x])}{(d-c^2 d x^2)^3} dx$$

Optimal (type 4, 202 leaves, 10 steps):

$$-\frac{b}{12 c^3 d^3 (1-c^2 x^2)^{3/2}}+\frac{b}{8 c^3 d^3 \sqrt{1-c^2 x^2}}+\frac{x (a+b \text{ArcSin}[c x])}{4 c^2 d^3 (1-c^2 x^2)^2}-\frac{x (a+b \text{ArcSin}[c x])}{8 c^2 d^3 (1-c^2 x^2)}+\frac{i (a+b \text{ArcSin}[c x]) \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}-\frac{i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{8 c^3 d^3}+\frac{i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]}{8 c^3 d^3}$$

Result (type 4, 445 leaves):

$$\frac{1}{48 c^3 d^3}\left(-\frac{2 b \sqrt{1-c^2 x^2}}{(-1+c x)^2}+\frac{b c x \sqrt{1-c^2 x^2}}{(-1+c x)^2}-\frac{3 b \sqrt{1-c^2 x^2}}{-1+c x}-\frac{2 b \sqrt{1-c^2 x^2}}{(1+c x)^2}-\frac{b c x \sqrt{1-c^2 x^2}}{(1+c x)^2}+\frac{3 b \sqrt{1-c^2 x^2}}{1+c x}+\frac{12 a c x}{(-1+c^2 x^2)^2}+\frac{6 a c x}{-1+c^2 x^2}+3 i b \pi \text{ArcSin}[c x]+\frac{3 b \text{ArcSin}[c x]}{(-1+c x)^2}+\frac{3 b \text{ArcSin}[c x]}{-1+c x}-\frac{3 b \text{ArcSin}[c x]}{(1+c x)^2}+\frac{3 b \text{ArcSin}[c x]}{1+c x}-3 b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-6 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-3 b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+6 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+3 a \text{Log}[1-c x]-3 a \text{Log}[1+c x]+3 b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+3 b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-6 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+6 i b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)$$

Problem 50: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 196 leaves, 10 steps):

$$-\frac{b}{12\,c\,d^3\,\left(1-c^2\,x^2\right)^{3/2}}-\frac{3\,b}{8\,c\,d^3\,\sqrt{1-c^2\,x^2}}+\frac{x\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{4\,d^3\,\left(1-c^2\,x^2\right)^2}+\frac{3\,x\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{8\,d^3\,\left(1-c^2\,x^2\right)}-\frac{3\,i\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}+\frac{3\,i\,b\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{8\,c\,d^3}-\frac{3\,i\,b\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{8\,c\,d^3}$$

Result (type 4, 501 leaves):

$$-\frac{1}{16\,d^3}\left(\frac{2\,b\,\sqrt{1-c^2\,x^2}}{3\,c\,\left(-1+c\,x\right)^2}-\frac{b\,x\,\sqrt{1-c^2\,x^2}}{3\,\left(-1+c\,x\right)^2}+\frac{2\,b\,\sqrt{1-c^2\,x^2}}{3\,c\,\left(1+c\,x\right)^2}+\frac{b\,x\,\sqrt{1-c^2\,x^2}}{3\,\left(1+c\,x\right)^2}+\frac{3\,b\,\sqrt{1-c^2\,x^2}}{c-c^2\,x}+\frac{3\,b\,\sqrt{1-c^2\,x^2}}{c+c^2\,x}-\frac{4\,a\,x}{\left(-1+c^2\,x^2\right)^2}+\frac{6\,a\,x}{-1+c^2\,x^2}+\frac{3\,i\,b\,\pi\,\text{ArcSin}[c\,x]}{c}-\frac{b\,\text{ArcSin}[c\,x]}{c\,\left(-1+c\,x\right)^2}+\frac{b\,\text{ArcSin}[c\,x]}{c\,\left(1+c\,x\right)^2}-\frac{3\,b\,\text{ArcSin}[c\,x]}{c-c^2\,x}+\frac{3\,b\,\text{ArcSin}[c\,x]}{c+c^2\,x}-\frac{3\,b\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{6\,b\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{3\,b\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{6\,b\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{3\,a\,\text{Log}[1-c\,x]}{c}-\frac{3\,a\,\text{Log}[1+c\,x]}{c}+\frac{3\,b\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]}{c}+\frac{3\,b\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]}{c}-\frac{6\,i\,b\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{6\,i\,b\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)$$

Problem 51: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 173 leaves, 12 steps):

$$-\frac{b c x}{12 d^3 \left(1-c^2 x^2\right)^{3/2}}-\frac{2 b c x}{3 d^3 \sqrt{1-c^2 x^2}}+\frac{a+b \text{ArcSin}[c x]}{4 d^3 \left(1-c^2 x^2\right)^2}+\frac{a+b \text{ArcSin}[c x]}{2 d^3 \left(1-c^2 x^2\right)}-\frac{2 \left(a+b \text{ArcSin}[c x]\right) \text{ArcTanh}\left[e^{2 i \text{ArcSin}[c x]}\right]}{d^3}+\frac{i b \text{PolyLog}\left[2,-e^{2 i \text{ArcSin}[c x]}\right]}{2 d^3}-\frac{i b \text{PolyLog}\left[2,e^{2 i \text{ArcSin}[c x]}\right]}{2 d^3}$$

Result (type 4, 524 leaves):

$$\frac{1}{4 d^3}\left(-\frac{b \sqrt{1-c^2 x^2}}{6 (-1+c x)^2}+\frac{b c x \sqrt{1-c^2 x^2}}{12 (-1+c x)^2}+\frac{b \sqrt{1-c^2 x^2}}{6 (1+c x)^2}+\frac{b c x \sqrt{1-c^2 x^2}}{12 (1+c x)^2}+\frac{5 b \sqrt{1-c^2 x^2}}{-4+4 c x}+\frac{5 b \sqrt{1-c^2 x^2}}{4+4 c x}+\frac{a}{\left(-1+c^2 x^2\right)^2}-\frac{2 a}{-1+c^2 x^2}-4 i b \pi \text{ArcSin}[c x]+\frac{5 b \text{ArcSin}[c x]}{4-4 c x}+\frac{b \text{ArcSin}[c x]}{4 (-1+c x)^2}+\frac{b \text{ArcSin}[c x]}{4 (1+c x)^2}+\frac{5 b \text{ArcSin}[c x]}{4+4 c x}-8 b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]-2 b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-4 b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-4 b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+4 b \text{ArcSin}[c x] \text{Log}\left[1-e^{2 i \text{ArcSin}[c x]}\right]+4 a \text{Log}[x]-2 a \text{Log}\left[1-c^2 x^2\right]+8 b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-2 b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+2 b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+4 i b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+4 i b \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]-2 i b \text{PolyLog}\left[2,e^{2 i \text{ArcSin}[c x]}\right]\right)$$

Problem 52: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 242 leaves, 16 steps):

$$-\frac{b c}{12 d^3 \left(1-c^2 x^2\right)^{3/2}}-\frac{7 b c}{8 d^3 \sqrt{1-c^2 x^2}}-\frac{a+b \text{ArcSin}[c x]}{d^3 x \left(1-c^2 x^2\right)^2}+\frac{5 c^2 x \left(a+b \text{ArcSin}[c x]\right)}{4 d^3 \left(1-c^2 x^2\right)^2}+\frac{15 c^2 x \left(a+b \text{ArcSin}[c x]\right)}{8 d^3 \left(1-c^2 x^2\right)}-\frac{15 i c \left(a+b \text{ArcSin}[c x]\right) \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{4 d^3}-\frac{b c \text{ArcTanh}\left[\sqrt{1-c^2 x^2}\right]}{d^3}+\frac{15 i b c \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{8 d^3}-\frac{15 i b c \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]}{8 d^3}$$

Result (type 4, 520 leaves):

$$-\frac{1}{16\,d^3}\left(\frac{16\,a}{x}+\frac{2\,b\,c\,\sqrt{1-c^2\,x^2}}{3\,\left(-1+c\,x\right)^2}-\frac{b\,c^2\,x\,\sqrt{1-c^2\,x^2}}{3\,\left(-1+c\,x\right)^2}-\frac{7\,b\,c\,\sqrt{1-c^2\,x^2}}{-1+c\,x}+\frac{2\,b\,c\,\sqrt{1-c^2\,x^2}}{3\,\left(1+c\,x\right)^2}+\right.$$
$$\frac{b\,c^2\,x\,\sqrt{1-c^2\,x^2}}{3\,\left(1+c\,x\right)^2}+\frac{7\,b\,c\,\sqrt{1-c^2\,x^2}}{1+c\,x}-\frac{4\,a\,c^2\,x}{\left(-1+c^2\,x^2\right)^2}+\frac{14\,a\,c^2\,x}{-1+c^2\,x^2}+15\,i\,b\,c\,\pi\,\text{ArcSin}[c\,x]+$$
$$\frac{16\,b\,\text{ArcSin}[c\,x]}{x}-\frac{b\,c\,\text{ArcSin}[c\,x]}{\left(-1+c\,x\right)^2}+\frac{7\,b\,c\,\text{ArcSin}[c\,x]}{-1+c\,x}+\frac{b\,c\,\text{ArcSin}[c\,x]}{\left(1+c\,x\right)^2}+$$
$$\frac{7\,b\,c\,\text{ArcSin}[c\,x]}{1+c\,x}-15\,b\,c\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-30\,b\,c\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$15\,b\,c\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+30\,b\,c\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$16\,b\,c\,\text{Log}[x]+15\,a\,c\,\text{Log}[1-c\,x]-15\,a\,c\,\text{Log}[1+c\,x]+16\,b\,c\,\text{Log}\left[1+\sqrt{1-c^2\,x^2}\right]+$$
$$15\,b\,c\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]+15\,b\,c\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]-$$
$$\left.30\,i\,b\,c\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+30\,i\,b\,c\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)$$

Problem 53: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 248 leaves, 16 steps):

$$-\frac{b\,c}{2\,d^3\,x\,\left(1-c^2\,x^2\right)^{3/2}}+\frac{5\,b\,c^3\,x}{12\,d^3\,\left(1-c^2\,x^2\right)^{3/2}}-\frac{2\,b\,c^3\,x}{3\,d^3\,\sqrt{1-c^2\,x^2}}+\frac{3\,c^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{4\,d^3\,\left(1-c^2\,x^2\right)^2}-$$
$$\frac{a+b\,\text{ArcSin}[c\,x]}{2\,d^3\,x^2\,\left(1-c^2\,x^2\right)^2}+\frac{3\,c^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{2\,d^3\,\left(1-c^2\,x^2\right)}-\frac{6\,c^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{ArcTanh}\left[e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{d^3}+$$
$$\frac{3\,i\,b\,c^2\,\text{PolyLog}\left[2,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{2\,d^3}-\frac{3\,i\,b\,c^2\,\text{PolyLog}\left[2,e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{2\,d^3}$$

Result (type 4, 568 leaves):

$$\frac{1}{4 d^3}\left(-\frac{2 a}{x^2}+\frac{a c^2}{\left(-1+c^2 x^2\right)^2}-\frac{4 a c^2}{-1+c^2 x^2}+\frac{9 b c^2\left(\sqrt{1-c^2 x^2}-\text{ArcSin}[c x]\right)}{-4+4 c x}+\frac{9 b c^2\left(\sqrt{1-c^2 x^2}+\text{ArcSin}[c x]\right)}{4+4 c x}-\frac{2 b\left(c x \sqrt{1-c^2 x^2}+\text{ArcSin}[c x]\right)}{x^2}+\frac{b c^2\left((-2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]\right)}{12(-1+c x)^2}+\frac{b c^2\left((2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]\right)}{12(1+c x)^2}+12 a c^2 \text{Log}[x]-6 a c^2 \text{Log}\left[1-c^2 x^2\right]+3 b c^2\left(i \text{ArcSin}[c x]^2+\text{ArcSin}[c x]\left(-3 i \pi-4 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]\right)+2 \pi\left(-2 \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+\text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-\text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]\right)+4 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]\right)+3 b c^2\left(i \text{ArcSin}[c x]^2+\text{ArcSin}[c x]\left(-i \pi-4 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]\right)+2 \pi\left(-2 \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]-\text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+\text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]\right)+4 i \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)+12 b c^2\left(\text{ArcSin}[c x] \text{Log}\left[1-e^{2 i \text{ArcSin}[c x]}\right]-\frac{1}{2} i\left(\text{ArcSin}[c x]^2+\text{PolyLog}\left[2, e^{2 i \text{ArcSin}[c x]}\right]\right)\right)\right)$$

Problem 119: Result unnecessarily involves higher level functions.

$$\int \frac{x^5 (a+b \text{ArcSin}[c x])}{\left(d-c^2 d x^2\right)^{3/2}} \, dx$$

Optimal (type 3, 229 leaves, 8 steps):

$$-\frac{5 b x \sqrt{1-c^2 x^2}}{3 c^5 d \sqrt{d-c^2 d x^2}}-\frac{b x^3 \sqrt{1-c^2 x^2}}{9 c^3 d \sqrt{d-c^2 d x^2}}+\frac{x^4 (a+b \text{ArcSin}[c x])}{c^2 d \sqrt{d-c^2 d x^2}}+\frac{8 \sqrt{d-c^2 d x^2} (a+b \text{ArcSin}[c x])}{3 c^6 d^2}+\frac{4 x^2 \sqrt{d-c^2 d x^2} (a+b \text{ArcSin}[c x])}{3 c^4 d^2}-\frac{b \sqrt{1-c^2 x^2} \text{ArcTanh}[c x]}{c^6 d \sqrt{d-c^2 d x^2}}$$

Result (type 4, 166 leaves):

$$\left(\sqrt{d-c^2 d x^2}\left(\sqrt{-c^2}\left(b c x \sqrt{1-c^2 x^2}\left(15+c^2 x^2\right)+3 a\left(-8+4 c^2 x^2+c^4 x^4\right)+3 b\left(-8+4 c^2 x^2+c^4 x^4\right) \text{ArcSin}[c x]\right)-9 i b c \sqrt{1-c^2 x^2} \text{ EllipticF}\left[i \text{ ArcSinh}\left[\sqrt{-c^2} x\right], 1\right]\right)\right) \Big/ \left(9 c^6 \sqrt{-c^2} d^2\left(-1+c^2 x^2\right)\right)$$

Problem 121: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 146 leaves, 5 steps):

$$-\frac{b x \sqrt{1-c^2 x^2}}{c^3 d \sqrt{d-c^2 d x^2}}+\frac{x^2 (a+b \text{ArcSin}[c x])}{c^2 d \sqrt{d-c^2 d x^2}}+\frac{2 \sqrt{d-c^2 d x^2}\,(a+b \text{ArcSin}[c x])}{c^4 d^2}-\frac{b \sqrt{1-c^2 x^2} \text{ ArcTanh}[c x]}{c^4 d \sqrt{d-c^2 d x^2}}$$

Result (type 4, 136 leaves):

$$\left(\sqrt{d-c^2 d x^2}\left(\sqrt{-c^2}\left(-2 a+a c^2 x^2+b c x \sqrt{1-c^2 x^2}+b\left(-2+c^2 x^2\right) \text{ArcSin}[c x]\right)-i b c \sqrt{1-c^2 x^2} \text{ EllipticF}\left[i \text{ ArcSinh}\left[\sqrt{-c^2} x\right], 1\right]\right)\right) \Big/ \left(c^4 \sqrt{-c^2} d^2\left(-1+c^2 x^2\right)\right)$$

Problem 123: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 73 leaves, 2 steps):

$$\frac{a+b \text{ArcSin}[c x]}{c^2 d \sqrt{d-c^2 d x^2}}-\frac{b \sqrt{1-c^2 x^2} \text{ ArcTanh}[c x]}{c^2 d \sqrt{d-c^2 d x^2}}$$

Result (type 4, 96 leaves):

$$\left(\sqrt{d-c^2 d x^2}\left(\sqrt{-c^2}(a+b \text{ArcSin}[c x])+i b c \sqrt{1-c^2 x^2} \text{ EllipticF}\left[i \text{ ArcSinh}\left[\sqrt{-c^2} x\right], 1\right]\right)\right) \Big/ \left(\left(-c^2\right)^{3/2} d^2\left(-1+c^2 x^2\right)\right)$$

Problem 130: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 234 leaves, 9 steps):

$$-\frac{b x^3}{6 c^3 d^2 \sqrt{1-c^2 x^2} \sqrt{d-c^2 d x^2}}+\frac{5 b x \sqrt{1-c^2 x^2}}{6 c^5 d^2 \sqrt{d-c^2 d x^2}}+\frac{x^4 (a+b \text{ArcSin}[c x])}{3 c^2 d \left(d-c^2 d x^2\right)^{3/2}}-\frac{4 x^2 (a+b \text{ArcSin}[c x])}{3 c^4 d^2 \sqrt{d-c^2 d x^2}}-\frac{8 \sqrt{d-c^2 d x^2} (a+b \text{ArcSin}[c x])}{3 c^6 d^3}+\frac{11 b \sqrt{1-c^2 x^2} \text{ArcTanh}[c x]}{6 c^6 d^2 \sqrt{d-c^2 d x^2}}$$

Result (type 4, 169 leaves):

$$\left(\sqrt{d-c^2 d x^2} \left(\sqrt{-c^2} \left(b c x \sqrt{1-c^2 x^2} \left(-5+6 c^2 x^2\right)+2 a \left(8-12 c^2 x^2+3 c^4 x^4\right)+2 b \left(8-12 c^2 x^2+3 c^4 x^4\right) \text{ArcSin}[c x]\right)+11 i b c \left(1-c^2 x^2\right)^{3/2} \text{EllipticF}\left[i \text{ArcSinh}\left[\sqrt{-c^2} x\right],1\right]\right)\right)\Big/\left(6 c^4 \left(-c^2\right)^{3/2} d^3 \left(-1+c^2 x^2\right)^2\right)$$

Problem 132: Result unnecessarily involves higher level functions.

$$\int \frac{x^3 (a+b \text{ArcSin}[c x])}{\left(d-c^2 d x^2\right)^{5/2}} \, dx$$

Optimal (type 3, 155 leaves, 5 steps):

$$-\frac{b x}{6 c^3 d^2 \sqrt{1-c^2 x^2} \sqrt{d-c^2 d x^2}}+\frac{x^2 (a+b \text{ArcSin}[c x])}{3 c^2 d \left(d-c^2 d x^2\right)^{3/2}}-\frac{2 (a+b \text{ArcSin}[c x])}{3 c^4 d^2 \sqrt{d-c^2 d x^2}}+\frac{5 b \sqrt{1-c^2 x^2} \text{ArcTanh}[c x]}{6 c^4 d^2 \sqrt{d-c^2 d x^2}}$$

Result (type 4, 143 leaves):

$$\left(\sqrt{d-c^2 d x^2} \left(\sqrt{-c^2} \left(-4 a+6 a c^2 x^2-b c x \sqrt{1-c^2 x^2}+2 b \left(-2+3 c^2 x^2\right) \text{ArcSin}[c x]\right)-5 i b c \left(1-c^2 x^2\right)^{3/2} \text{EllipticF}\left[i \text{ArcSinh}\left[\sqrt{-c^2} x\right],1\right]\right)\right)\Big/\left(6 c^4 \sqrt{-c^2} d^3 \left(-1+c^2 x^2\right)^2\right)$$

Problem 134: Result unnecessarily involves higher level functions.

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

Optimal (type 3, 119 leaves, 3 steps):

$$-\frac{b x}{6 c d^2 \sqrt{1-c^2 x^2} \sqrt{d-c^2 d x^2}}+\frac{a+b \text{ArcSin}[c x]}{3 c^2 d \left(d-c^2 d x^2\right)^{3/2}}-\frac{b \sqrt{1-c^2 x^2} \text{ArcTanh}[c x]}{6 c^2 d^2 \sqrt{d-c^2 d x^2}}$$

Result (type 4, 121 leaves):

$$-\left(\left(\sqrt{d-c^2 d x^2} \left(\sqrt{-c^2} \left(2 a-b c x \sqrt{1-c^2 x^2}+2 b \text{ArcSin}[c x]\right)+i b c \left(1-c^2 x^2\right)^{3/2} \text{EllipticF}\left[i \text{ArcSinh}\left[\sqrt{-c^2} x\right],1\right]\right)\right)\Big/\left(6 \left(-c^2\right)^{3/2} d^3 \left(-1+c^2 x^2\right)^2\right)\right)$$

Problem 141: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

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

Optimal (type 5, 79 leaves, 1 step):

$$\frac{2\,(f\,x)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{5}{4},\frac{9}{4},c^2\,x^2\right]}{5\,f}-\frac{4\,b\,c\,(f\,x)^{7/2}\,\text{HypergeometricPFQ}\left[\left\{1,\frac{7}{4},\frac{7}{4}\right\},\left\{\frac{9}{4},\frac{11}{4}\right\},c^2\,x^2\right]}{35\,f^2}$$

Result (type 5, 233 leaves):

$$\frac{1}{36\,c^2\,\sqrt{1-c^2\,x^2}\,\text{Gamma}\left[\frac{5}{4}\right]\,\text{Gamma}\left[\frac{7}{4}\right]}\left(f\,\sqrt{f\,x}\,\left(8\,\text{Gamma}\left[\frac{5}{4}\right]\,\text{Gamma}\left[\frac{7}{4}\right]\left(-3\,a+3\,a\,c^2\,x^2+2\,b\,c\,x\,\sqrt{1-c^2\,x^2}-3\,b\,\text{ArcSin}[c\,x]+\right.\right.\right.$$

$$3\,b\,c^2\,x^2\,\text{ArcSin}[c\,x]+\frac{3\,i\,a\,\sqrt{1-\frac{1}{c^2\,x^2}}\,\sqrt{x}\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{1}{c}}}{\sqrt{x}}\right],-1\right]}{\sqrt{-\frac{1}{c}}}-$$

$$\left.3\,b\,\left(-1+c^2\,x^2\right)\,\text{ArcSin}[c\,x]\,\text{Hypergeometric2F1}\left[\frac{3}{4},1,\frac{5}{4},c^2\,x^2\right]\right)-$$

$$\left.\left.3\,b\,c\,\pi\,x\,\sqrt{2-2\,c^2\,x^2}\,\text{HypergeometricPFQ}\left[\left\{\frac{3}{4},\frac{3}{4},1\right\},\left\{\frac{5}{4},\frac{7}{4}\right\},c^2\,x^2\right]\right)\right)$$

Problem 142: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(f x)^{3/2} (a + b \text{ArcSin}[c x])}{\sqrt{d - c^2 d x^2}} \, dx$$

Optimal (type 5, 137 leaves, 2 steps):

$$\frac{1}{5 f \sqrt{d - c^2 d x^2}} 2 (f x)^{5/2} \sqrt{1 - c^2 x^2} (a + b \text{ArcSin}[c x]) \text{Hypergeometric2F1}\left[\frac{1}{2}, \frac{5}{4}, \frac{9}{4}, c^2 x^2\right] - \left(4 b c (f x)^{7/2} \sqrt{1 - c^2 x^2} \text{HypergeometricPFQ}\left[\left\{1, \frac{7}{4}, \frac{7}{4}\right\}, \left\{\frac{9}{4}, \frac{11}{4}\right\}, c^2 x^2\right]\right) \Big/ \left(35 f^2 \sqrt{d - c^2 d x^2}\right)$$

Result (type 5, 234 leaves):

$$\frac{1}{36 c^2 \sqrt{d - c^2 d x^2} \text{Gamma}\left[\frac{5}{4}\right] \text{Gamma}\left[\frac{7}{4}\right]} f \sqrt{f x} \left(8 \text{Gamma}\left[\frac{5}{4}\right] \text{Gamma}\left[\frac{7}{4}\right] \left(-3 a + 3 a c^2 x^2 + 2 b c x \sqrt{1 - c^2 x^2} - 3 b \text{ArcSin}[c x] + 3 b c^2 x^2 \text{ArcSin}[c x] + \frac{3 i a \sqrt{1 - \frac{1}{c^2 x^2}} \sqrt{x} \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{-\frac{1}{c}}}{\sqrt{x}}\right], -1\right]}{\sqrt{-\frac{1}{c}}} - 3 b (-1 + c^2 x^2) \text{ArcSin}[c x] \text{Hypergeometric2F1}\left[\frac{3}{4}, 1, \frac{5}{4}, c^2 x^2\right]\right) - 3 b c \pi x \sqrt{2 - 2 c^2 x^2} \text{HypergeometricPFQ}\left[\left\{\frac{3}{4}, \frac{3}{4}, 1\right\}, \left\{\frac{5}{4}, \frac{7}{4}\right\}, c^2 x^2\right]\right)$$

Problem 149: Unable to integrate problem.

$$\int x^m (d - c^2 d x^2)^{5/2} (a + b \text{ArcSin}[c x]) \, dx$$

Optimal (type 5, 635 leaves, 9 steps):

$$-\frac{15\,b\,c\,d^2\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}}{(2+m)^2\,(4+m)\,(6+m)\,\sqrt{1-c^2\,x^2}}-\frac{5\,b\,c\,d^2\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}}{(6+m)\,(8+6\,m+m^2)\,\sqrt{1-c^2\,x^2}}-\frac{b\,c\,d^2\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}}{(12+8\,m+m^2)\,\sqrt{1-c^2\,x^2}}+\frac{5\,b\,c^3\,d^2\,x^{4+m}\,\sqrt{d-c^2\,d\,x^2}}{(4+m)^2\,(6+m)\,\sqrt{1-c^2\,x^2}}+\frac{2\,b\,c^3\,d^2\,x^{4+m}\,\sqrt{d-c^2\,d\,x^2}}{(4+m)\,(6+m)\,\sqrt{1-c^2\,x^2}}-\frac{b\,c^5\,d^2\,x^{6+m}\,\sqrt{d-c^2\,d\,x^2}}{(6+m)^2\,\sqrt{1-c^2\,x^2}}+\frac{15\,d^2\,x^{1+m}\,\sqrt{d-c^2\,d\,x^2}\,(a+b\,\text{ArcSin}[c\,x])}{(6+m)\,(8+6\,m+m^2)}+\frac{5\,d\,x^{1+m}\,(d-c^2\,d\,x^2)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])}{(4+m)\,(6+m)}+\frac{x^{1+m}\,(d-c^2\,d\,x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])}{6+m}+\left(15\,d^2\,x^{1+m}\,\sqrt{d-c^2\,d\,x^2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},c^2\,x^2\right]\right)\Big/\left((6+m)\,(8+14\,m+7\,m^2+m^3)\,\sqrt{1-c^2\,x^2}\right)-\left(15\,b\,c\,d^2\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}\,\text{HypergeometricPFQ}\left[\left\{1,1+\frac{m}{2},1+\frac{m}{2}\right\},\left\{\frac{3}{2}+\frac{m}{2},2+\frac{m}{2}\right\},c^2\,x^2\right]\right)\Big/\left((1+m)\,(2+m)^2\,(4+m)\,(6+m)\,\sqrt{1-c^2\,x^2}\right)$$

Result (type 8, 29 leaves):

$$\int x^m\,(d-c^2\,d\,x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,dx$$

Problem 150: Unable to integrate problem.

$$\int x^m\,(d-c^2\,d\,x^2)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])\,dx$$

Optimal (type 5, 399 leaves, 6 steps):

$$-\frac{3\,b\,c\,d\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}}{(2+m)^2\,(4+m)\,\sqrt{1-c^2\,x^2}}-\frac{b\,c\,d\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}}{(8+6\,m+m^2)\,\sqrt{1-c^2\,x^2}}+\frac{b\,c^3\,d\,x^{4+m}\,\sqrt{d-c^2\,d\,x^2}}{(4+m)^2\,\sqrt{1-c^2\,x^2}}+\frac{3\,d\,x^{1+m}\,\sqrt{d-c^2\,d\,x^2}\,(a+b\,\text{ArcSin}[c\,x])}{8+6\,m+m^2}+\frac{x^{1+m}\,(d-c^2\,d\,x^2)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])}{4+m}+\left(3\,d\,x^{1+m}\,\sqrt{d-c^2\,d\,x^2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},c^2\,x^2\right]\right)\Big/\left((8+14\,m+7\,m^2+m^3)\,\sqrt{1-c^2\,x^2}\right)-\left(3\,b\,c\,d\,x^{2+m}\,\sqrt{d-c^2\,d\,x^2}\,\text{HypergeometricPFQ}\left[\left\{1,1+\frac{m}{2},1+\frac{m}{2}\right\},\left\{\frac{3}{2}+\frac{m}{2},2+\frac{m}{2}\right\},c^2\,x^2\right]\right)\Big/\left((1+m)\,(2+m)^2\,(4+m)\,\sqrt{1-c^2\,x^2}\right)$$

Result (type 8, 29 leaves):

$$\int x^m\,(d-c^2\,d\,x^2)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])\,dx$$

Problem 151: Unable to integrate problem.

$$\int x^m \sqrt{d-c^2 d x^2}\,(a+b\,\text{ArcSin}[c\,x])\,dx$$

Optimal (type 5, 245 leaves, 3 steps):

$$-\frac{b\,c\,x^{2+m}\sqrt{d-c^2 d x^2}}{(2+m)^2\sqrt{1-c^2 x^2}}+\frac{x^{1+m}\sqrt{d-c^2 d x^2}\,(a+b\,\text{ArcSin}[c\,x])}{2+m}+$$
$$\left(x^{1+m}\sqrt{d-c^2 d x^2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},c^2 x^2\right]\right)\Big/$$
$$\left((2+3m+m^2)\sqrt{1-c^2 x^2}\right)-$$
$$\left(b\,c\,x^{2+m}\sqrt{d-c^2 d x^2}\,\text{HypergeometricPFQ}\left[\left\{1,1+\frac{m}{2},1+\frac{m}{2}\right\},\left\{\frac{3}{2}+\frac{m}{2},2+\frac{m}{2}\right\},c^2 x^2\right]\right)\Big/$$
$$\left((1+m)(2+m)^2\sqrt{1-c^2 x^2}\right)$$

Result (type 8, 29 leaves):

$$\int x^m \sqrt{d-c^2 d x^2}\,(a+b\,\text{ArcSin}[c\,x])\,dx$$

Problem 152: Unable to integrate problem.

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

Optimal (type 5, 163 leaves, 2 steps):

$$\left(x^{1+m}\sqrt{1-c^2 x^2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},c^2 x^2\right]\right)\Big/$$
$$\left((1+m)\sqrt{d-c^2 d x^2}\right)-$$
$$\left(b\,c\,x^{2+m}\sqrt{1-c^2 x^2}\,\text{HypergeometricPFQ}\left[\left\{1,1+\frac{m}{2},1+\frac{m}{2}\right\},\left\{\frac{3}{2}+\frac{m}{2},2+\frac{m}{2}\right\},c^2 x^2\right]\right)\Big/$$
$$\left((2+3m+m^2)\sqrt{d-c^2 d x^2}\right)$$

Result (type 9, 181 leaves):

$$\left(2^{-2-m}x^{1+m}\sqrt{1-c^2 x^2}\left(2^{2+m}\left(a\,\text{Hypergeometric2F1}\left[\frac{1}{2},\frac{1+m}{2},\frac{3+m}{2},c^2 x^2\right]+\right.\right.\right.$$
$$\left.b\sqrt{1-c^2 x^2}\,\text{ArcSin}[c\,x]\,\text{Hypergeometric2F1}\left[1,\frac{2+m}{2},\frac{3+m}{2},c^2 x^2\right]\right)-$$
$$b\,c\,(1+m)\sqrt{\pi}\,x\,\text{Gamma}[1+m]\,\text{HypergeometricPFQRegularized}\left[\left\{1,\frac{2+m}{2},\frac{2+m}{2}\right\},\right.$$
$$\left.\left.\left.\left\{\frac{3+m}{2},\frac{4+m}{2}\right\},c^2 x^2\right]\right)\right)\Big/\left((1+m)\sqrt{d-c^2 d x^2}\right)$$

Problem 153: Unable to integrate problem.

$$\int \frac{x^m (a + b \operatorname{ArcSin}[c x])}{(d - c^2 d x^2)^{3/2}} \, dx$$

Optimal (type 5, 272 leaves, 4 steps):

$$\frac{x^{1+m} (a + b \operatorname{ArcSin}[c x])}{d \sqrt{d - c^2 d x^2}} - \left(m x^{1+m} \sqrt{1 - c^2 x^2} (a + b \operatorname{ArcSin}[c x]) \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+m}{2}, \frac{3+m}{2}, c^2 x^2\right]\right) \Big/ \left(d (1+m) \sqrt{d - c^2 d x^2}\right) - \frac{b c x^{2+m} \sqrt{1 - c^2 x^2} \operatorname{Hypergeometric2F1}\left[1, \frac{2+m}{2}, \frac{4+m}{2}, c^2 x^2\right]}{d (2+m) \sqrt{d - c^2 d x^2}} + \left(b c m x^{2+m} \sqrt{1 - c^2 x^2} \operatorname{HypergeometricPFQ}\left[\left\{1, 1 + \frac{m}{2}, 1 + \frac{m}{2}\right\}, \left\{\frac{3}{2} + \frac{m}{2}, 2 + \frac{m}{2}\right\}, c^2 x^2\right]\right) \Big/ \left(d (2 + 3 m + m^2) \sqrt{d - c^2 d x^2}\right)$$

Result (type 8, 29 leaves):

$$\int \frac{x^m (a + b \operatorname{ArcSin}[c x])}{(d - c^2 d x^2)^{3/2}} \, dx$$

Problem 154: Unable to integrate problem.

$$\int \frac{x^m (a + b \operatorname{ArcSin}[c x])}{(d - c^2 d x^2)^{5/2}} \, dx$$

Optimal (type 5, 408 leaves, 6 steps):

$$\frac{x^{1+m} (a + b \operatorname{ArcSin}[c x])}{3 d (d - c^2 d x^2)^{3/2}} + \frac{(2-m) x^{1+m} (a + b \operatorname{ArcSin}[c x])}{3 d^2 \sqrt{d - c^2 d x^2}} - \left((2-m) m x^{1+m} \sqrt{1 - c^2 x^2} (a + b \operatorname{ArcSin}[c x]) \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+m}{2}, \frac{3+m}{2}, c^2 x^2\right]\right) \Big/ \left(3 d^2 (1+m) \sqrt{d - c^2 d x^2}\right) - \frac{b c (2-m) x^{2+m} \sqrt{1 - c^2 x^2} \operatorname{Hypergeometric2F1}\left[1, \frac{2+m}{2}, \frac{4+m}{2}, c^2 x^2\right]}{3 d^2 (2+m) \sqrt{d - c^2 d x^2}} - \frac{b c x^{2+m} \sqrt{1 - c^2 x^2} \operatorname{Hypergeometric2F1}\left[2, \frac{2+m}{2}, \frac{4+m}{2}, c^2 x^2\right]}{3 d^2 (2+m) \sqrt{d - c^2 d x^2}} + \left(b c (2-m) m x^{2+m} \sqrt{1 - c^2 x^2} \operatorname{HypergeometricPFQ}\left[\left\{1, 1 + \frac{m}{2}, 1 + \frac{m}{2}\right\}, \left\{\frac{3}{2} + \frac{m}{2}, 2 + \frac{m}{2}\right\}, c^2 x^2\right]\right) \Big/ \left(3 d^2 (2 + 3 m + m^2) \sqrt{d - c^2 d x^2}\right)$$

Result (type 8, 29 leaves):

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

Problem 155: Unable to integrate problem.

$$\int \frac{x^m \operatorname{ArcSin}[a x]}{\sqrt{1-a^2 x^2}} \, dx$$

Optimal (type 5, 100 leaves, 1 step):

$$\frac{x^{1+m} \operatorname{ArcSin}[a x] \operatorname{Hypergeometric2F1}\left[\frac{1}{2}, \frac{1+m}{2}, \frac{3+m}{2}, a^2 x^2\right]}{1+m} - \frac{a x^{2+m} \operatorname{HypergeometricPFQ}\left[\left\{1, 1+\frac{m}{2}, 1+\frac{m}{2}\right\}, \left\{\frac{3}{2}+\frac{m}{2}, 2+\frac{m}{2}\right\}, a^2 x^2\right]}{2+3 m+m^2}$$

Result (type 9, 117 leaves):

$$\frac{1}{2} x^{1+m} \left(\frac{2 \sqrt{1-a^2 x^2} \operatorname{ArcSin}[a x] \operatorname{Hypergeometric2F1}\left[1, 1+\frac{m}{2}, \frac{3+m}{2}, a^2 x^2\right]}{1+m} - 2^{-1-m} a \sqrt{\pi} \, x \operatorname{Gamma}[1+m] \operatorname{HypergeometricPFQRegularized}\left[\left\{1, 1+\frac{m}{2}, 1+\frac{m}{2}\right\}, \left\{\frac{3+m}{2}, 2+\frac{m}{2}\right\}, a^2 x^2\right]\right)$$

Problem 184: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 210 leaves, 10 steps):

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

Result (type 4, 441 leaves):

$$-\frac{1}{24 c^4 d}\Big(12 a^2 c^2 x^2+12 a b c x \sqrt{1-c^2 x^2}-12 a b \text{ArcSin}[c x]+48 i a b \pi \text{ArcSin}[c x]+$$
$$24 a b c^2 x^2 \text{ArcSin}[c x]-24 i a b \text{ArcSin}[c x]^2-8 i b^2 \text{ArcSin}[c x]^3+3 b^2 \text{Cos}[2 \text{ArcSin}[c x]]-$$
$$6 b^2 \text{ArcSin}[c x]^2 \text{Cos}[2 \text{ArcSin}[c x]]+96 a b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+$$
$$24 a b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+48 a b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-$$
$$24 a b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+48 a b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+$$
$$24 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1+e^{2 i \text{ArcSin}[c x]}\right]+12 a^2 \text{Log}\left[1-c^2 x^2\right]-$$
$$96 a b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+24 a b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-$$
$$24 a b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-48 i a b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-$$
$$48 i a b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]-24 i b^2 \text{ArcSin}[c x] \text{PolyLog}\left[2,-e^{2 i \text{ArcSin}[c x]}\right]+$$
$$12 b^2 \text{PolyLog}\left[3,-e^{2 i \text{ArcSin}[c x]}\right]+6 b^2 \text{ArcSin}[c x] \text{Sin}[2 \text{ArcSin}[c x]]\Big)$$

Problem 186: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 117 leaves, 6 steps):

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

Result (type 4, 342 leaves):

$$\frac{1}{6 c^2 d}$$
$$\Big(-12 i a b \pi \text{ArcSin}[c x]+6 i a b \text{ArcSin}[c x]^2+2 i b^2 \text{ArcSin}[c x]^3-24 a b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]-$$
$$6 a b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-12 a b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+$$
$$6 a b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-12 a b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-$$
$$6 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1+e^{2 i \text{ArcSin}[c x]}\right]-3 a^2 \text{Log}\left[1-c^2 x^2\right]+24 a b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$6 a b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+6 a b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+$$
$$12 i a b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+12 i a b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]+$$
$$6 i b^2 \text{ArcSin}[c x] \text{PolyLog}\left[2,-e^{2 i \text{ArcSin}[c x]}\right]-3 b^2 \text{PolyLog}\left[3,-e^{2 i \text{ArcSin}[c x]}\right]\Big)$$

Problem 187: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 156 leaves, 8 steps):

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

Result (type 4, 334 leaves):

$$\frac{1}{2\,c\,d}\Big(-2\,i\,a\,b\,\pi\,\text{ArcSin}[c\,x]+2\,a\,b\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,a\,b\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,a\,b\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,a\,b\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,b^2\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-a^2\,\text{Log}[1-c\,x]+a^2\,\text{Log}[1+c\,x]-2\,a\,b\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-2\,a\,b\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+4\,i\,b\,(a+b\,\text{ArcSin}[c\,x])\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,i\,b\,(a+b\,\text{ArcSin}[c\,x])\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,b^2\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,b^2\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Big)$$

Problem 188: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 131 leaves, 9 steps):

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

Result (type 4, 453 leaves):

$$\frac{1}{24 d}\left(-i b^2 \pi^3 - 48 i a b \pi \text{ArcSin}[c x] + 16 i b^2 \text{ArcSin}[c x]^3 - 96 a b \pi \text{Log}\left[1 + e^{-i \text{ArcSin}[c x]}\right] - 24 a b \pi \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] - 48 a b \text{ArcSin}[c x] \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] + 24 a b \pi \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] - 48 a b \text{ArcSin}[c x] \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] + 24 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1 - e^{-2 i \text{ArcSin}[c x]}\right] + 48 a b \text{ArcSin}[c x] \text{Log}\left[1 - e^{2 i \text{ArcSin}[c x]}\right] - 24 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1 + e^{2 i \text{ArcSin}[c x]}\right] + 24 a^2 \text{Log}[c x] - 12 a^2 \text{Log}\left[1 - c^2 x^2\right] + 96 a b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] - 24 a b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi + 2 \text{ArcSin}[c x])\right]\right] + 24 a b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi + 2 \text{ArcSin}[c x])\right]\right] + 48 i a b \text{PolyLog}\left[2, -i e^{i \text{ArcSin}[c x]}\right] + 48 i a b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right] + 24 i b^2 \text{ArcSin}[c x] \text{PolyLog}\left[2, e^{-2 i \text{ArcSin}[c x]}\right] + 24 i b^2 \text{ArcSin}[c x] \text{PolyLog}\left[2, -e^{2 i \text{ArcSin}[c x]}\right] - 24 i a b \text{PolyLog}\left[2, e^{2 i \text{ArcSin}[c x]}\right] + 12 b^2 \text{PolyLog}\left[3, e^{-2 i \text{ArcSin}[c x]}\right] - 12 b^2 \text{PolyLog}\left[3, -e^{2 i \text{ArcSin}[c x]}\right]\right)$$

Problem 189: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 238 leaves, 15 steps):

$$-\frac{(a + b \text{ArcSin}[c x])^2}{d x} - \frac{2 i c (a + b \text{ArcSin}[c x])^2 \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{d} - \frac{4 b c (a + b \text{ArcSin}[c x]) \text{ArcTanh}\left[e^{i \text{ArcSin}[c x]}\right]}{d} + \frac{2 i b^2 c \text{PolyLog}\left[2, -e^{i \text{ArcSin}[c x]}\right]}{d} + \frac{2 i b c (a + b \text{ArcSin}[c x]) \text{PolyLog}\left[2, -i e^{i \text{ArcSin}[c x]}\right]}{d} - \frac{2 i b c (a + b \text{ArcSin}[c x]) \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]}{d} - \frac{2 i b^2 c \text{PolyLog}\left[2, e^{i \text{ArcSin}[c x]}\right]}{d} - \frac{2 b^2 c \text{PolyLog}\left[3, -i e^{i \text{ArcSin}[c x]}\right]}{d} + \frac{2 b^2 c \text{PolyLog}\left[3, i e^{i \text{ArcSin}[c x]}\right]}{d}$$

Result (type 4, 537 leaves):

$$-\frac{1}{2\,d\,x}\Big(2\,a^2+4\,a\,b\,\text{ArcSin}[c\,x]+2\,i\,a\,b\,c\,\pi\,x\,\text{ArcSin}[c\,x]+2\,b^2\,\text{ArcSin}[c\,x]^2-4\,b^2\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{i\,\text{ArcSin}[c\,x]}\right]-2\,a\,b\,c\,\pi\,x\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,a\,b\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,b^2\,c\,x\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,a\,b\,c\,\pi\,x\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,a\,b\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,c\,x\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,b^2\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+e^{i\,\text{ArcSin}[c\,x]}\right]-4\,a\,b\,c\,x\,\text{Log}[c\,x]+a^2\,c\,x\,\text{Log}[1-c\,x]-a^2\,c\,x\,\text{Log}[1+c\,x]+4\,a\,b\,c\,x\,\text{Log}\left[1+\sqrt{1-c^2\,x^2}\right]+2\,a\,b\,c\,\pi\,x\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]+2\,a\,b\,c\,\pi\,x\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]-4\,i\,b^2\,c\,x\,\text{PolyLog}\left[2,-e^{i\,\text{ArcSin}[c\,x]}\right]-4\,i\,b\,c\,x\left(a+b\,\text{ArcSin}[c\,x]\right)\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,i\,a\,b\,c\,x\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,i\,b^2\,c\,x\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,i\,b^2\,c\,x\,\text{PolyLog}\left[2,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,b^2\,c\,x\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,b^2\,c\,x\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Big)$$

Problem 190: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 210 leaves, 12 steps):

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

Result (type 4, 614 leaves):

$$-\frac{1}{2 d}\left(\frac{1}{12} \text{i} b^2 c^2 \pi^3+\frac{a^2}{x^2}+\frac{2 a b c \sqrt{1-c^2 x^2}}{x}+4 \text{i} a b c^2 \pi \text{ArcSin}[c x]+\frac{2 a b \text{ArcSin}[c x]}{x^2}+\frac{2 b^2 c \sqrt{1-c^2 x^2} \text{ArcSin}[c x]}{x}+\frac{b^2 \text{ArcSin}[c x]^2}{x^2}-\frac{4}{3} \text{i} b^2 c^2 \text{ArcSin}[c x]^3+8 a b c^2 \pi \text{Log}\left[1+e^{-\text{i} \text{ArcSin}[c x]}\right]+2 a b c^2 \pi \text{Log}\left[1-\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]+4 a b c^2 \text{ArcSin}[c x] \text{Log}\left[1-\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]-2 a b c^2 \pi \text{Log}\left[1+\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]+4 a b c^2 \text{ArcSin}[c x] \text{Log}\left[1+\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]-2 b^2 c^2 \text{ArcSin}[c x]^2 \text{Log}\left[1-e^{-2 \text{i} \text{ArcSin}[c x]}\right]-4 a b c^2 \text{ArcSin}[c x] \text{Log}\left[1-e^{2 \text{i} \text{ArcSin}[c x]}\right]+2 b^2 c^2 \text{ArcSin}[c x]^2 \text{Log}\left[1+e^{2 \text{i} \text{ArcSin}[c x]}\right]-2 a^2 c^2 \text{Log}[x]-2 b^2 c^2 \text{Log}[c x]+a^2 c^2 \text{Log}\left[1-c^2 x^2\right]-8 a b c^2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+2 a b c^2 \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-2 a b c^2 \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-4 \text{i} a b c^2 \text{PolyLog}\left[2,-\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]-4 \text{i} a b c^2 \text{PolyLog}\left[2, \text{i} e^{\text{i} \text{ArcSin}[c x]}\right]-2 \text{i} b^2 c^2 \text{ArcSin}[c x] \text{PolyLog}\left[2, e^{-2 \text{i} \text{ArcSin}[c x]}\right]-2 \text{i} b^2 c^2 \text{ArcSin}[c x] \text{PolyLog}\left[2,-e^{2 \text{i} \text{ArcSin}[c x]}\right]+2 \text{i} a b c^2 \text{PolyLog}\left[2, e^{2 \text{i} \text{ArcSin}[c x]}\right]-b^2 c^2 \text{PolyLog}\left[3, e^{-2 \text{i} \text{ArcSin}[c x]}\right]+b^2 c^2 \text{PolyLog}\left[3,-e^{2 \text{i} \text{ArcSin}[c x]}\right]\right)$$

Problem 191: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b \text{ArcSin}[c x])^2}{x^4\left(d-c^2 d x^2\right)} \, dx$$

Optimal (type 4, 333 leaves, 24 steps):

$$-\frac{b^2 c^2}{3 d x}-\frac{b c \sqrt{1-c^2 x^2}\,(a+b \text{ArcSin}[c x])}{3 d x^2}-\frac{(a+b \text{ArcSin}[c x])^2}{3 d x^3}-\frac{c^2 (a+b \text{ArcSin}[c x])^2}{d x}-\frac{2 \text{i} c^3 (a+b \text{ArcSin}[c x])^2 \text{ArcTan}\left[e^{\text{i} \text{ArcSin}[c x]}\right]}{d}-\frac{14 b c^3 (a+b \text{ArcSin}[c x]) \text{ArcTanh}\left[e^{\text{i} \text{ArcSin}[c x]}\right]}{3 d}+\frac{7 \text{i} b^2 c^3 \text{PolyLog}\left[2,-e^{\text{i} \text{ArcSin}[c x]}\right]}{3 d}+\frac{2 \text{i} b c^3 (a+b \text{ArcSin}[c x]) \text{PolyLog}\left[2,-\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]}{d}-\frac{2 \text{i} b c^3 (a+b \text{ArcSin}[c x]) \text{PolyLog}\left[2, \text{i} e^{\text{i} \text{ArcSin}[c x]}\right]}{d}-\frac{7 \text{i} b^2 c^3 \text{PolyLog}\left[2, e^{\text{i} \text{ArcSin}[c x]}\right]}{3 d}-\frac{2 b^2 c^3 \text{PolyLog}\left[3,-\text{i} e^{\text{i} \text{ArcSin}[c x]}\right]}{d}+\frac{2 b^2 c^3 \text{PolyLog}\left[3, \text{i} e^{\text{i} \text{ArcSin}[c x]}\right]}{d}$$

Result (type 4, 868 leaves):

$$-\frac{a^2}{3 d x^3}-\frac{a^2 c^2}{d x}-\frac{a^2 c^3 \text{Log}[1-c x]}{2 d}+\frac{a^2 c^3 \text{Log}[1+c x]}{2 d}-$$

$$\frac{1}{d}2 a b \left(\frac{c \sqrt{1-c^2 x^2}}{6 x^2}+\frac{\text{ArcSin}[c x]}{3 x^3}-\frac{1}{6} c^3 \text{Log}[x]+\frac{1}{6} c^3 \text{Log}\left[1+\sqrt{1-c^2 x^2}\right]-\right.$$

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

$$\left(\frac{3 i \pi \text{ArcSin}[c x]}{2 c}-\frac{i \text{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]}{c}-\frac{\pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}+\right.$$

$$\frac{2 \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c}+$$

$$\left.\frac{\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{c}\right)-$$

$$\frac{1}{2} c^4 \left(\frac{i \pi \text{ArcSin}[c x]}{2 c}-\frac{i \text{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]}{c}+\frac{\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}+\right.$$

$$\frac{2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c}-$$

$$\left.\left.\frac{\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]}{c}\right)\right)-$$

$$\frac{1}{24 d} b^2 c^3 \left(4 \text{Cot}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+14 \text{ArcSin}[c x]^2 \text{Cot}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\right.$$

$$2 \text{ArcSin}[c x] \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2+\frac{1}{2} c x \text{ArcSin}[c x]^2 \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^4-$$

$$56 \text{ArcSin}[c x] \text{Log}\left[1-e^{i \text{ArcSin}[c x]}\right]-24 \text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+$$

$$24 \text{ArcSin}[c x]^2 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+56 \text{ArcSin}[c x] \text{Log}\left[1+e^{i \text{ArcSin}[c x]}\right]-$$

$$56 i \text{PolyLog}\left[2,-e^{i \text{ArcSin}[c x]}\right]-48 i \text{ArcSin}[c x] \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+$$

$$48 i \text{ArcSin}[c x] \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]+56 i \text{PolyLog}\left[2, e^{i \text{ArcSin}[c x]}\right]+$$

$$48 \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]-48 \text{PolyLog}\left[3, i e^{i \text{ArcSin}[c x]}\right]-$$

$$2 \text{ArcSin}[c x] \text{Sec}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2+\frac{8 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^4}{c^3 x^3}+$$

$$\left.4 \text{Tan}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+14 \text{ArcSin}[c x]^2 \text{Tan}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)$$

Problem 192: Result more than twice size of optimal antiderivative.

$$\int \frac{x^4 (a+b \text{ArcSin}[c x])^2}{\left(d-c^2 d x^2\right)^2} \, dx$$

Optimal (type 4, 300 leaves, 15 steps) :

$$-\frac{2 b^2 x}{c^4 d^2}-\frac{b\left(a+b \operatorname{ArcSin}[c x]\right)}{c^5 d^2 \sqrt{1-c^2 x^2}}+\frac{2 b \sqrt{1-c^2 x^2}\left(a+b \operatorname{ArcSin}[c x]\right)}{c^5 d^2}+\frac{3 x\left(a+b \operatorname{ArcSin}[c x]\right)^2}{2 c^4 d^2}+\frac{x^3\left(a+b \operatorname{ArcSin}[c x]\right)^2}{2 c^2 d^2\left(1-c^2 x^2\right)}+\frac{3 i\left(a+b \operatorname{ArcSin}[c x]\right)^2 \operatorname{ArcTan}\left[e^{i \operatorname{ArcSin}[c x]}\right]}{c^5 d^2}+\frac{b^2 \operatorname{ArcTanh}[c x]}{c^5 d^2}-\frac{3 i b\left(a+b \operatorname{ArcSin}[c x]\right) \operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[c x]}\right]}{c^5 d^2}+\frac{3 i b\left(a+b \operatorname{ArcSin}[c x]\right) \operatorname{PolyLog}\left[2, i e^{i \operatorname{ArcSin}[c x]}\right]}{c^5 d^2}+\frac{3 b^2 \operatorname{PolyLog}\left[3,-i e^{i \operatorname{ArcSin}[c x]}\right]}{c^5 d^2}-\frac{3 b^2 \operatorname{PolyLog}\left[3, i e^{i \operatorname{ArcSin}[c x]}\right]}{c^5 d^2}$$

Result (type 4, 1081 leaves):

$$\frac{a^2 x}{c^4 d^2}-\frac{a^2 x}{2 c^4 d^2\left(-1+c^2 x^2\right)}+\frac{3 a^2 \operatorname{Log}[1-c x]}{4 c^5 d^2}-\frac{3 a^2 \operatorname{Log}[1+c x]}{4 c^5 d^2}+\frac{1}{d^2} 2 a b\left(\frac{\sqrt{1-c^2 x^2}-\operatorname{ArcSin}[c x]}{4 c^5(-1+c x)}-\frac{\sqrt{1-c^2 x^2}+\operatorname{ArcSin}[c x]}{4 c^4\left(c+c^2 x\right)}+\frac{\sqrt{1-c^2 x^2}+c x \operatorname{ArcSin}[c x]}{c^5}+\frac{1}{4 c^4} 3\left(\frac{3 i \pi \operatorname{ArcSin}[c x]}{2 c}-\frac{i \operatorname{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \operatorname{Log}\left[1+e^{-i \operatorname{ArcSin}[c x]}\right]}{c}-\frac{\pi \operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[c x]}\right]}{c}+\frac{2 \operatorname{ArcSin}[c x] \operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} \operatorname{ArcSin}[c x]\right]\right]}{c}+\frac{\pi \operatorname{Log}\left[-\operatorname{Cos}\left[\frac{1}{4}(\pi+2 \operatorname{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[c x]}\right]}{c}\right)-\frac{1}{4 c^4} 3\left(\frac{i \pi \operatorname{ArcSin}[c x]}{2 c}-\frac{i \operatorname{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \operatorname{Log}\left[1+e^{-i \operatorname{ArcSin}[c x]}\right]}{c}+\frac{\pi \operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[c x]}\right]}{c}+\frac{2 \operatorname{ArcSin}[c x] \operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} \operatorname{ArcSin}[c x]\right]\right]}{c}-\frac{\pi \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{4}(\pi+2 \operatorname{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \operatorname{PolyLog}\left[2, i e^{i \operatorname{ArcSin}[c x]}\right]}{c}\right)\right)+\frac{1}{c^5 d^2} b^2\left(\frac{1}{2 \sqrt{1-c^2 x^2}}\left(\operatorname{ArcSin}[c x]+\frac{1}{\sqrt{1-c^2 x^2}} c x\left(2\left(-1+\operatorname{ArcSin}[c x]^2\right)+\left(-2+\operatorname{ArcSin}[c x]^2\right) \operatorname{Cos}[2 \operatorname{ArcSin}[c x]]\right)+\frac{\operatorname{ArcSin}[c x] \operatorname{Cos}[3 \operatorname{ArcSin}[c x]]}{\sqrt{1-c^2 x^2}}\right)+\frac{1}{2}\left(-3 \operatorname{ArcSin}[c x]^2 \operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[c x]}\right]+3 \operatorname{ArcSin}[c x]^2 \operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[c x]}\right]-3 \pi \operatorname{ArcSin}[c x] \operatorname{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right) e^{-\frac{1}{2} i \operatorname{ArcSin}[c x]}\left(-i+e^{i \operatorname{ArcSin}[c x]}\right)\right]+3 \operatorname{ArcSin}[c x]^2 \operatorname{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right) e^{-\frac{1}{2} i \operatorname{ArcSin}[c x]}\left(-i+e^{i \operatorname{ArcSin}[c x]}\right)\right]-\right.$$

$$3\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\,\left(\left(1+i\right)+\left(1-i\right)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\,\left(\left(1+i\right)+\left(1-i\right)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$3\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$3\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$6\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$6\,\text{PolyLog}\left[3,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-6\,\text{PolyLog}\left[3,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Bigg)\Bigg)$$

Problem 193: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 227 leaves, 10 steps):

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

Result (type 4, 502 leaves):

$$\frac{1}{6 c^4 d^2}\left(\frac{3 a b \sqrt{1-c^2 x^2}}{-1+c x}+\frac{3 a b \sqrt{1-c^2 x^2}}{1+c x}-\frac{3 a^2}{-1+c^2 x^2}+12 i a b \pi \text{ArcSin}[c x]-\frac{3 a b \text{ArcSin}[c x]}{-1+c x}+\right.$$
$$\frac{3 a b \text{ArcSin}[c x]}{1+c x}-\frac{6 b^2 c x \text{ArcSin}[c x]}{\sqrt{1-c^2 x^2}}-6 i a b \text{ArcSin}[c x]^2+\frac{3 b^2 \text{ArcSin}[c x]^2}{1-c^2 x^2}-$$
$$2 i b^2 \text{ArcSin}[c x]^3+24 a b \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+6 a b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+$$
$$12 a b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-6 a b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+$$
$$12 a b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+6 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1+e^{2 i \text{ArcSin}[c x]}\right]+$$
$$3 a^2 \text{Log}\left[1-c^2 x^2\right]-3 b^2 \text{Log}\left[1-c^2 x^2\right]-24 a b \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$6 a b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-6 a b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-$$
$$12 i a b \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-12 i a b \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]-$$
$$\left.6 i b^2 \text{ArcSin}[c x] \text{PolyLog}\left[2,-e^{2 i \text{ArcSin}[c x]}\right]+3 b^2 \text{PolyLog}\left[3,-e^{2 i \text{ArcSin}[c x]}\right]\right)$$

Problem 194: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 233 leaves, 11 steps):

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

Result (type 4, 839 leaves):

$$-\frac{1}{4 c^3 d^2}\left(-\frac{2 a b \sqrt{1-c^2 x^2}}{-1+c x}+\frac{2 a b \sqrt{1-c^2 x^2}}{1+c x}+\frac{2 a^2 c x}{-1+c^2 x^2}-2 i a b \pi \text{ArcSin}[c x]+\right.$$
$$\frac{2 a b \text{ArcSin}[c x]}{-1+c x}+\frac{2 a b \text{ArcSin}[c x]}{1+c x}+\frac{4 b^2 \text{ArcSin}[c x]}{\sqrt{1-c^2 x^2}}+\frac{2 b^2 c x \text{ArcSin}[c x]^2}{-1+c^2 x^2}+$$
$$2 a b \pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+4 a b \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+$$
$$2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 a b \pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-$$
$$4 a b \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+$$
$$2 b^2 \pi \text{ArcSin}[c x] \text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$2 b^2 \pi \text{ArcSin}[c x] \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$a^2 \text{Log}[1-c x]+a^2 \text{Log}[1+c x]-2 a b \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+$$
$$4 b^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$2 b^2 \pi \text{ArcSin}[c x] \text{Log}\left[-\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$4 b^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$2 b^2 \pi \text{ArcSin}[c x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$2 b^2 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$2 a b \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+4 i b (a+b \text{ArcSin}[c x]) \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-$$
$$4 i b (a+b \text{ArcSin}[c x]) \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]-$$
$$\left.4 b^2 \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]+4 b^2 \text{PolyLog}\left[3, i e^{i \text{ArcSin}[c x]}\right]\right)$$

Problem 196: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b \text{ArcSin}[c x])^2}{\left(d-c^2 d x^2\right)^2} d x$$

Optimal (type 4, 230 leaves, 11 steps):

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

Result (type 4, 810 leaves) :

$$\frac{1}{4 d^2}\left(-\frac{2 a^2 x}{-1+c^2 x^2}-\frac{a^2 \text{Log}[1-c x]}{c}+\frac{a^2 \text{Log}[1+c x]}{c}+\right.$$
$$\frac{1}{c} 2 a b\left(\frac{\sqrt{1-c^2 x^2}}{-1+c x}-\frac{\sqrt{1-c^2 x^2}}{1+c x}-i \pi \text{ArcSin}[c x]+\frac{\text{ArcSin}[c x]}{1-c x}-\right.$$
$$\frac{\text{ArcSin}[c x]}{1+c x}+\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+$$
$$\pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-2 \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-$$
$$\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]-\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 \text{ArcSin}[c x])\right]\right]+$$
$$\left.2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-2 i \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]\right)+$$
$$\frac{1}{c} 2 b^2\left(-\frac{2 \text{ArcSin}[c x]}{\sqrt{1-c^2 x^2}}+\frac{c x \text{ArcSin}[c x]^2}{1-c^2 x^2}+\text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-\text{ArcSin}[c x]^2\right.$$
$$\text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+\pi \text{ArcSin}[c x] \text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$\text{ArcSin}[c x]^2 \text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$\pi \text{ArcSin}[c x] \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$\text{ArcSin}[c x]^2 \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$\text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$\pi \text{ArcSin}[c x] \text{Log}\left[-\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$\pi \text{ArcSin}[c x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$\text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$2 i \text{ArcSin}[c x] \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]-2 i \text{ArcSin}[c x] \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]-$$
$$\left.\left.2 \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]+2 \text{PolyLog}\left[3, i e^{i \text{ArcSin}[c x]}\right]\right)\right)$$

Problem 197: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 211 leaves, 12 steps) :

$$-\frac{b c x (a+b \text{ArcSin}[c x])}{d^2 \sqrt{1-c^2 x^2}}+\frac{(a+b \text{ArcSin}[c x])^2}{2 d^2 (1-c^2 x^2)}-\frac{2 (a+b \text{ArcSin}[c x])^2 \text{ArcTanh}[e^{2 i \text{ArcSin}[c x]}]}{d^2}-\frac{b^2 \text{Log}[1-c^2 x^2]}{2 d^2}+\frac{i b (a+b \text{ArcSin}[c x]) \text{PolyLog}[2,-e^{2 i \text{ArcSin}[c x]}]}{d^2}-\frac{i b (a+b \text{ArcSin}[c x]) \text{PolyLog}[2,e^{2 i \text{ArcSin}[c x]}]}{d^2}-\frac{b^2 \text{PolyLog}[3,-e^{2 i \text{ArcSin}[c x]}]}{2 d^2}+\frac{b^2 \text{PolyLog}[3,e^{2 i \text{ArcSin}[c x]}]}{2 d^2}$$

Result (type 4, 612 leaves):

$$\frac{1}{2 d^2}\Bigg(-\frac{1}{12} i b^2 \pi^3+\frac{a^2}{1-c^2 x^2}+\frac{a b \sqrt{1-c^2 x^2}}{-1+c x}+\frac{a b \sqrt{1-c^2 x^2}}{1+c x}-4 i a b \pi \text{ArcSin}[c x]+\frac{a b \text{ArcSin}[c x]}{1-c x}+\frac{a b \text{ArcSin}[c x]}{1+c x}-\frac{2 b^2 c x \text{ArcSin}[c x]}{\sqrt{1-c^2 x^2}}+\frac{b^2 \text{ArcSin}[c x]^2}{1-c^2 x^2}+$$
$$\frac{4}{3} i b^2 \text{ArcSin}[c x]^3-8 a b \pi \text{Log}[1+e^{-i \text{ArcSin}[c x]}]-2 a b \pi \text{Log}[1-i e^{i \text{ArcSin}[c x]}]-$$
$$4 a b \text{ArcSin}[c x] \text{Log}[1-i e^{i \text{ArcSin}[c x]}]+2 a b \pi \text{Log}[1+i e^{i \text{ArcSin}[c x]}]-$$
$$4 a b \text{ArcSin}[c x] \text{Log}[1+i e^{i \text{ArcSin}[c x]}]+2 b^2 \text{ArcSin}[c x]^2 \text{Log}[1-e^{-2 i \text{ArcSin}[c x]}]+$$
$$4 a b \text{ArcSin}[c x] \text{Log}[1-e^{2 i \text{ArcSin}[c x]}]-2 b^2 \text{ArcSin}[c x]^2 \text{Log}[1+e^{2 i \text{ArcSin}[c x]}]+$$
$$2 a^2 \text{Log}[c x]-a^2 \text{Log}[1-c^2 x^2]-b^2 \text{Log}[1-c^2 x^2]+8 a b \pi \text{Log}[\text{Cos}[\tfrac{1}{2} \text{ArcSin}[c x]]]-$$
$$2 a b \pi \text{Log}[-\text{Cos}[\tfrac{1}{4}(\pi+2 \text{ArcSin}[c x])]]+2 a b \pi \text{Log}[\text{Sin}[\tfrac{1}{4}(\pi+2 \text{ArcSin}[c x])]]+$$
$$4 i a b \text{PolyLog}[2,-i e^{i \text{ArcSin}[c x]}]+4 i a b \text{PolyLog}[2,i e^{i \text{ArcSin}[c x]}]+$$
$$2 i b^2 \text{ArcSin}[c x] \text{PolyLog}[2,e^{-2 i \text{ArcSin}[c x]}]+2 i b^2 \text{ArcSin}[c x] \text{PolyLog}[2,-e^{2 i \text{ArcSin}[c x]}]-$$
$$2 i a b \text{PolyLog}[2,e^{2 i \text{ArcSin}[c x]}]+b^2 \text{PolyLog}[3,e^{-2 i \text{ArcSin}[c x]}]-b^2 \text{PolyLog}[3,-e^{2 i \text{ArcSin}[c x]}]\Bigg)$$

Problem 198: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 324 leaves, 20 steps):

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

Result (type 4, 1175 leaves):

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

$$b^2\,c\left(-4\,\text{ArcSin}[c\,x]-2\,\text{ArcSin}[c\,x]^2\,\text{Cot}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+8\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{i\,\text{ArcSin}[c\,x]}\right]+6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]-6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]-8\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+e^{i\,\text{ArcSin}[c\,x]}\right]+\right.$$

$$6\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\,\left(\left(1+i\right)+\left(1-i\right)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\,\left(\left(1+i\right)+\left(1-i\right)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$6\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$6\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$6\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$8\,i\,\text{PolyLog}\left[2,-e^{i\,\text{ArcSin}[c\,x]}\right]+12\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$12\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]-8\,i\,\text{PolyLog}\left[2,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$12\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+12\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$\frac{\text{ArcSin}[c\,x]^2}{\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^2}-$$
$$\frac{4\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}-\frac{\text{ArcSin}[c\,x]^2}{\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^2}+$$
$$\left.\frac{4\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}-2\,\text{ArcSin}[c\,x]^2\,\text{Tan}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)$$

Problem 199: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 270 leaves, 17 steps):

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

Result (type 4, 759 leaves):

$$\frac{1}{2\,d^2}\left(-\frac{a^2}{x^2}+\frac{a^2\,c^2}{1-c^2\,x^2}-\frac{2\,a\,b\,c\,\sqrt{1-c^2\,x^2}}{x}+\frac{a\,b\,c^2\,\sqrt{1-c^2\,x^2}}{-1+c\,x}+\frac{a\,b\,c^2\,\sqrt{1-c^2\,x^2}}{1+c\,x}-8\,i\,a\,b\,c^2\,\pi\,\text{ArcSin}[c\,x]-\frac{2\,a\,b\,\text{ArcSin}[c\,x]}{x^2}+\frac{a\,b\,c^2\,\text{ArcSin}[c\,x]}{1-c\,x}+\frac{a\,b\,c^2\,\text{ArcSin}[c\,x]}{1+c\,x}-\frac{2\,b^2\,c^3\,x\,\text{ArcSin}[c\,x]}{\sqrt{1-c^2\,x^2}}-\frac{2\,b^2\,c\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]}{x}-\frac{b^2\,\text{ArcSin}[c\,x]^2}{x^2}+\frac{b^2\,c^2\,\text{ArcSin}[c\,x]^2}{1-c^2\,x^2}-16\,a\,b\,c^2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]-4\,a\,b\,c^2\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-8\,a\,b\,c^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,a\,b\,c^2\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-8\,a\,b\,c^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+8\,a\,b\,c^2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{2\,i\,\text{ArcSin}[c\,x]}\right]+4\,b^2\,c^2\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-e^{2\,i\,\text{ArcSin}[c\,x]}\right]-4\,b^2\,c^2\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+e^{2\,i\,\text{ArcSin}[c\,x]}\right]+4\,a^2\,c^2\,\text{Log}[x]+2\,b^2\,c^2\,\text{Log}\left[\frac{c\,x}{\sqrt{1-c^2\,x^2}}\right]-2\,a^2\,c^2\,\text{Log}\left[1-c^2\,x^2\right]+16\,a\,b\,c^2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-4\,a\,b\,c^2\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+4\,a\,b\,c^2\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+8\,i\,a\,b\,c^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+8\,i\,a\,b\,c^2\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,i\,b^2\,c^2\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]-4\,i\,a\,b\,c^2\,\text{PolyLog}\left[2,e^{2\,i\,\text{ArcSin}[c\,x]}\right]-4\,i\,b^2\,c^2\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,e^{2\,i\,\text{ArcSin}[c\,x]}\right]-2\,b^2\,c^2\,\text{PolyLog}\left[3,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,c^2\,\text{PolyLog}\left[3,e^{2\,i\,\text{ArcSin}[c\,x]}\right]\right)$$

Problem 200: Result more than twice size of optimal antiderivative.

$$\int\frac{(a+b\,\text{ArcSin}[c\,x])^2}{x^4\,(d-c^2\,d\,x^2)^2}\,dx$$

Optimal (type 4, 439 leaves, 32 steps):

$$-\frac{b^2 c^2}{3 d^2 x}-\frac{2 b c^3 \left(a+b \text{ArcSin}[c x]\right)}{3 d^2 \sqrt{1-c^2 x^2}}-\frac{b c \left(a+b \text{ArcSin}[c x]\right)}{3 d^2 x^2 \sqrt{1-c^2 x^2}}-\frac{\left(a+b \text{ArcSin}[c x]\right)^2}{3 d^2 x^3 \left(1-c^2 x^2\right)}-\frac{5 c^2 \left(a+b \text{ArcSin}[c x]\right)^2}{3 d^2 x \left(1-c^2 x^2\right)}+\frac{5 c^4 x \left(a+b \text{ArcSin}[c x]\right)^2}{2 d^2 \left(1-c^2 x^2\right)}-\frac{5 i c^3 \left(a+b \text{ArcSin}[c x]\right)^2 \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{d^2}-\frac{26 b c^3 \left(a+b \text{ArcSin}[c x]\right) \text{ArcTanh}\left[e^{i \text{ArcSin}[c x]}\right]}{3 d^2}+\frac{b^2 c^3 \text{ArcTanh}[c x]}{d^2}+\frac{13 i b^2 c^3 \text{PolyLog}\left[2,-e^{i \text{ArcSin}[c x]}\right]}{3 d^2}+\frac{5 i b c^3 \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{d^2}-\frac{5 i b c^3 \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]}{d^2}-\frac{13 i b^2 c^3 \text{PolyLog}\left[2,e^{i \text{ArcSin}[c x]}\right]}{3 d^2}-\frac{5 b^2 c^3 \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]}{d^2}+\frac{5 b^2 c^3 \text{PolyLog}\left[3,i e^{i \text{ArcSin}[c x]}\right]}{d^2}$$

Result (type 4, 1541 leaves):

$$-\frac{a^2}{3 d^2 x^3}-\frac{2 a^2 c^2}{d^2 x}-\frac{a^2 c^4 x}{2 d^2 \left(-1+c^2 x^2\right)}-\frac{5 a^2 c^3 \text{Log}[1-c x]}{4 d^2}+\frac{5 a^2 c^3 \text{Log}[1+c x]}{4 d^2}+$$

$$\frac{1}{d^2} 2 a b \left(-\frac{c \sqrt{1-c^2 x^2}}{6 x^2}+\frac{c^3 \left(\sqrt{1-c^2 x^2}-\text{ArcSin}[c x]\right)}{4 (-1+c x)}-\frac{\text{ArcSin}[c x]}{3 x^3}-\frac{c^4 \left(\sqrt{1-c^2 x^2}+\text{ArcSin}[c x]\right)}{4 \left(c+c^2 x\right)}+\frac{1}{6} c^3 \text{Log}[x]-\frac{1}{6} c^3 \text{Log}\left[1+\sqrt{1-c^2 x^2}\right]+2 c^2 \left(-\frac{\text{ArcSin}[c x]}{x}+c \text{Log}[x]-c \text{Log}\left[1+\sqrt{1-c^2 x^2}\right]\right)-\frac{5}{4} c^4 \left(\frac{3 i \pi \text{ArcSin}[c x]}{2 c}-\frac{i \text{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]}{c}-\frac{\pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}+\frac{2 \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c}+\frac{\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{c}\right)+\frac{5}{4} c^4 \left(\frac{i \pi \text{ArcSin}[c x]}{2 c}-\frac{i \text{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]}{c}+\frac{\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}+\frac{2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c}-\frac{\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]}{c}\right)\right)+$$

$$\frac{1}{d^2} b^2 c^3 \left(\frac{5}{6} \text{ArcSin}[c x]^3 + \frac{1}{12} \left(-2 \text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - 13 \text{ArcSin}[c x]^2 \text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)\right.$$
$$\text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - \frac{1}{12} \text{ArcSin}[c x] \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2 -$$
$$\frac{1}{24} \text{ArcSin}[c x]^2 \text{Cot}\left[\frac{1}{2} \text{ArcSin}[c x]\right] \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2 +$$
$$\frac{26}{3} \left(\frac{1}{8} i \text{ArcSin}[c x]^2 - \frac{1}{2} \text{ArcSin}[c x] \text{Log}\left[1 + e^{i \text{ArcSin}[c x]}\right] + \frac{1}{2} i \text{PolyLog}\left[2, -e^{i \text{ArcSin}[c x]}\right]\right) +$$
$$\frac{26}{3} \left(\frac{1}{2} \text{ArcSin}[c x] \text{Log}\left[1 - e^{i \text{ArcSin}[c x]}\right] - \frac{1}{2} i \left(\frac{1}{4} \text{ArcSin}[c x]^2 + \text{PolyLog}\left[2, e^{i \text{ArcSin}[c x]}\right]\right)\right) +$$
$$\frac{1}{6} \left(-6 \text{ArcSin}[c x] - 5 \text{ArcSin}[c x]^3 + 15 \text{ArcSin}[c x]^2 \text{Log}\left[1 - i e^{i \text{ArcSin}[c x]}\right] -\right.$$
$$15 \text{ArcSin}[c x]^2 \text{Log}\left[1 + i e^{i \text{ArcSin}[c x]}\right] + 15 \pi \text{ArcSin}[c x] \text{Log}\left[\left(-\frac{1}{2} - \frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\right.$$
$$\left.\left(-i + e^{i \text{ArcSin}[c x]}\right)\right] - 15 \text{ArcSin}[c x]^2 \text{Log}\left[\left(\frac{1}{2} + \frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left(-i + e^{i \text{ArcSin}[c x]}\right)\right] +$$
$$15 \pi \text{ArcSin}[c x] \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left((1 + i) + (1 - i) e^{i \text{ArcSin}[c x]}\right)\right] +$$
$$15 \text{ArcSin}[c x]^2 \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left((1 + i) + (1 - i) e^{i \text{ArcSin}[c x]}\right)\right] -$$
$$6 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] +$$
$$15 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] -$$
$$15 \pi \text{ArcSin}[c x] \text{Log}\left[-\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] + \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] +$$
$$6 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] + \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] -$$
$$15 \pi \text{ArcSin}[c x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] + \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] -$$
$$15 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] + \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right] +$$
$$30 i \text{ArcSin}[c x] \text{PolyLog}\left[2, -i e^{i \text{ArcSin}[c x]}\right] - 30 i \text{ArcSin}[c x] \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right] -$$
$$\left.30 \text{PolyLog}\left[3, -i e^{i \text{ArcSin}[c x]}\right] + 30 \text{PolyLog}\left[3, i e^{i \text{ArcSin}[c x]}\right]\right) +$$
$$\frac{1}{12} \text{ArcSin}[c x] \text{Sec}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2 + \frac{\text{ArcSin}[c x]^2}{4 \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2} -$$
$$\frac{\text{ArcSin}[c x] \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] - \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]} -$$
$$\frac{\text{ArcSin}[c x]^2}{4 \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] + \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2} +$$

$$\frac{\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}+\frac{1}{12}\text{Sec}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-13\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)-\frac{1}{24}\text{ArcSin}[c\,x]^2\,\text{Sec}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]^2\text{Tan}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg)$$

Problem 201: Result more than twice size of optimal antiderivative.

$$\int\frac{x^4\,(a+b\,\text{ArcSin}[c\,x])^2}{(d-c^2\,d\,x^2)^3}\,dx$$

Optimal (type 4, 343 leaves, 16 steps):

$$\frac{b^2\,x}{12\,c^4\,d^3\,(1-c^2\,x^2)}-\frac{b\,(a+b\,\text{ArcSin}[c\,x])}{6\,c^5\,d^3\,(1-c^2\,x^2)^{3/2}}+\frac{5\,b\,(a+b\,\text{ArcSin}[c\,x])}{4\,c^5\,d^3\,\sqrt{1-c^2\,x^2}}+\frac{x^3\,(a+b\,\text{ArcSin}[c\,x])^2}{4\,c^2\,d^3\,(1-c^2\,x^2)^2}-\frac{3\,x\,(a+b\,\text{ArcSin}[c\,x])^2}{8\,c^4\,d^3\,(1-c^2\,x^2)}-\frac{3\,i\,(a+b\,\text{ArcSin}[c\,x])^2\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c^5\,d^3}-\frac{7\,b^2\,\text{ArcTanh}[c\,x]}{6\,c^5\,d^3}+\frac{3\,i\,b\,(a+b\,\text{ArcSin}[c\,x])\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c^5\,d^3}-\frac{3\,i\,b\,(a+b\,\text{ArcSin}[c\,x])\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c^5\,d^3}-\frac{3\,b^2\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c^5\,d^3}+\frac{3\,b^2\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c^5\,d^3}$$

Result (type 4, 1148 leaves):

$$\frac{a^2\,x}{4\,c^4\,d^3\,(-1+c^2\,x^2)^2}+\frac{5\,a^2\,x}{8\,c^4\,d^3\,(-1+c^2\,x^2)}-\frac{3\,a^2\,\text{Log}[1-c\,x]}{16\,c^5\,d^3}+\frac{3\,a^2\,\text{Log}[1+c\,x]}{16\,c^5\,d^3}-\frac{1}{d^3}2\,a\,b\left(\frac{(2-c\,x)\,\sqrt{1-c^2\,x^2}-3\,\text{ArcSin}[c\,x]}{48\,c^5\,(-1+c\,x)^2}+\frac{5\left(\sqrt{1-c^2\,x^2}-\text{ArcSin}[c\,x]\right)}{16\,c^5\,(-1+c\,x)}-\frac{5\left(\sqrt{1-c^2\,x^2}+\text{ArcSin}[c\,x]\right)}{16\,c^4\,(c+c^2\,x)}+\frac{(2+c\,x)\,\sqrt{1-c^2\,x^2}+3\,\text{ArcSin}[c\,x]}{48\,c^5\,(1+c\,x)^2}+\frac{1}{16\,c^4}3\left(\frac{3\,i\,\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]}{c}+\frac{\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\,x])\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)-\frac{1}{16\,c^4}$$

$$3\left(\frac{i\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]}{c}-\frac{\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)\right)-$$

$$\frac{1}{c^5\,d^3}\,b^2\left(\frac{1}{24}\left(-9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-\right.\right.$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$18\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+18\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$\left.18\,\text{PolyLog}\left[3,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-18\,\text{PolyLog}\left[3,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)-\frac{1}{96\left(1-c^2\,x^2\right)^2}$$
$$\left(2\,c\,x+74\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]+9\,c\,x\,\text{ArcSin}[c\,x]^2+30\,\text{ArcSin}[c\,x]\,\text{Cos}[3\,\text{ArcSin}[c\,x]]+\right.$$
$$\left.\left.2\,\text{Sin}[3\,\text{ArcSin}[c\,x]]-15\,\text{ArcSin}[c\,x]^2\,\text{Sin}[3\,\text{ArcSin}[c\,x]]\right)\right)$$

Problem 203: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 341 leaves, 15 steps):

$$\frac{b^2 x}{12 c^2 d^3 \left(1-c^2 x^2\right)}-\frac{b \left(a+b \text{ArcSin}[c x]\right)}{6 c^3 d^3 \left(1-c^2 x^2\right)^{3/2}}+\frac{b \left(a+b \text{ArcSin}[c x]\right)}{4 c^3 d^3 \sqrt{1-c^2 x^2}}+$$
$$\frac{x \left(a+b \text{ArcSin}[c x]\right)^2}{4 c^2 d^3 \left(1-c^2 x^2\right)^2}-\frac{x \left(a+b \text{ArcSin}[c x]\right)^2}{8 c^2 d^3 \left(1-c^2 x^2\right)}+\frac{i \left(a+b \text{ArcSin}[c x]\right)^2 \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}-$$
$$\frac{b^2 \text{ArcTanh}[c x]}{6 c^3 d^3}-\frac{i b \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}+$$
$$\frac{i b \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}+$$
$$\frac{b^2 \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}-\frac{b^2 \text{PolyLog}\left[3,i e^{i \text{ArcSin}[c x]}\right]}{4 c^3 d^3}$$

Result (type 4, 1082 leaves):

$$\frac{a^2 x}{4 c^2 d^3 \left(-1+c^2 x^2\right)^2}+\frac{a^2 x}{8 c^2 d^3 \left(-1+c^2 x^2\right)}+\frac{a^2 \text{Log}[1-c x]}{16 c^3 d^3}-$$
$$\frac{a^2 \text{Log}[1+c x]}{16 c^3 d^3}-\frac{1}{c^3 d^3}2 a b \left(\frac{\sqrt{1-c^2 x^2}-\text{ArcSin}[c x]}{16 (-1+c x)}-\frac{\sqrt{1-c^2 x^2}+\text{ArcSin}[c x]}{16 (1+c x)}-\right.$$
$$\frac{(-2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]}{48 (-1+c x)^2}+\frac{(2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]}{48 (1+c x)^2}+\frac{1}{16}$$
$$\left(-\frac{3}{2} i \pi \text{ArcSin}[c x]+\frac{1}{2} i \text{ArcSin}[c x]^2-2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+\pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-\right.$$
$$2 \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$\left.\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]\right)+$$
$$\frac{1}{16} \left(\frac{1}{2} i \pi \text{ArcSin}[c x]-\frac{1}{2} i \text{ArcSin}[c x]^2+2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+\right.$$
$$2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$
$$\left.\left.\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]-2 i \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]\right)\right)-$$
$$\frac{1}{c^3 d^3} b^2 \left(\frac{1}{24} \left(3 \text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-3 \text{ArcSin}[c x]^2 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+\right.\right.$$
$$3 \pi \text{ArcSin}[c x] \text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left(-i+e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$3 \text{ArcSin}[c x]^2 \text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left(-i+e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$3 \pi \text{ArcSin}[c x] \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]+$$
$$3 \text{ArcSin}[c x]^2 \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]} \left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]-$$
$$4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$

$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$3\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$3\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$6\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-6\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$\left.6\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)-\frac{1}{96\,\left(1-c^2\,x^2\right)^2}$$
$$\left(2\,c\,x+2\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]+21\,c\,x\,\text{ArcSin}[c\,x]^2+6\,\text{ArcSin}[c\,x]\,\text{Cos}[3\,\text{ArcSin}[c\,x]]+\right.$$
$$\left.\left.2\,\text{Sin}[3\,\text{ArcSin}[c\,x]]-3\,\text{ArcSin}[c\,x]^2\,\text{Sin}[3\,\text{ArcSin}[c\,x]]\right)\right)$$

Problem 205: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 332 leaves, 15 steps):

$$\frac{b^2\,x}{12\,d^3\,\left(1-c^2\,x^2\right)}-\frac{b\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{6\,c\,d^3\,\left(1-c^2\,x^2\right)^{3/2}}-\frac{3\,b\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{4\,c\,d^3\,\sqrt{1-c^2\,x^2}}+\frac{x\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{4\,d^3\,\left(1-c^2\,x^2\right)^2}+$$
$$\frac{3\,x\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{8\,d^3\,\left(1-c^2\,x^2\right)}-\frac{3\,i\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}+$$
$$\frac{5\,b^2\,\text{ArcTanh}[c\,x]}{6\,c\,d^3}+\frac{3\,i\,b\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}-$$
$$\frac{3\,i\,b\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}-$$
$$\frac{3\,b^2\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}+\frac{3\,b^2\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{4\,c\,d^3}$$

Result (type 4, 1069 leaves):

$$\frac{a^2\,x}{4\,d^3\,\left(-1+c^2\,x^2\right)^2}-\frac{3\,a^2\,x}{8\,d^3\,\left(-1+c^2\,x^2\right)}-\frac{3\,a^2\,\text{Log}[1-c\,x]}{16\,c\,d^3}+\frac{3\,a^2\,\text{Log}[1+c\,x]}{16\,c\,d^3}-$$
$$\frac{1}{c\,d^3}2\,a\,b\left(-\frac{3\,\left(\sqrt{1-c^2\,x^2}-\text{ArcSin}[c\,x]\right)}{16\,\left(-1+c\,x\right)}+\frac{3\,\left(\sqrt{1-c^2\,x^2}+\text{ArcSin}[c\,x]\right)}{16\,\left(1+c\,x\right)}-\right.$$

$$\frac{(-2+c\,x)\,\sqrt{1-c^2\,x^2}+3\,\text{ArcSin}[c\,x]}{48\,(-1+c\,x)^2}+\frac{(2+c\,x)\,\sqrt{1-c^2\,x^2}+3\,\text{ArcSin}[c\,x]}{48\,(1+c\,x)^2}+$$

$$\frac{3}{16}\left(\frac{3}{2}\,i\,\pi\,\text{ArcSin}[c\,x]-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]^2+2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]-\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+\right.$$
$$2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$\left.\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-2\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)-$$

$$\frac{3}{16}\left(\frac{1}{2}\,i\,\pi\,\text{ArcSin}[c\,x]-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]^2+2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+\right.$$
$$2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$\left.\left.\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-2\,i\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)\right)-$$

$$\frac{1}{c\,d^3}\,b^2\left(-\frac{1}{48\,(1-c^2\,x^2)^2}\left(-35\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]+c\,x\,\left(2+21\,\text{ArcSin}[c\,x]^2+\right.\right.\right.$$
$$\left.\left.(2+9\,\text{ArcSin}[c\,x]^2)\,\text{Cos}[2\,\text{ArcSin}[c\,x]]\right)-9\,\text{ArcSin}[c\,x]\,\text{Cos}[3\,\text{ArcSin}[c\,x]]\right)+$$
$$\frac{1}{24}\left(-9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-\right.$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right)e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\frac{1}{2}\,e^{-\frac{1}{2}\,i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$20\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$20\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$18\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+18\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$\left.\left.18\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-18\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)\right)$$

Problem 206: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + b \,\text{ArcSin}[c\, x])^2}{x\, (d - c^2\, d\, x^2)^3}\, dx$$

Optimal (type 4, 296 leaves, 17 steps):

$$\frac{b^2}{12\, d^3\, (1 - c^2\, x^2)} - \frac{b\, c\, x\, (a + b\, \text{ArcSin}[c\, x])}{6\, d^3\, (1 - c^2\, x^2)^{3/2}} - \frac{4\, b\, c\, x\, (a + b\, \text{ArcSin}[c\, x])}{3\, d^3\, \sqrt{1 - c^2\, x^2}} +$$
$$\frac{(a + b\, \text{ArcSin}[c\, x])^2}{4\, d^3\, (1 - c^2\, x^2)^2} + \frac{(a + b\, \text{ArcSin}[c\, x])^2}{2\, d^3\, (1 - c^2\, x^2)} - \frac{2\, (a + b\, \text{ArcSin}[c\, x])^2\, \text{ArcTanh}\left[e^{2\, i\, \text{ArcSin}[c\, x]}\right]}{d^3} -$$
$$\frac{2\, b^2\, \text{Log}\left[1 - c^2\, x^2\right]}{3\, d^3} + \frac{i\, b\, (a + b\, \text{ArcSin}[c\, x])\, \text{PolyLog}\left[2, -e^{2\, i\, \text{ArcSin}[c\, x]}\right]}{d^3} -$$
$$\frac{i\, b\, (a + b\, \text{ArcSin}[c\, x])\, \text{PolyLog}\left[2, e^{2\, i\, \text{ArcSin}[c\, x]}\right]}{d^3} -$$
$$\frac{b^2\, \text{PolyLog}\left[3, -e^{2\, i\, \text{ArcSin}[c\, x]}\right]}{2\, d^3} + \frac{b^2\, \text{PolyLog}\left[3, e^{2\, i\, \text{ArcSin}[c\, x]}\right]}{2\, d^3}$$

Result (type 4, 800 leaves):

$$\frac{a^2}{4 d^3 \left(-1+c^2 x^2\right)^2}-\frac{a^2}{2 d^3 \left(-1+c^2 x^2\right)}+\frac{a^2 \,\text{Log}[c x]}{d^3}-\frac{a^2 \,\text{Log}\left[1-c^2 x^2\right]}{2 d^3}-\frac{1}{d^3} 2 a b \left(-\frac{5 \left(\sqrt{1-c^2 x^2}-\text{ArcSin}[c x]\right)}{16 (-1+c x)}-\frac{5 \left(\sqrt{1-c^2 x^2}+\text{ArcSin}[c x]\right)}{16 (1+c x)}-\frac{(-2+c x) \sqrt{1-c^2 x^2}+3 \,\text{ArcSin}[c x]}{48 (-1+c x)^2}-\frac{(2+c x) \sqrt{1-c^2 x^2}+3 \,\text{ArcSin}[c x]}{48 (1+c x)^2}-\text{ArcSin}[c x] \,\text{Log}\left[1-e^{2 i \,\text{ArcSin}[c x]}\right]+\frac{1}{2} \left(\frac{3}{2} i \pi \,\text{ArcSin}[c x]-\frac{1}{2} i \,\text{ArcSin}[c x]^2+2 \pi \,\text{Log}\left[1+e^{-i \,\text{ArcSin}[c x]}\right]-\pi \,\text{Log}\left[1+i e^{i \,\text{ArcSin}[c x]}\right]+2 \,\text{ArcSin}[c x] \,\text{Log}\left[1+i e^{i \,\text{ArcSin}[c x]}\right]-2 \pi \,\text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+\pi \,\text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \,\text{ArcSin}[c x])\right]\right]-2 i \,\text{PolyLog}\left[2,-i e^{i \,\text{ArcSin}[c x]}\right]\right)+\frac{1}{2} \left(\frac{1}{2} i \pi \,\text{ArcSin}[c x]-\frac{1}{2} i \,\text{ArcSin}[c x]^2+2 \pi \,\text{Log}\left[1+e^{-i \,\text{ArcSin}[c x]}\right]+\pi \,\text{Log}\left[1-i e^{i \,\text{ArcSin}[c x]}\right]+2 \,\text{ArcSin}[c x] \,\text{Log}\left[1-i e^{i \,\text{ArcSin}[c x]}\right]-2 \pi \,\text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-\pi \,\text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \,\text{ArcSin}[c x])\right]\right]-2 i \,\text{PolyLog}\left[2, i e^{i \,\text{ArcSin}[c x]}\right]\right)+\frac{1}{2} i \left(\text{ArcSin}[c x]^2+\text{PolyLog}\left[2, e^{2 i \,\text{ArcSin}[c x]}\right]\right)\right)-\frac{1}{24 d^3} b^2 \left(i \pi^3-\frac{2}{1-c^2 x^2}+\frac{4 c x \,\text{ArcSin}[c x]}{\left(1-c^2 x^2\right)^{3/2}}+\frac{32 c x \,\text{ArcSin}[c x]}{\sqrt{1-c^2 x^2}}-\frac{6 \,\text{ArcSin}[c x]^2}{\left(1-c^2 x^2\right)^2}-\frac{12 \,\text{ArcSin}[c x]^2}{1-c^2 x^2}-16 i \,\text{ArcSin}[c x]^3-24 \,\text{ArcSin}[c x]^2 \,\text{Log}\left[1-e^{-2 i \,\text{ArcSin}[c x]}\right]+24 \,\text{ArcSin}[c x]^2 \,\text{Log}\left[1+e^{2 i \,\text{ArcSin}[c x]}\right]+32 \,\text{Log}\left[\sqrt{1-c^2 x^2}\right]-24 i \,\text{ArcSin}[c x] \,\text{PolyLog}\left[2, e^{-2 i \,\text{ArcSin}[c x]}\right]-24 i \,\text{ArcSin}[c x] \,\text{PolyLog}\left[2,-e^{2 i \,\text{ArcSin}[c x]}\right]-12 \,\text{PolyLog}\left[3, e^{-2 i \,\text{ArcSin}[c x]}\right]+12 \,\text{PolyLog}\left[3,-e^{2 i \,\text{ArcSin}[c x]}\right]\right)$$

Problem 207: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 429 leaves, 27 steps):

$$\frac{b^2 c^2 x}{12 d^3 \left(1-c^2 x^2\right)}-\frac{b c \left(a+b \text{ArcSin}[c x]\right)}{6 d^3 \left(1-c^2 x^2\right)^{3/2}}-\frac{7 b c \left(a+b \text{ArcSin}[c x]\right)}{4 d^3 \sqrt{1-c^2 x^2}}-\frac{\left(a+b \text{ArcSin}[c x]\right)^2}{d^3 x \left(1-c^2 x^2\right)^2}+\frac{5 c^2 x \left(a+b \text{ArcSin}[c x]\right)^2}{4 d^3 \left(1-c^2 x^2\right)^2}+\frac{15 c^2 x \left(a+b \text{ArcSin}[c x]\right)^2}{8 d^3 \left(1-c^2 x^2\right)}-\frac{15 i c \left(a+b \text{ArcSin}[c x]\right)^2 \text{ArcTan}\left[e^{i \text{ArcSin}[c x]}\right]}{4 d^3}-\frac{4 b c \left(a+b \text{ArcSin}[c x]\right) \text{ArcTanh}\left[e^{i \text{ArcSin}[c x]}\right]}{d^3}+\frac{11 b^2 c \text{ArcTanh}[c x]}{6 d^3}+\frac{2 i b^2 c \text{PolyLog}\left[2,-e^{i \text{ArcSin}[c x]}\right]}{d^3}+\frac{15 i b c \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{4 d^3}-\frac{15 i b c \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]}{4 d^3}-\frac{2 i b^2 c \text{PolyLog}\left[2,e^{i \text{ArcSin}[c x]}\right]}{d^3}-\frac{15 b^2 c \text{PolyLog}\left[3,-i e^{i \text{ArcSin}[c x]}\right]}{4 d^3}+\frac{15 b^2 c \text{PolyLog}\left[3,i e^{i \text{ArcSin}[c x]}\right]}{4 d^3}$$

Result (type 4, 1416 leaves):

$$-\frac{a^2}{d^3 x}+\frac{a^2 c^2 x}{4 d^3 \left(-1+c^2 x^2\right)^2}-\frac{7 a^2 c^2 x}{8 d^3 \left(-1+c^2 x^2\right)}-\frac{15 a^2 c \text{Log}[1-c x]}{16 d^3}+\frac{15 a^2 c \text{Log}[1+c x]}{16 d^3}-\frac{1}{d^3} 2 a b c \left(-\frac{7 \left(\sqrt{1-c^2 x^2}-\text{ArcSin}[c x]\right)}{16 (-1+c x)}+\frac{\text{ArcSin}[c x]}{c x}+\frac{7 \left(\sqrt{1-c^2 x^2}+\text{ArcSin}[c x]\right)}{16 (1+c x)}-\frac{(-2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]}{48 (-1+c x)^2}+\frac{(2+c x) \sqrt{1-c^2 x^2}+3 \text{ArcSin}[c x]}{48 (1+c x)^2}-\text{Log}[c x]+\text{Log}\left[1+\sqrt{1-c^2 x^2}\right]+\frac{15}{16} \left(\frac{3}{2} i \pi \text{ArcSin}[c x]-\frac{1}{2} i \text{ArcSin}[c x]^2+2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]-\pi \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+2 \text{ArcSin}[c x] \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]-2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]\right)-\frac{15}{16} \left(\frac{1}{2} i \pi \text{ArcSin}[c x]-\frac{1}{2} i \text{ArcSin}[c x]^2+2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]-2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]-2 i \text{PolyLog}\left[2,i e^{i \text{ArcSin}[c x]}\right]\right)\right)-$$

$$\frac{1}{d^3} b^2 c \left(-2 i \text{PolyLog}\left[2,-e^{i \text{ArcSin}[c x]}\right]+\frac{1}{24} \left(44 \text{ArcSin}[c x]+15 \text{ArcSin}[c x]^3-45 \text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+45 \text{ArcSin}[c x]^2 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-\right.\right.$$

$$45\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right)e^{-\frac{1}{2}i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$45\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right)e^{-\frac{1}{2}i\,\text{ArcSin}[c\,x]}\left(-i+e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$45\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\frac{1}{2}e^{-\frac{1}{2}i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]-$$
$$45\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\frac{1}{2}e^{-\frac{1}{2}i\,\text{ArcSin}[c\,x]}\left((1+i)+(1-i)\,e^{i\,\text{ArcSin}[c\,x]}\right)\right]+$$
$$44\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$
$$45\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$
$$45\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[-\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$
$$44\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$
$$45\,\pi\,\text{ArcSin}[c\,x]\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$
$$45\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$
$$90\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+90\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$90\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-90\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Bigg)-$$
$$\frac{1}{384\,c\,x\,\left(1-c^2x^2\right)^2}\Big(4+88\,c\,x\,\text{ArcSin}[c\,x]-54\,\text{ArcSin}[c\,x]^2+30\,c\,x\,\text{ArcSin}[c\,x]^3-$$
$$240\,\text{ArcSin}[c\,x]^2\,\text{Cos}[2\,\text{ArcSin}[c\,x]]-4\,\text{Cos}[4\,\text{ArcSin}[c\,x]]-$$
$$90\,\text{ArcSin}[c\,x]^2\,\text{Cos}[4\,\text{ArcSin}[c\,x]]+96\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$96\,c\,x\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+e^{i\,\text{ArcSin}[c\,x]}\right]-768\,i\,c\,x\,\left(1-c^2x^2\right)^2\,\text{PolyLog}\left[2,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$200\,\text{ArcSin}[c\,x]\,\text{Sin}[2\,\text{ArcSin}[c\,x]]+132\,\text{ArcSin}[c\,x]\,\text{Sin}[3\,\text{ArcSin}[c\,x]]+$$
$$45\,\text{ArcSin}[c\,x]^3\,\text{Sin}[3\,\text{ArcSin}[c\,x]]+144\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{i\,\text{ArcSin}[c\,x]}\right]$$
$$\text{Sin}[3\,\text{ArcSin}[c\,x]]-144\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+e^{i\,\text{ArcSin}[c\,x]}\right]\,\text{Sin}[3\,\text{ArcSin}[c\,x]]-$$
$$84\,\text{ArcSin}[c\,x]\,\text{Sin}[4\,\text{ArcSin}[c\,x]]+44\,\text{ArcSin}[c\,x]\,\text{Sin}[5\,\text{ArcSin}[c\,x]]+$$
$$15\,\text{ArcSin}[c\,x]^3\,\text{Sin}[5\,\text{ArcSin}[c\,x]]+48\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{i\,\text{ArcSin}[c\,x]}\right]$$
$$\text{Sin}[5\,\text{ArcSin}[c\,x]]-48\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+e^{i\,\text{ArcSin}[c\,x]}\right]\,\text{Sin}[5\,\text{ArcSin}[c\,x]]\Big)\Bigg)$$

Problem 208: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 403 leaves, 23 steps):

$$\frac{b^2 c^2}{12 d^3 \left(1-c^2 x^2\right)}-\frac{b c \left(a+b \text{ArcSin}[c x]\right)}{d^3 x \left(1-c^2 x^2\right)^{3/2}}+\frac{5 b c^3 x \left(a+b \text{ArcSin}[c x]\right)}{6 d^3 \left(1-c^2 x^2\right)^{3/2}}-$$

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

$$\frac{3 c^2 \left(a+b \text{ArcSin}[c x]\right)^2}{2 d^3 \left(1-c^2 x^2\right)}-\frac{6 c^2 \left(a+b \text{ArcSin}[c x]\right)^2 \text{ArcTanh}\left[e^{2 i \text{ArcSin}[c x]}\right]}{d^3}+\frac{b^2 c^2 \text{Log}[x]}{d^3}-$$

$$\frac{7 b^2 c^2 \text{Log}\left[1-c^2 x^2\right]}{6 d^3}+\frac{3 i b c^2 \left(a+b \text{ArcSin}[c x]\right) \text{PolyLog}\left[2,-e^{2 i \text{ArcSin}[c x]}\right]}{d^3}-$$

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

$$\frac{3 b^2 c^2 \text{PolyLog}\left[3,-e^{2 i \text{ArcSin}[c x]}\right]}{2 d^3}+\frac{3 b^2 c^2 \text{PolyLog}\left[3,e^{2 i \text{ArcSin}[c x]}\right]}{2 d^3}$$

Result (type 4, 989 leaves) :

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

$$\frac{3\,a^2\,c^2\,\text{Log}\left[1-c^2\,x^2\right]}{2\,d^3}-\frac{1}{d^3}2\,a\,b\,\left(\frac{c^2\,\left(\left(2-c\,x\right)\,\sqrt{1-c^2\,x^2}-3\,\text{ArcSin}[c\,x]\right)}{48\,\left(-1+c\,x\right)^2}-\right.$$

$$\frac{9\,c^2\,\left(\sqrt{1-c^2\,x^2}-\text{ArcSin}[c\,x]\right)}{16\,\left(-1+c\,x\right)}-\frac{9\,c^3\,\left(\sqrt{1-c^2\,x^2}+\text{ArcSin}[c\,x]\right)}{16\,\left(c+c^2\,x\right)}+$$

$$\frac{c\,x\,\sqrt{1-c^2\,x^2}+\text{ArcSin}[c\,x]}{2\,x^2}-\frac{c^2\,\left(\left(2+c\,x\right)\,\sqrt{1-c^2\,x^2}+3\,\text{ArcSin}[c\,x]\right)}{48\,\left(1+c\,x\right)^2}+\frac{3}{2}\,c^3$$

$$\left(\frac{3\,i\,\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\right.$$

$$\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]}{c}+$$

$$\left.\frac{\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)+$$

$$\frac{3}{2}\,c^3\,\left(\frac{i\,\pi\,\text{ArcSin}[c\,x]}{2\,c}-\frac{i\,\text{ArcSin}[c\,x]^2}{2\,c}+\frac{2\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]}{c}+\frac{\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}+\right.$$

$$\frac{2\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}-\frac{2\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]}{c}-$$

$$\left.\frac{\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]}{c}-\frac{2\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c}\right)-$$

$$\left.3\,c^2\,\left(\text{ArcSin}[c\,x]\,\text{Log}\left[1-e^{2\,i\,\text{ArcSin}[c\,x]}\right]-\frac{1}{2}\,i\,\left(\text{ArcSin}[c\,x]^2+\text{PolyLog}\left[2,\,e^{2\,i\,\text{ArcSin}[c\,x]}\right]\right)\right)\right)-$$

$$\frac{1}{d^3}\,b^2\,c^2\,\left(\frac{i\,\pi^3}{8}-\frac{1}{12\,\left(1-c^2\,x^2\right)}+\frac{c\,x\,\text{ArcSin}[c\,x]}{6\,\left(1-c^2\,x^2\right)^{3/2}}+\frac{7\,c\,x\,\text{ArcSin}[c\,x]}{3\,\sqrt{1-c^2\,x^2}}+\right.$$

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

$$2\,i\,\text{ArcSin}[c\,x]^3-3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1-e^{-2\,i\,\text{ArcSin}[c\,x]}\right]+$$

$$3\,\text{ArcSin}[c\,x]^2\,\text{Log}\left[1+e^{2\,i\,\text{ArcSin}[c\,x]}\right]-\text{Log}[c\,x]+\frac{7}{3}\,\text{Log}\left[\sqrt{1-c^2\,x^2}\right]-$$

$$3\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,e^{-2\,i\,\text{ArcSin}[c\,x]}\right]-3\,i\,\text{ArcSin}[c\,x]\,\text{PolyLog}\left[2,\,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]-$$

$$\left.\frac{3}{2}\,\text{PolyLog}\left[3,\,e^{-2\,i\,\text{ArcSin}[c\,x]}\right]+\frac{3}{2}\,\text{PolyLog}\left[3,\,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]\right)$$

Problem 209: Result more than twice size of optimal antiderivative.

$$\int \frac{(a + b \text{ArcSin}[c x])^2}{x^4 (d - c^2 d x^2)^3} \, dx$$

Optimal (type 4, 572 leaves, 43 steps):

$$-\frac{b^2 c^2}{2 d^3 x} + \frac{b^2 c^2}{6 d^3 x (1 - c^2 x^2)} - \frac{b^2 c^4 x}{12 d^3 (1 - c^2 x^2)} + \frac{b c^3 (a + b \text{ArcSin}[c x])}{6 d^3 (1 - c^2 x^2)^{3/2}} - \frac{b c (a + b \text{ArcSin}[c x])}{3 d^3 x^2 (1 - c^2 x^2)^{3/2}} - \frac{29 b c^3 (a + b \text{ArcSin}[c x])}{12 d^3 \sqrt{1 - c^2 x^2}} - \frac{(a + b \text{ArcSin}[c x])^2}{3 d^3 x^3 (1 - c^2 x^2)^2} - \frac{7 c^2 (a + b \text{ArcSin}[c x])^2}{3 d^3 x (1 - c^2 x^2)^2} + \frac{35 c^4 x (a + b \text{ArcSin}[c x])^2}{12 d^3 (1 - c^2 x^2)^2} + \frac{35 c^4 x (a + b \text{ArcSin}[c x])^2}{8 d^3 (1 - c^2 x^2)} - \frac{35 i c^3 (a + b \text{ArcSin}[c x])^2 \text{ArcTan}[e^{i \text{ArcSin}[c x]}]}{4 d^3} - \frac{38 b c^3 (a + b \text{ArcSin}[c x]) \text{ArcTanh}[e^{i \text{ArcSin}[c x]}]}{3 d^3} + \frac{17 b^2 c^3 \text{ArcTanh}[c x]}{6 d^3} + \frac{19 i b^2 c^3 \text{PolyLog}[2, -e^{i \text{ArcSin}[c x]}]}{3 d^3} + \frac{35 i b c^3 (a + b \text{ArcSin}[c x]) \text{PolyLog}[2, -i e^{i \text{ArcSin}[c x]}]}{4 d^3} - \frac{35 i b c^3 (a + b \text{ArcSin}[c x]) \text{PolyLog}[2, i e^{i \text{ArcSin}[c x]}]}{4 d^3} - \frac{19 i b^2 c^3 \text{PolyLog}[2, e^{i \text{ArcSin}[c x]}]}{3 d^3} - \frac{35 b^2 c^3 \text{PolyLog}[3, -i e^{i \text{ArcSin}[c x]}]}{4 d^3} + \frac{35 b^2 c^3 \text{PolyLog}[3, i e^{i \text{ArcSin}[c x]}]}{4 d^3}$$

Result (type 4, 1817 leaves):

$$-\frac{a^2}{3 d^3 x^3} - \frac{3 a^2 c^2}{d^3 x} + \frac{a^2 c^4 x}{4 d^3 (-1 + c^2 x^2)^2} - \frac{11 a^2 c^4 x}{8 d^3 (-1 + c^2 x^2)} - \frac{35 a^2 c^3 \text{Log}[1 - c x]}{16 d^3} + \frac{35 a^2 c^3 \text{Log}[1 + c x]}{16 d^3} - \frac{1}{d^3} 2 a b \left(\frac{c \sqrt{1 - c^2 x^2}}{6 x^2} + \frac{c^3 \left((2 - c x) \sqrt{1 - c^2 x^2} - 3 \text{ArcSin}[c x]\right)}{48 (-1 + c x)^2} - \frac{11 c^3 \left(\sqrt{1 - c^2 x^2} - \text{ArcSin}[c x]\right)}{16 (-1 + c x)} + \frac{\text{ArcSin}[c x]}{3 x^3} + \frac{11 c^4 \left(\sqrt{1 - c^2 x^2} + \text{ArcSin}[c x]\right)}{16 (c + c^2 x)} + \frac{c^3 \left((2 + c x) \sqrt{1 - c^2 x^2} + 3 \text{ArcSin}[c x]\right)}{48 (1 + c x)^2} - \frac{1}{6} c^3 \text{Log}[x] + \frac{1}{6} c^3 \text{Log}\left[1 + \sqrt{1 - c^2 x^2}\right] - 3 c^2 \left(-\frac{\text{ArcSin}[c x]}{x} + c \text{Log}[x] - c \text{Log}\left[1 + \sqrt{1 - c^2 x^2}\right]\right) + \frac{35}{16} c^4 \left(\frac{3 i \pi \text{ArcSin}[c x]}{2 c} - \frac{i \text{ArcSin}[c x]^2}{2 c} + \frac{2 \pi \text{Log}[1 + e^{-i \text{ArcSin}[c x]}]}{c} - \frac{\pi \text{Log}[1 + i e^{i \text{ArcSin}[c x]}]}{c} + \frac{2 \text{ArcSin}[c x] \text{Log}[1 + i e^{i \text{ArcSin}[c x]}]}{c} - \frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c} + \right.$$

$$\frac{\pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2 \text{ArcSin}[c x]\right)\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]}{c}\Bigg)-\frac{35}{16} c^4$$

$$\left(\frac{i \pi \text{ArcSin}[c x]}{2 c}-\frac{i \text{ArcSin}[c x]^2}{2 c}+\frac{2 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]}{c}+\frac{\pi \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}+\right.$$

$$\frac{2 \text{ArcSin}[c x] \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]}{c}-\frac{2 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]}{c}-$$

$$\left.\left.\frac{\pi \text{Log}\left[\text{Sin}\left[\frac{1}{4}\left(\pi+2 \text{ArcSin}[c x]\right)\right]\right]}{c}-\frac{2 i \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]}{c}\right)\right)-$$

$$\frac{1}{d^3} b^2 c^3 \left(-\frac{35}{24} \text{ArcSin}[c x]^3-\frac{1}{12}\left(-2 \text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-19 \text{ArcSin}[c x]^2 \text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)\right.$$

$$\text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\frac{1}{12} \text{ArcSin}[c x] \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2+$$

$$\frac{1}{24} \text{ArcSin}[c x]^2 \text{Cot}\left[\frac{1}{2} \text{ArcSin}[c x]\right] \text{Csc}\left[\frac{1}{2} \text{ArcSin}[c x]\right]^2-$$

$$\frac{38}{3}\left(\frac{1}{8} i \text{ArcSin}[c x]^2-\frac{1}{2} \text{ArcSin}[c x] \text{Log}\left[1+e^{i \text{ArcSin}[c x]}\right]+\frac{1}{2} i \text{PolyLog}\left[2,-e^{i \text{ArcSin}[c x]}\right]\right)-$$

$$\frac{38}{3}\left(\frac{1}{2} \text{ArcSin}[c x] \text{Log}\left[1-e^{i \text{ArcSin}[c x]}\right]-\frac{1}{2} i\left(\frac{1}{4} \text{ArcSin}[c x]^2+\text{PolyLog}\left[2, e^{i \text{ArcSin}[c x]}\right]\right)\right)+$$

$$\frac{1}{24}\left(68 \text{ArcSin}[c x]+35 \text{ArcSin}[c x]^3-105 \text{ArcSin}[c x]^2 \text{Log}\left[1-i e^{i \text{ArcSin}[c x]}\right]+\right.$$

$$105 \text{ArcSin}[c x]^2 \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]-105 \pi \text{ArcSin}[c x] \text{Log}\left[\left(-\frac{1}{2}-\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\right.$$

$$\left.\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]+105 \text{ArcSin}[c x]^2 \text{Log}\left[\left(\frac{1}{2}+\frac{i}{2}\right) e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left(-i+e^{i \text{ArcSin}[c x]}\right)\right]-$$

$$105 \pi \text{ArcSin}[c x] \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]-$$

$$105 \text{ArcSin}[c x]^2 \text{Log}\left[\frac{1}{2} e^{-\frac{1}{2} i \text{ArcSin}[c x]}\left((1+i)+(1-i) e^{i \text{ArcSin}[c x]}\right)\right]+$$

$$68 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$

$$105 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$

$$105 \pi \text{ArcSin}[c x] \text{Log}\left[-\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-$$

$$68 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$

$$105 \pi \text{ArcSin}[c x] \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$

$$105 \text{ArcSin}[c x]^2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-210 i \text{ArcSin}[c x]$$

$$\text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+210 i \text{ArcSin}[c x] \text{PolyLog}\left[2, i e^{i \text{ArcSin}[c x]}\right]+$$

$$210\,\text{PolyLog}\left[3,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-210\,\text{PolyLog}\left[3,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Big)-$$

$$\frac{1}{12}\text{ArcSin}[c\,x]\,\text{Sec}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]^2-\frac{\text{ArcSin}[c\,x]^2}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4}-$$

$$\frac{2-2\,\text{ArcSin}[c\,x]+33\,\text{ArcSin}[c\,x]^2}{48\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2}+$$

$$\frac{\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{12\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3}+$$

$$\frac{17\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{6\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)}+$$

$$\frac{\text{ArcSin}[c\,x]^2}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4}-$$

$$\frac{\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{12\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3}-$$

$$\frac{-2-2\,\text{ArcSin}[c\,x]-33\,\text{ArcSin}[c\,x]^2}{48\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2}-$$

$$\frac{17\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{6\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)}-$$

$$\frac{1}{12}\text{Sec}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-19\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)+$$

$$\left.\frac{1}{24}\text{ArcSin}[c\,x]^2\,\text{Sec}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]^2\text{Tan}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)$$

Problem 292: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{ArcSin}[a\,x]^3}{c-a^2\,c\,x^2}\,dx$$

Optimal (type 4, 200 leaves, 10 steps):

$$-\frac{2\,i\,\text{ArcSin}[a\,x]^3\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}+\frac{3\,i\,\text{ArcSin}[a\,x]^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}-\frac{3\,i\,\text{ArcSin}[a\,x]^2\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}-\frac{6\,\text{ArcSin}[a\,x]\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}+\frac{6\,\text{ArcSin}[a\,x]\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}-\frac{6\,i\,\text{PolyLog}\left[4,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}+\frac{6\,i\,\text{PolyLog}\left[4,i\,e^{i\,\text{ArcSin}[a\,x]}\right]}{a\,c}$$

Result (type 4, 556 leaves):

$$-\frac{1}{a\,c}\left(\frac{7\,i\,\pi^4}{64}+\frac{1}{8}\,i\,\pi^3\,\text{ArcSin}[a\,x]-\frac{3}{8}\,i\,\pi^2\,\text{ArcSin}[a\,x]^2+\frac{1}{2}\,i\,\pi\,\text{ArcSin}[a\,x]^3-\frac{1}{4}\,i\,\text{ArcSin}[a\,x]^4-\frac{3}{4}\,\pi^2\,\text{ArcSin}[a\,x]\,\text{Log}\left[1-i\,e^{-i\,\text{ArcSin}[a\,x]}\right]+\frac{3}{2}\,\pi\,\text{ArcSin}[a\,x]^2\,\text{Log}\left[1-i\,e^{-i\,\text{ArcSin}[a\,x]}\right]+\frac{1}{8}\,\pi^3\,\text{Log}\left[1+i\,e^{-i\,\text{ArcSin}[a\,x]}\right]-\text{ArcSin}[a\,x]^3\,\text{Log}\left[1+i\,e^{-i\,\text{ArcSin}[a\,x]}\right]-\frac{1}{8}\,\pi^3\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a\,x]}\right]+\frac{3}{4}\,\pi^2\,\text{ArcSin}[a\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a\,x]}\right]-\frac{3}{2}\,\pi\,\text{ArcSin}[a\,x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a\,x]}\right]+\text{ArcSin}[a\,x]^3\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a\,x]}\right]-\frac{1}{8}\,\pi^3\,\text{Log}\left[\text{Tan}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[a\,x]\right)\right]\right]-3\,i\,\text{ArcSin}[a\,x]^2\,\text{PolyLog}\left[2,-i\,e^{-i\,\text{ArcSin}[a\,x]}\right]-\frac{3}{4}\,i\,\pi\left(\pi-4\,\text{ArcSin}[a\,x]\right)\,\text{PolyLog}\left[2,i\,e^{-i\,\text{ArcSin}[a\,x]}\right]-\frac{3}{4}\,i\,\pi^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]+3\,i\,\pi\,\text{ArcSin}[a\,x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]-3\,i\,\text{ArcSin}[a\,x]^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]-6\,\text{ArcSin}[a\,x]\,\text{PolyLog}\left[3,-i\,e^{-i\,\text{ArcSin}[a\,x]}\right]+3\,\pi\,\text{PolyLog}\left[3,i\,e^{-i\,\text{ArcSin}[a\,x]}\right]-3\,\pi\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]+6\,\text{ArcSin}[a\,x]\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]+6\,i\,\text{PolyLog}\left[4,-i\,e^{-i\,\text{ArcSin}[a\,x]}\right]+6\,i\,\text{PolyLog}\left[4,-i\,e^{i\,\text{ArcSin}[a\,x]}\right]\right)$$

Problem 293: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{ArcSin}[a\,x]^3}{\left(c-a^2\,c\,x^2\right)^2}\,dx$$

Optimal (type 4, 337 leaves, 18 steps):

$$-\frac{3\,\text{ArcSin}[a x]^2}{2 a c^2 \sqrt{1-a^2 x^2}}+\frac{x\,\text{ArcSin}[a x]^3}{2 c^2\left(1-a^2 x^2\right)}-\frac{6\,i\,\text{ArcSin}[a x]\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}-\frac{i\,\text{ArcSin}[a x]^3\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}+\frac{3\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}+\frac{3\,i\,\text{ArcSin}[a x]^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]}{2 a c^2}-\frac{3\,i\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}-\frac{3\,i\,\text{ArcSin}[a x]^2\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[a x]}\right]}{2 a c^2}-\frac{3\,\text{ArcSin}[a x]\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}+\frac{3\,\text{ArcSin}[a x]\,\text{PolyLog}\left[3,i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}-\frac{3\,i\,\text{PolyLog}\left[4,-i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}+\frac{3\,i\,\text{PolyLog}\left[4,i\,e^{i\,\text{ArcSin}[a x]}\right]}{a c^2}$$

Result (type 4, 747 leaves):

$$\frac{1}{128 a c^2}\Bigg(-7\,i\,\pi^4-8\,i\,\pi^3\,\text{ArcSin}[a x]-192\,\text{ArcSin}[a x]^2+24\,i\,\pi^2\,\text{ArcSin}[a x]^2-32\,i\,\pi\,\text{ArcSin}[a x]^3-\frac{32\,\text{ArcSin}[a x]^3}{-1+a x}+16\,i\,\text{ArcSin}[a x]^4+48\,\pi^2\,\text{ArcSin}[a x]\,\text{Log}\left[1-i\,e^{-i\,\text{ArcSin}[a x]}\right]-96\,\pi\,\text{ArcSin}[a x]^2\,\text{Log}\left[1-i\,e^{-i\,\text{ArcSin}[a x]}\right]-8\,\pi^3\,\text{Log}\left[1+i\,e^{-i\,\text{ArcSin}[a x]}\right]+64\,\text{ArcSin}[a x]^3\,\text{Log}\left[1+i\,e^{-i\,\text{ArcSin}[a x]}\right]+384\,\text{ArcSin}[a x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[a x]}\right]+8\,\pi^3\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a x]}\right]-384\,\text{ArcSin}[a x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a x]}\right]-48\,\pi^2\,\text{ArcSin}[a x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a x]}\right]+96\,\pi\,\text{ArcSin}[a x]^2\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a x]}\right]-64\,\text{ArcSin}[a x]^3\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[a x]}\right]+8\,\pi^3\,\text{Log}\left[\text{Tan}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[a x]\right)\right]\right]+192\,i\,\text{ArcSin}[a x]^2\,\text{PolyLog}\left[2,-i\,e^{-i\,\text{ArcSin}[a x]}\right]+48\,i\,\pi\left(\pi-4\,\text{ArcSin}[a x]\right)\text{PolyLog}\left[2,i\,e^{-i\,\text{ArcSin}[a x]}\right]+384\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]+48\,i\,\pi^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]-192\,i\,\pi\,\text{ArcSin}[a x]\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]+192\,i\,\text{ArcSin}[a x]^2\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[a x]}\right]-384\,i\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[a x]}\right]+384\,\text{ArcSin}[a x]\,\text{PolyLog}\left[3,-i\,e^{-i\,\text{ArcSin}[a x]}\right]-192\,\pi\,\text{PolyLog}\left[3,i\,e^{-i\,\text{ArcSin}[a x]}\right]+192\,\pi\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a x]}\right]-384\,\text{ArcSin}[a x]\,\text{PolyLog}\left[3,-i\,e^{i\,\text{ArcSin}[a x]}\right]-384\,i\,\text{PolyLog}\left[4,-i\,e^{-i\,\text{ArcSin}[a x]}\right]-384\,i\,\text{PolyLog}\left[4,-i\,e^{i\,\text{ArcSin}[a x]}\right]-\frac{192\,\text{ArcSin}[a x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a x]\right]}-\frac{32\,\text{ArcSin}[a x]^3}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a x]\right]\right)^2}+\frac{192\,\text{ArcSin}[a x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a x]\right]}\Bigg)$$

Problem 294: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{ArcSin}[a x]^3}{\left(c-a^2 c x^2\right)^3}\,dx$$

Optimal (type 4, 455 leaves, 28 steps):

$$-\frac{1}{4 a c^3 \sqrt{1-a^2 x^2}}+\frac{x \operatorname{ArcSin}[a x]}{4 c^3 \left(1-a^2 x^2\right)}-\frac{\operatorname{ArcSin}[a x]^2}{4 a c^3 \left(1-a^2 x^2\right)^{3/2}}-\frac{9 \operatorname{ArcSin}[a x]^2}{8 a c^3 \sqrt{1-a^2 x^2}}+\frac{x \operatorname{ArcSin}[a x]^3}{4 c^3 \left(1-a^2 x^2\right)^2}+\frac{3 x \operatorname{ArcSin}[a x]^3}{8 c^3 \left(1-a^2 x^2\right)}-\frac{5 i \operatorname{ArcSin}[a x] \operatorname{ArcTan}\left[e^{i \operatorname{ArcSin}[a x]}\right]}{a c^3}-\frac{3 i \operatorname{ArcSin}[a x]^3 \operatorname{ArcTan}\left[e^{i \operatorname{ArcSin}[a x]}\right]}{4 a c^3}+\frac{5 i \operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[a x]}\right]}{2 a c^3}+\frac{9 i \operatorname{ArcSin}[a x]^2 \operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[a x]}\right]}{8 a c^3}-\frac{5 i \operatorname{PolyLog}\left[2,i e^{i \operatorname{ArcSin}[a x]}\right]}{2 a c^3}-\frac{9 i \operatorname{ArcSin}[a x]^2 \operatorname{PolyLog}\left[2,i e^{i \operatorname{ArcSin}[a x]}\right]}{8 a c^3}-\frac{9 \operatorname{ArcSin}[a x] \operatorname{PolyLog}\left[3,-i e^{i \operatorname{ArcSin}[a x]}\right]}{4 a c^3}+\frac{9 \operatorname{ArcSin}[a x] \operatorname{PolyLog}\left[3,i e^{i \operatorname{ArcSin}[a x]}\right]}{4 a c^3}-\frac{9 i \operatorname{PolyLog}\left[4,-i e^{i \operatorname{ArcSin}[a x]}\right]}{4 a c^3}+\frac{9 i \operatorname{PolyLog}\left[4,i e^{i \operatorname{ArcSin}[a x]}\right]}{4 a c^3}$$

Result (type 4, 1544 leaves):

$$-\frac{1}{a c^3}\left(\frac{1}{4}\left(1+5 \operatorname{ArcSin}[a x]^2\right)-\frac{5}{2}\left(\operatorname{ArcSin}[a x]\left(\operatorname{Log}\left[1-i e^{i \operatorname{ArcSin}[a x]}\right]-\operatorname{Log}\left[1+i e^{i \operatorname{ArcSin}[a x]}\right]\right)+\right.\right.$$
$$\left.i\left(\operatorname{PolyLog}\left[2,-i e^{i \operatorname{ArcSin}[a x]}\right]-\operatorname{PolyLog}\left[2,i e^{i \operatorname{ArcSin}[a x]}\right]\right)\right)-$$
$$\frac{3}{8}\left(\frac{1}{8} \pi^3 \operatorname{Log}\left[\operatorname{Cot}\left[\frac{1}{2}\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)\right]\right]+\right.$$
$$\frac{3}{4} \pi^2\left(\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)\left(\operatorname{Log}\left[1-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]-\operatorname{Log}\left[1+e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]\right)+\right.$$
$$\left.i\left(\operatorname{PolyLog}\left[2,-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]-\operatorname{PolyLog}\left[2,e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]\right)\right)-$$
$$\frac{3}{2} \pi\left(\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)^2\left(\operatorname{Log}\left[1-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]-\operatorname{Log}\left[1+e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]\right)+\right.$$
$$2 i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)\left(\operatorname{PolyLog}\left[2,-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]-\operatorname{PolyLog}\left[2,e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]\right)+$$
$$\left.2\left(-\operatorname{PolyLog}\left[3,-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]+\operatorname{PolyLog}\left[3,e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]\right)\right)+$$
$$8\left(\frac{1}{64} i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)^4+\frac{1}{4} i\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)^4-\right.$$
$$\frac{1}{8}\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)^3 \operatorname{Log}\left[1+e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]-$$
$$\frac{1}{8} \pi^3\left(i\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)-\operatorname{Log}\left[1+e^{2 i\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)}\right]\right)-$$
$$\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)^3 \operatorname{Log}\left[1+e^{2 i\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)}\right]+$$
$$\frac{3}{8} i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)^2 \operatorname{PolyLog}\left[2,-e^{i\left(\frac{\pi}{2}-\operatorname{ArcSin}[a x]\right)}\right]+$$
$$\frac{3}{4} \pi^2\left(\frac{1}{2} i\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)^2-\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\operatorname{ArcSin}[a x]\right)\right)\right.$$

$$\text{Log}\left[1+\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]+\frac{1}{2}\,\mathrm{i}\,\text{PolyLog}\left[2,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]\Bigg)+$$

$$\frac{3}{2}\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)^2\text{PolyLog}\left[2,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]-$$

$$\frac{3}{4}\left(\frac{\pi}{2}-\text{ArcSin}[a\,x]\right)\text{PolyLog}\left[3,-\mathrm{e}^{\mathrm{i}\left(\frac{\pi}{2}-\text{ArcSin}[a\,x]\right)}\right]-$$

$$\frac{3}{2}\,\pi\left(\frac{1}{3}\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)^3-\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)^2\right.$$

$$\text{Log}\left[1+\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]+\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)$$

$$\left.\text{PolyLog}\left[2,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]-\frac{1}{2}\,\text{PolyLog}\left[3,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]\right)-$$

$$\frac{3}{2}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)\text{PolyLog}\left[3,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]-$$

$$\frac{3}{4}\,\mathrm{i}\,\text{PolyLog}\left[4,-\mathrm{e}^{\mathrm{i}\left(\frac{\pi}{2}-\text{ArcSin}[a\,x]\right)}\right]-\frac{3}{4}\,\mathrm{i}\,\text{PolyLog}\left[4,-\mathrm{e}^{2\,\mathrm{i}\left(\frac{\pi}{2}+\frac{1}{2}\left(-\frac{\pi}{2}+\text{ArcSin}[a\,x]\right)\right)}\right]\Bigg)\Bigg)-$$

$$\frac{\text{ArcSin}[a\,x]^3}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^4}-$$

$$\frac{2\,\text{ArcSin}[a\,x]-\text{ArcSin}[a\,x]^2+3\,\text{ArcSin}[a\,x]^3}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^2}+$$

$$\frac{\text{ArcSin}[a\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]}{8\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^3}+$$

$$\frac{\text{ArcSin}[a\,x]^3}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^4}-$$

$$\frac{\text{ArcSin}[a\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]}{8\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^3}-$$

$$\frac{-2\,\text{ArcSin}[a\,x]-\text{ArcSin}[a\,x]^2-3\,\text{ArcSin}[a\,x]^3}{16\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)^2}-$$

$$\frac{-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]-5\,\text{ArcSin}[a\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]}{4\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)}-$$

$$\left.\frac{\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]+5\,\text{ArcSin}[a\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]}{4\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[a\,x]\right]\right)}\right)$$

Problem 419: Attempted integration timed out after 120 seconds.

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

Optimal (type 8, 29 leaves, 0 steps):

$$\text{Int}\left[\frac{x}{\left(1-c^2 x^2\right)^{3/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2},\, x\right]$$

Result (type 1, 1 leaves):

???

Problem 424: Attempted integration timed out after 120 seconds.

$$\int \frac{x^3}{\left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2} \, dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{x^3}{\left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2},\, x\right]$$

Result (type 1, 1 leaves):

???

Problem 426: Attempted integration timed out after 120 seconds.

$$\int \frac{x}{\left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2} \, dx$$

Optimal (type 8, 29 leaves, 0 steps):

$$\text{Int}\left[\frac{x}{\left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2},\, x\right]$$

Result (type 1, 1 leaves):

???

Problem 428: Attempted integration timed out after 120 seconds.

$$\int \frac{1}{x \left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2} \, dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{1}{x \left(1-c^2 x^2\right)^{5/2} \left(a+b \,\text{ArcSin}[c\, x]\right)^2},\, x\right]$$

Result (type 1, 1 leaves):

???

Problem 441: Unable to integrate problem.

$$\int \left(-\frac{3\,x}{8\,\left(1-x^2\right)\,\sqrt{\text{ArcSin}[x]}}+\frac{x\,\text{ArcSin}[x]^{3/2}}{\left(1-x^2\right)^2}\right)dx$$

Optimal (type 3, 42 leaves, 3 steps):

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

Result (type 8, 40 leaves):

$$\int \left(-\frac{3\,x}{8\,\left(1-x^2\right)\,\sqrt{\text{ArcSin}[x]}}+\frac{x\,\text{ArcSin}[x]^{3/2}}{\left(1-x^2\right)^2}\right)dx$$

Problem 515: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(f-c\,f\,x\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{\left(d+c\,d\,x\right)^{5/2}}\,dx$$

Optimal (type 3, 324 leaves, 9 steps):

$$-\frac{4\,b\,f^4\,\left(1-c^2\,x^2\right)^{5/2}}{3\,c\,\left(1+c\,x\right)\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}-\frac{b\,f^4\,\left(1-c^2\,x^2\right)^{5/2}\,\text{ArcSin}[c\,x]^2}{2\,c\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}-$$
$$\frac{2\,f^4\,\left(1-c\,x\right)^3\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{3\,c\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}+\frac{2\,f^4\,\left(1-c\,x\right)\,\left(1-c^2\,x^2\right)^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{c\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}+$$
$$\frac{f^4\,\left(1-c^2\,x^2\right)^{5/2}\,\text{ArcSin}[c\,x]\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{c\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}-\frac{8\,b\,f^4\,\left(1-c^2\,x^2\right)^{5/2}\,\text{Log}[1+c\,x]}{3\,c\,\left(d+c\,d\,x\right)^{5/2}\,\left(f-c\,f\,x\right)^{5/2}}$$

Result (type 3, 736 leaves):

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

$$\left(b f \sqrt{d+c d x}\sqrt{f-c f x}\sqrt{-d f(1-c^2 x^2)}\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\left(-8+6\,\text{ArcSin}[c x]+9\,\text{ArcSin}[c x]^2-84\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)+\text{Cos}\left[\tfrac{3}{2}\text{ArcSin}[c x]\right]\left((14-3\,\text{ArcSin}[c x])\,\text{ArcSin}[c x]+28\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)+2\left(-4+4\,\text{ArcSin}[c x]+6\,\text{ArcSin}[c x]^2+\sqrt{1-c^2 x^2}\left(\text{ArcSin}[c x](14+3\,\text{ArcSin}[c x])-28\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)-56\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)\right)\Big/\left(12 c d^3(-1+c x)\sqrt{-(d+c d x)(f-c f x)}\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)^4\right)-$$

$$\left(b f \sqrt{d+c d x}\sqrt{f-c f x}\sqrt{-d f(1-c^2 x^2)}\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)\left(\text{Cos}\left[\tfrac{3}{2}\text{ArcSin}[c x]\right]\left(\text{ArcSin}[c x]+2\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)-\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\left(4+3\,\text{ArcSin}[c x]+6\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)+2\left(-2+2\,\text{ArcSin}[c x]+\sqrt{1-c^2 x^2}\,\text{ArcSin}[c x]-4\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]-2\sqrt{1-c^2 x^2}\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)\right)\Big/\left(6 c d^3(-1+c x)\sqrt{-(d+c d x)(f-c f x)}\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)^4\right)$$

Problem 521: Result more than twice size of optimal antiderivative.

$$\int \frac{(f-c f x)^{5/2}(a+b\,\text{ArcSin}[c x])}{(d+c d x)^{5/2}}\,dx$$

Optimal (type 3, 420 leaves, 10 steps) :

$$-\frac{b f^5 x \left(1-c^2 x^2\right)^{5/2}}{(d+c d x)^{5/2} (f-c f x)^{5/2}}-\frac{8 b f^5 \left(1-c^2 x^2\right)^{5/2}}{3 c (1+c x) (d+c d x)^{5/2} (f-c f x)^{5/2}}-\frac{5 b f^5 \left(1-c^2 x^2\right)^{5/2} \text{ArcSin}[c x]^2}{2 c (d+c d x)^{5/2} (f-c f x)^{5/2}}-\frac{2 f^5 (1-c x)^4 \left(1-c^2 x^2\right) (a+b \text{ArcSin}[c x])}{3 c (d+c d x)^{5/2} (f-c f x)^{5/2}}+\frac{10 f^5 (1-c x)^2 \left(1-c^2 x^2\right)^2 (a+b \text{ArcSin}[c x])}{3 c (d+c d x)^{5/2} (f-c f x)^{5/2}}+\frac{5 f^5 \left(1-c^2 x^2\right)^3 (a+b \text{ArcSin}[c x])}{c (d+c d x)^{5/2} (f-c f x)^{5/2}}+\frac{5 f^5 \left(1-c^2 x^2\right)^{5/2} \text{ArcSin}[c x] (a+b \text{ArcSin}[c x])}{c (d+c d x)^{5/2} (f-c f x)^{5/2}}-\frac{28 b f^5 \left(1-c^2 x^2\right)^{5/2} \text{Log}[1+c x]}{3 c (d+c d x)^{5/2} (f-c f x)^{5/2}}$$

Result (type 3, 1170 leaves):

$$\frac{\sqrt{-f (-1+c x)} \sqrt{d (1+c x)} \left(\frac{a f^2}{d^3}-\frac{8 a f^2}{3 d^3 (1+c x)^2}+\frac{28 a f^2}{3 d^3 (1+c x)}\right)}{c}-\frac{5 a f^{5/2} \text{ArcTan}\left[\frac{c x \sqrt{-f (-1+c x)} \sqrt{d (1+c x)}}{\sqrt{d} \sqrt{f} (-1+c x) (1+c x)}\right]}{c d^{5/2}}-$$

$$\Big(b f^2 \sqrt{d+c d x} \sqrt{f-c f x} \sqrt{-d f \left(1-c^2 x^2\right)} \left(\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right) \Big(\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right] \Big(-8+6 \text{ArcSin}[c x]+9 \text{ArcSin}[c x]^2- 84 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big)+\text{Cos}\left[\tfrac{3}{2} \text{ArcSin}[c x]\right] \Big((14-3 \text{ArcSin}[c x]) \text{ArcSin}[c x]+28 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big)+ 2 \Big(-4+4 \text{ArcSin}[c x]+6 \text{ArcSin}[c x]^2+\sqrt{1-c^2 x^2} \Big(\text{ArcSin}[c x] (14+3 \text{ArcSin}[c x])- 28 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big)- 56 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big) \text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\Big)\Big)\Big/$$

$$\left(6 c d^3 (-1+c x) \sqrt{-(d+c d x) (f-c f x)} \left(\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right)^4\right)-$$

$$\Big(b f^2 \sqrt{d+c d x} \sqrt{f-c f x} \sqrt{-d f \left(1-c^2 x^2\right)} \left(\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right) \Big(\text{Cos}\left[\tfrac{3}{2} \text{ArcSin}[c x]\right] \Big(\text{ArcSin}[c x]+2 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big)- \text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right] \Big(4+3 \text{ArcSin}[c x]+6 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big)+ 2 \Big(-2+2 \text{ArcSin}[c x]+\sqrt{1-c^2 x^2} \text{ArcSin}[c x]- 4 \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]- 2 \sqrt{1-c^2 x^2} \text{Log}\left[\text{Cos}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\right]\Big) \text{Sin}\left[\tfrac{1}{2} \text{ArcSin}[c x]\right]\Big)\Big)\Big/$$

$$\left(6\,c\,d^3\,(-1+c\,x)\,\sqrt{-(d+c\,d\,x)\,(f-c\,f\,x)}\,\left(\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^4\right)-$$

$$\left(b\,f^2\,\sqrt{d+c\,d\,x}\,\sqrt{f-c\,f\,x}\,\sqrt{-d\,f\,(1-c^2\,x^2)}\right.$$
$$\left(\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)$$
$$\left(3\,\text{Cos}\left[\tfrac{5}{2}\,\text{ArcSin}[c\,x]\right]-3\,\text{ArcSin}[c\,x]\,\text{Cos}\left[\tfrac{5}{2}\,\text{ArcSin}[c\,x]\right]+\right.$$
$$\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\,\left(-20+24\,\text{ArcSin}[c\,x]+27\,\text{ArcSin}[c\,x]^2-\right.$$
$$\left.156\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)+\text{Cos}\left[\tfrac{3}{2}\,\text{ArcSin}[c\,x]\right]$$
$$\left(9+35\,\text{ArcSin}[c\,x]-9\,\text{ArcSin}[c\,x]^2+52\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)-$$
$$20\,\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]-24\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+$$
$$27\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]-156\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]$$
$$\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]-9\,\text{Sin}\left[\tfrac{3}{2}\,\text{ArcSin}[c\,x]\right]+35\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\tfrac{3}{2}\,\text{ArcSin}[c\,x]\right]+$$
$$9\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\tfrac{3}{2}\,\text{ArcSin}[c\,x]\right]-52\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]$$
$$\left.\left.\text{Sin}\left[\tfrac{3}{2}\,\text{ArcSin}[c\,x]\right]+3\,\text{Sin}\left[\tfrac{5}{2}\,\text{ArcSin}[c\,x]\right]+3\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\tfrac{5}{2}\,\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$
$$\left(12\,c\,d^3\,(-1+c\,x)\,\sqrt{-(d+c\,d\,x)\,(f-c\,f\,x)}\,\left(\text{Cos}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\tfrac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^4\right)$$

Problem 529: Result more than twice size of optimal antiderivative.

$$\int \frac{(d+c\,d\,x)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])}{(f-c\,f\,x)^{3/2}}\,dx$$

Optimal (type 3, 252 leaves, 10 steps):

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

Result (type 3, 514 leaves):

$$\frac{1}{2\,c\,f^2}\,d\,\Bigg(\frac{2\,a\,(-5+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{f-c\,f\,x}}{-1+c\,x}+6\,a\,\sqrt{d}\,\sqrt{f}\,\text{ArcTan}\Big[\frac{c\,x\,\sqrt{d+c\,d\,x}\,\sqrt{f-c\,f\,x}}{\sqrt{d}\,\sqrt{f}\,(-1+c^2\,x^2)}\Big]-$$

$$\Bigg(b\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{f-c\,f\,x}\,\Bigg(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]$$

$$\Big((-4+\text{ArcSin}[c\,x])\,\text{ArcSin}[c\,x]-8\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]\Big)-$$

$$\Big(\text{ArcSin}[c\,x]\,(4+\text{ArcSin}[c\,x])-8\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]\Big)$$

$$\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Bigg)\Bigg)\Big/\Bigg(\sqrt{1-c^2\,x^2}\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)$$

$$\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)^2\Bigg)-$$

$$\Bigg(2\,b\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{f-c\,f\,x}\,\Bigg(\text{ArcSin}[c\,x]^2\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)+$$

$$\Big(c\,x-4\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]\Big)$$

$$\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)-\text{ArcSin}[c\,x]$$

$$\Big(\Big(2+\sqrt{1-c^2\,x^2}\Big)\,\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\Big(-2+\sqrt{1-c^2\,x^2}\Big)\,\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)\Bigg)\Bigg)\Big/$$

$$\Bigg(\sqrt{1-c^2\,x^2}\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)$$

$$\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)^2\Bigg)\Bigg)$$

Problem 534: Result more than twice size of optimal antiderivative.

$$\int\frac{(d+c\,d\,x)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])}{(f-c\,f\,x)^{5/2}}\,dx$$

Optimal (type 3, 419 leaves, 10 steps):

$$\frac{b\,d^5\,x\,(1-c^2\,x^2)^{5/2}}{(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}-\frac{8\,b\,d^5\,(1-c^2\,x^2)^{5/2}}{3\,c\,(1-c\,x)\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}-$$

$$\frac{5\,b\,d^5\,(1-c^2\,x^2)^{5/2}\,\text{ArcSin}[c\,x]^2}{2\,c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}+\frac{2\,d^5\,(1+c\,x)^4\,(1-c^2\,x^2)\,(a+b\,\text{ArcSin}[c\,x])}{3\,c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}-$$

$$\frac{10\,d^5\,(1+c\,x)^2\,(1-c^2\,x^2)^2\,(a+b\,\text{ArcSin}[c\,x])}{3\,c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}-\frac{5\,d^5\,(1-c^2\,x^2)^3\,(a+b\,\text{ArcSin}[c\,x])}{c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}+$$

$$\frac{5\,d^5\,(1-c^2\,x^2)^{5/2}\,\text{ArcSin}[c\,x]\,(a+b\,\text{ArcSin}[c\,x])}{c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}-\frac{28\,b\,d^5\,(1-c^2\,x^2)^{5/2}\,\text{Log}[1-c\,x]}{3\,c\,(d+c\,d\,x)^{5/2}\,(f-c\,f\,x)^{5/2}}$$

Result (type 3, 1181 leaves):

$$\frac{\sqrt{-f\,(-1+c\,x)}\;\sqrt{d\,(1+c\,x)}\;\left(-\frac{a\,d^2}{f^3}+\frac{8\,a\,d^2}{3\,f^3\,(-1+c\,x)^2}+\frac{28\,a\,d^2}{3\,f^3\,(-1+c\,x)}\right)}{c}-$$

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

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-4+3\,\text{ArcSin}[c\,x]-6\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)-\right.$$

$$\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]\left(\text{ArcSin}[c\,x]-2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(2+2\,\text{ArcSin}[c\,x]+\sqrt{1-c^2\,x^2}\;\text{ArcSin}[c\,x]+$$

$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$\left.2\,\sqrt{1-c^2\,x^2}\;\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)\Bigg/$$

$$\Bigg(6\,c\,f^3\,\sqrt{-(d+c\,d\,x)\,(f-c\,f\,x)}\;\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(b\,d^2\,\sqrt{d+c\,d\,x}\;\sqrt{f-c\,f\,x}\;\sqrt{-d\,f\,\left(1-c^2\,x^2\right)}$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-8-6\,\text{ArcSin}[c\,x]+9\,\text{ArcSin}[c\,x]^2-\right.\right.$$

$$\left.84\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]$$

$$\left(-\text{ArcSin}[c\,x]\,(14+3\,\text{ArcSin}[c\,x])+28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(4+4\,\text{ArcSin}[c\,x]-6\,\text{ArcSin}[c\,x]^2+56\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$\sqrt{1-c^2\,x^2}\;\Bigg((14-3\,\text{ArcSin}[c\,x])\,\text{ArcSin}[c\,x]+$$

$$\left.28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)\Bigg)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)\Bigg/$$

$$\Bigg(6\,c\,f^3\,\sqrt{-(d+c\,d\,x)\,(f-c\,f\,x)}\;\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(b\,d^2\,\sqrt{d+c\,d\,x}\;\sqrt{f-c\,f\,x}\;\sqrt{-d\,f\,\left(1-c^2\,x^2\right)}$$

$$\left(3\,\text{Cos}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+3\,\text{ArcSin}[c\,x]\,\text{Cos}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+\right.$$

$$\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-20-24\,\text{ArcSin}[c\,x]+27\,\text{ArcSin}[c\,x]^2-\right.$$

$$\left.156\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]$$

$$\left(9-35\,\text{ArcSin}[c\,x]-9\,\text{ArcSin}[c\,x]^2+52\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$
$$20\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-24\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-$$
$$27\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+156\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]$$
$$\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+9\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]+$$
$$35\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-9\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]+$$
$$52\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-$$
$$3\,\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+3\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]\Big)\Big)\Big/$$
$$\left(12\,c\,f^3\,\sqrt{-(d+c\,d\,x)\,(f-c\,f\,x)}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4\right.$$
$$\left.\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)$$

Problem 551: Result more than twice size of optimal antiderivative.

$$\int \frac{(e-c\,e\,x)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{(d+c\,d\,x)^{5/2}}\,dx$$

Optimal (type 4, 544 leaves, 21 steps):

$$\frac{8\,i\,e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+$$
$$\frac{e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^3}{3\,b\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-\frac{8\,b^2\,e^4\,(1-c^2x^2)^{5/2}\,\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+$$
$$\frac{8\,e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2\,\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-$$
$$\frac{4\,b\,e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Csc}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-$$
$$\left(2\,e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2\,\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]\,\text{Csc}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2\right)\Big/$$
$$\left(3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}\right)-\frac{32\,b\,e^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+$$
$$\frac{32\,i\,b^2\,e^4\,(1-c^2x^2)^{5/2}\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}$$

Result (type 4, 1430 leaves):

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

$$\Bigg(a b e \sqrt{d+c d x}\ \sqrt{e-c e x}\ \sqrt{-d e\left(1-c^2 x^2\right)}\ \left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)$$
$$\Bigg(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\Big(-8+6\,\text{ArcSin}[c x]+9\,\text{ArcSin}[c x]^2-$$
$$84\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\Big)+\text{Cos}\left[\tfrac{3}{2}\text{ArcSin}[c x]\right]$$
$$\Big(\left(14-3\,\text{ArcSin}[c x]\right)\text{ArcSin}[c x]+28\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\Big)+$$
$$2\Big(-4+4\,\text{ArcSin}[c x]+6\,\text{ArcSin}[c x]^2+\sqrt{1-c^2 x^2}\ \Big(\text{ArcSin}[c x]\left(14+3\,\text{ArcSin}[c x]\right)-$$
$$28\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\Big)-$$
$$56\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\Big)\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\Bigg)\Bigg)\Big/$$
$$\left(6 c d^3\left(-1+c x\right)\sqrt{-\left(d+c d x\right)\left(e-c e x\right)}\ \left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)^4\right)-$$

$$\Bigg(a b e \sqrt{d+c d x}\ \sqrt{e-c e x}\ \sqrt{-d e\left(1-c^2 x^2\right)}$$
$$\left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]-\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)$$
$$\Bigg(\text{Cos}\left[\tfrac{3}{2}\text{ArcSin}[c x]\right]\left(\text{ArcSin}[c x]+2\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)-$$
$$\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\left(4+3\,\text{ArcSin}[c x]+6\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\right)+$$
$$2\Big(-2+2\,\text{ArcSin}[c x]+\sqrt{1-c^2 x^2}\ \text{ArcSin}[c x]-$$
$$4\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]-$$
$$2\sqrt{1-c^2 x^2}\ \text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]\Big)\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\Bigg)\Bigg)\Big/$$
$$\left(3 c d^3\left(-1+c x\right)\sqrt{-\left(d+c d x\right)\left(e-c e x\right)}\ \left(\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]+\text{Sin}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right)^4\right)-$$

$$\Bigg(b^2 e\left(-1+c x\right)\sqrt{d+c d x}\ \sqrt{e-c e x}\ \sqrt{-d e\left(1-c^2 x^2\right)}$$
$$\Bigg(-i\pi\,\text{ArcSin}[c x]+\left(1+i\right)\text{ArcSin}[c x]^2-4\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c x]}\right]-$$
$$2\left(\pi+2\,\text{ArcSin}[c x]\right)\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c x]}\right]+4\pi\,\text{Log}\left[\text{Cos}\left[\tfrac{1}{2}\text{ArcSin}[c x]\right]\right]+$$
$$2\pi\,\text{Log}\left[\text{Sin}\left[\tfrac{1}{4}\left(\pi+2\,\text{ArcSin}[c x]\right)\right]\right]+4\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c x]}\right]+$$

$$\frac{4\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3}-\frac{2\,\text{ArcSin}[c\,x]\,(2+\text{ArcSin}[c\,x])}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2}-$$

$$\left.\left.\frac{2\left(-4+\text{ArcSin}[c\,x]^2\right)\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}\right)\right)\Big/$$

$$\left(3\,c\,d^3\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2x^2}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)+$$

$$\left(b^2\,e\,(-1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}\right.$$

$$\left(7\,i\,\pi\,\text{ArcSin}[c\,x]-(7+7\,i)\,\text{ArcSin}[c\,x]^2-\text{ArcSin}[c\,x]^3+\right.$$

$$28\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+14\,(\pi+2\,\text{ArcSin}[c\,x])\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$

$$28\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-14\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-$$

$$28\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]-\frac{4\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3}+$$

$$\frac{2\,\text{ArcSin}[c\,x]\,(2+\text{ArcSin}[c\,x])}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2}+$$

$$\left.\left.\frac{2\left(-4+7\,\text{ArcSin}[c\,x]^2\right)\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}\right)\right)\Big/$$

$$\left(3\,c\,d^3\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2x^2}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)$$

Problem 556: Result more than twice size of optimal antiderivative.

$$\int\frac{(e-c\,e\,x)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{(d+c\,d\,x)^{3/2}}\,dx$$

Optimal (type 4, 918 leaves, 28 steps):

$$\frac{8\,a\,b\,e^4\,x\,\left(1-c^2\,x^2\right)^{3/2}}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{8\,b^2\,e^4\,\left(1-c^2\,x^2\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{b^2\,e^4\,x\,\left(1-c^2\,x^2\right)^2}{4\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{b^2\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{ArcSin}[c\,x]}{4\,c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+$$
$$\frac{8\,b^2\,e^4\,x\,\left(1-c^2\,x^2\right)^{3/2}\,\text{ArcSin}[c\,x]}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{b\,c\,e^4\,x^2\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{2\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{8\,e^4\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{8\,e^4\,x\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{8\,i\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{4\,e^4\,\left(1-c^2\,x^2\right)^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+$$
$$\frac{e^4\,x\,\left(1-c^2\,x^2\right)^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{2\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{5\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)^3}{2\,b\,c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{32\,i\,b\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+$$
$$\frac{16\,b\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{Log}\left[1+e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+$$
$$\frac{16\,i\,b^2\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{16\,i\,b^2\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-$$
$$\frac{8\,i\,b^2\,e^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}$$

Result (type 4, 2279 leaves):

$$\frac{\sqrt{-e\,\left(-1+c\,x\right)}\,\sqrt{d\,\left(1+c\,x\right)}\,\left(-\frac{4\,a^2\,e^2}{d^2}+\frac{a^2\,c\,e^2\,x}{2\,d^2}-\frac{8\,a^2\,e^2}{d^2\,\left(1+c\,x\right)}\right)}{c}+$$
$$\frac{15\,a^2\,e^{5/2}\,\text{ArcTan}\left[\frac{c\,x\,\sqrt{-e\,\left(-1+c\,x\right)}\,\sqrt{d\,\left(1+c\,x\right)}}{\sqrt{d}\,\sqrt{e}\,\left(-1+c\,x\right)\,\left(1+c\,x\right)}\right]}{2\,c\,d^{3/2}}-$$
$$\left(a\,b\,e^2\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2\,x^2\right)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right.\right.$$
$$\left(\text{ArcSin}[c\,x]\,\left(4+\text{ArcSin}[c\,x]\right)-8\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)+$$
$$\left(\left(-4+\text{ArcSin}[c\,x]\right)\,\text{ArcSin}[c\,x]-8\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)$$
$$\left.\left.\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2x^2}\,\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right)\right)-$$

$$\Bigg(4\,a\,b\,e^2\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\left(-c\,x+2\,\mathrm{ArcSin}[c\,x]+\sqrt{1-c^2x^2}\,\mathrm{ArcSin}[c\,x]+\right.\right.$$
$$\left.\mathrm{ArcSin}[c\,x]^2-4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]\right)+$$
$$\left(-c\,x-2\,\mathrm{ArcSin}[c\,x]+\sqrt{1-c^2x^2}\,\mathrm{ArcSin}[c\,x]+\mathrm{ArcSin}[c\,x]^2-\right.$$
$$\left.\left.4\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]\right)\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right)\Bigg)\Big/$$
$$\left(c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2x^2}\,\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right)\right)-$$

$$\Bigg(b^2e^2\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\left(-6\,i\,\pi\,\mathrm{ArcSin}[c\,x]+(6+6\,i)\,\mathrm{ArcSin}[c\,x]^2+\mathrm{ArcSin}[c\,x]^3-\right.\right.$$
$$24\,\pi\,\mathrm{Log}\left[1+e^{-i\,\mathrm{ArcSin}[c\,x]}\right]-12\,(\pi+2\,\mathrm{ArcSin}[c\,x])\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]+$$
$$\left.24\,\pi\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]+12\,\pi\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{1}{4}(\pi+2\,\mathrm{ArcSin}[c\,x])\right]\right]\right)+$$
$$\left(-6\,i\,\pi\,\mathrm{ArcSin}[c\,x]-(6-6\,i)\,\mathrm{ArcSin}[c\,x]^2+\mathrm{ArcSin}[c\,x]^3-24\,\pi\,\mathrm{Log}\left[1+e^{-i\,\mathrm{ArcSin}[c\,x]}\right]-\right.$$
$$12\,(\pi+2\,\mathrm{ArcSin}[c\,x])\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]+24\,\pi\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]+$$
$$\left.12\,\pi\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{1}{4}(\pi+2\,\mathrm{ArcSin}[c\,x])\right]\right]\right)\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+$$
$$\left.24\,i\,\mathrm{PolyLog}\left[2,\,i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right)\right)\Bigg)\Big/$$
$$\left(3\,c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2x^2}\,\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right)\right)-$$

$$\Bigg(2\,b^2e^2\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}$$
$$\left(\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\left(3\sqrt{1-c^2x^2}\,(-2+\mathrm{ArcSin}[c\,x]^2)+2\left(-3\,i\,\pi\,\mathrm{ArcSin}[c\,x]-\right.\right.\right.$$
$$3\,c\,x\,\mathrm{ArcSin}[c\,x]+(3+3\,i)\,\mathrm{ArcSin}[c\,x]^2+\mathrm{ArcSin}[c\,x]^3-12\,\pi\,\mathrm{Log}\left[1+e^{-i\,\mathrm{ArcSin}[c\,x]}\right]-$$
$$6\,\pi\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]-12\,\mathrm{ArcSin}[c\,x]\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]+$$
$$\left.\left.12\,\pi\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]+6\,\pi\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{1}{4}(\pi+2\,\mathrm{ArcSin}[c\,x])\right]\right]\right)\right)+$$
$$\left(3\sqrt{1-c^2x^2}\,(-2+\mathrm{ArcSin}[c\,x]^2)+2\left(-3\,i\,\pi\,\mathrm{ArcSin}[c\,x]-3\,c\,x\,\mathrm{ArcSin}[c\,x]-(3-3\,i)\right.\right.$$
$$\mathrm{ArcSin}[c\,x]^2+\mathrm{ArcSin}[c\,x]^3-12\,\pi\,\mathrm{Log}\left[1+e^{-i\,\mathrm{ArcSin}[c\,x]}\right]-6\,\pi\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]-$$
$$12\,\mathrm{ArcSin}[c\,x]\,\mathrm{Log}\left[1-i\,e^{i\,\mathrm{ArcSin}[c\,x]}\right]+12\,\pi\,\mathrm{Log}\left[\mathrm{Cos}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]\right]+$$
$$\left.\left.6\,\pi\,\mathrm{Log}\left[\mathrm{Sin}\left[\frac{1}{4}(\pi+2\,\mathrm{ArcSin}[c\,x])\right]\right]\right)\right)\mathrm{Sin}\left[\frac{1}{2}\mathrm{ArcSin}[c\,x]\right]+$$

$$24\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(3\,c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)-$$

$$\Bigg(b^2\,e^2\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2\,x^2)}$$

$$\Bigg(96\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)+$$

$$\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg(-24\,i\,\pi\,\text{ArcSin}[c\,x]-48\,c\,x\,\text{ArcSin}[c\,x]-(24-24\,i)\,\text{ArcSin}[c\,x]^2+$$

$$10\,\text{ArcSin}[c\,x]^3+3\sqrt{1-c^2\,x^2}\,\left(-16+c\,x+8\,\text{ArcSin}[c\,x]^2\right)-3\,\text{ArcSin}[c\,x]$$
$$\text{Cos}[2\,\text{ArcSin}[c\,x]]-96\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]-48\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$

$$96\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+96\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$48\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-3\,\text{ArcSin}[c\,x]^2\,\text{Sin}[2\,\text{ArcSin}[c\,x]]\Bigg)+$$

$$\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg(-24\,i\,\pi\,\text{ArcSin}[c\,x]-48\,c\,x\,\text{ArcSin}[c\,x]+(24+24\,i)\,\text{ArcSin}[c\,x]^2+$$

$$10\,\text{ArcSin}[c\,x]^3+3\sqrt{1-c^2\,x^2}\,\left(-16+c\,x+8\,\text{ArcSin}[c\,x]^2\right)-3\,\text{ArcSin}[c\,x]$$
$$\text{Cos}[2\,\text{ArcSin}[c\,x]]-96\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]-48\,\pi\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$

$$96\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+96\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$48\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-3\,\text{ArcSin}[c\,x]^2\,\text{Sin}[2\,\text{ArcSin}[c\,x]]\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(12\,c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)-$$

$$\Bigg(a\,b\,e^2\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2\,x^2)}$$

$$\Bigg((15+14\,\text{ArcSin}[c\,x])\,\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-$$

$$\text{Cos}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+2\,\text{ArcSin}[c\,x]\,\text{Cos}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+$$

$$4\,\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg(-4+12\,\text{ArcSin}[c\,x]+5\,\text{ArcSin}[c\,x]^2-$$

$$16\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)-16\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-$$

$$48\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+20\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-$$

$$64\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-$$

$$15\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]+14\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-$$

$$\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]-2\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\left(8\,c\,d^2\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)$$

Problem 557: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 729 leaves, 25 steps):

$$-\frac{2\,a\,b\,e^5\,x\left(1-c^2x^2\right)^{5/2}}{(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}-\frac{2\,b^2e^5\left(1-c^2x^2\right)^3}{c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}-\frac{2\,b^2e^5\,x\left(1-c^2x^2\right)^{5/2}\text{ArcSin}[c\,x]}{(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}+$$
$$\frac{28\,i\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}+\frac{e^5\left(1-c^2x^2\right)^3\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}+$$
$$\frac{5\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)^3}{3\,b\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}-\frac{16\,b^2e^5\left(1-c^2x^2\right)^{5/2}\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}+$$
$$\frac{28\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)^2\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}-$$
$$\frac{8\,b\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)\text{Csc}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}-$$
$$\left(4\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)^2\text{Cot}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]\text{Csc}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2\right)\Big/$$
$$\left(3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}\right)-\frac{112\,b\,e^5\left(1-c^2x^2\right)^{5/2}\left(a+b\,\text{ArcSin}[c\,x]\right)\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}+$$
$$\frac{112\,i\,b^2e^5\left(1-c^2x^2\right)^{5/2}\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}(e-c\,e\,x)^{5/2}}$$

Result (type 4, 2326 leaves):

$$\frac{\sqrt{-e\,(-1+c\,x)}\,\sqrt{d\,(1+c\,x)}\left(\frac{a^2e^2}{d^3}-\frac{8\,a^2e^2}{3\,d^3\,(1+c\,x)^2}+\frac{28\,a^2e^2}{3\,d^3\,(1+c\,x)}\right)}{c}-$$
$$\frac{5\,a^2e^{5/2}\,\text{ArcTan}\left[\frac{c\,x\sqrt{-e\,(-1+c\,x)}\,\sqrt{d\,(1+c\,x)}}{\sqrt{d}\,\sqrt{e}\,(-1+c\,x)\,(1+c\,x)}\right]}{c\,d^{5/2}}-$$
$$\left(a\,b\,e^2\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2x^2\right)}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-8+6\,\text{ArcSin}[c\,x]+9\,\text{ArcSin}[c\,x]^2-\right.\right.$$
$$\left.84\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]$$
$$\left(\left(14-3\,\text{ArcSin}[c\,x]\right)\text{ArcSin}[c\,x]+28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$
$$2\left(-4+4\,\text{ArcSin}[c\,x]+6\,\text{ArcSin}[c\,x]^2+\sqrt{1-c^2x^2}\left(\text{ArcSin}[c\,x]\,\left(14+3\,\text{ArcSin}[c\,x]\right)-\right.\right.$$

$$28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\Bigg)-$$

$$56\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\Bigg)\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\left(3\,c\,d^3\,(-1+c\,x)\,\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^4\right)-$$

$$\Bigg(a\,b\,e^2\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2\,x^2\right)}$$

$$\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)$$

$$\Bigg(\text{Cos}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]\,\left(\text{ArcSin}[c\,x]+2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)-$$

$$\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\,\left(4+3\,\text{ArcSin}[c\,x]+6\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(-2+2\,\text{ArcSin}[c\,x]+\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]-$$

$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$

$$2\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\Bigg)\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\left(3\,c\,d^3\,(-1+c\,x)\,\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^4\right)-$$

$$\Bigg(b^2\,e^2\,(-1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2\,x^2\right)}$$

$$\Bigg(-\frac{6\,c\,x\,\text{ArcSin}[c\,x]}{\sqrt{1-c^2\,x^2}}+\frac{(13+13\,i)\,\text{ArcSin}[c\,x]^2}{\sqrt{1-c^2\,x^2}}+\frac{3\,\text{ArcSin}[c\,x]^3}{\sqrt{1-c^2\,x^2}}+$$

$$3\,\left(-2+\text{ArcSin}[c\,x]^2\right)+\frac{1}{\sqrt{1-c^2\,x^2}}13\,\Big(-i\,\pi\,\text{ArcSin}[c\,x]-4\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]-$$

$$2\,(\pi+2\,\text{ArcSin}[c\,x])\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$

$$2\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+4\,i\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Big)+$$

$$\frac{4\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}{\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^3}-$$

$$\frac{2\,\text{ArcSin}[c\,x]\,(2+\text{ArcSin}[c\,x])}{\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^2}+$$

$$\frac{2\,\left(4-13\,\text{ArcSin}[c\,x]^2\right)\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]}{\sqrt{1-c^2\,x^2}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)}\Bigg)\Bigg)\Big/$$

$$\left(3\,c\,d^3\,\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^2\right)-$$

$$\left(b^2 e^2 \left(-1+c x\right) \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)}\right.$$

$$\left(-\mathrm{i} \pi \text{ArcSin}[c x]+(1+\mathrm{i}) \text{ArcSin}[c x]^2-4 \pi \text{Log}\left[1+e^{-\mathrm{i} \text{ArcSin}[c x]}\right]-\right.$$

$$2 (\pi+2 \text{ArcSin}[c x]) \text{Log}\left[1-\mathrm{i} e^{\mathrm{i} \text{ArcSin}[c x]}\right]+4 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$

$$2 \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+4 \mathrm{i} \text{PolyLog}\left[2, \mathrm{i} e^{\mathrm{i} \text{ArcSin}[c x]}\right]+$$

$$\frac{4 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^3}-$$

$$\frac{2 \text{ArcSin}[c x] (2+\text{ArcSin}[c x])}{\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2}-$$

$$\left.\left.\frac{2 \left(-4+\text{ArcSin}[c x]^2\right) \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}\right)\right) \Big/$$

$$\left(3 c d^3 \sqrt{-(d+c d x) (e-c e x)} \sqrt{1-c^2 x^2} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2\right)+$$

$$\left(2 b^2 e^2 \left(-1+c x\right) \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)}\right.$$

$$\left(7 \mathrm{i} \pi \text{ArcSin}[c x]-(7+7 \mathrm{i}) \text{ArcSin}[c x]^2-\text{ArcSin}[c x]^3+\right.$$

$$28 \pi \text{Log}\left[1+e^{-\mathrm{i} \text{ArcSin}[c x]}\right]+14 (\pi+2 \text{ArcSin}[c x]) \text{Log}\left[1-\mathrm{i} e^{\mathrm{i} \text{ArcSin}[c x]}\right]-$$

$$28 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-14 \pi \text{Log}\left[\text{Sin}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]-$$

$$28 \mathrm{i} \text{PolyLog}\left[2, \mathrm{i} e^{\mathrm{i} \text{ArcSin}[c x]}\right]-\frac{4 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^3}+$$

$$\frac{2 \text{ArcSin}[c x] (2+\text{ArcSin}[c x])}{\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2}+$$

$$\left.\left.\frac{2 \left(-4+7 \text{ArcSin}[c x]^2\right) \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}\right)\right) \Big/$$

$$\left(3 c d^3 \sqrt{-(d+c d x) (e-c e x)} \sqrt{1-c^2 x^2} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2\right)-$$

$$\left(a b e^2 \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)\right.$$

$$\left(3\,\text{Cos}\left[\frac{5}{2}\,\text{ArcSin}[c\,x]\right]-3\,\text{ArcSin}[c\,x]\,\text{Cos}\left[\frac{5}{2}\,\text{ArcSin}[c\,x]\right]+\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\left(-20+24\,\text{ArcSin}[c\,x]+27\,\text{ArcSin}[c\,x]^2-156\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)+\text{Cos}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]\left(9+35\,\text{ArcSin}[c\,x]-9\,\text{ArcSin}[c\,x]^2+52\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)-20\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-24\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+27\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-156\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-9\,\text{Sin}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]+35\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]+9\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]-52\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\text{Sin}\left[\frac{3}{2}\,\text{ArcSin}[c\,x]\right]+3\,\text{Sin}\left[\frac{5}{2}\,\text{ArcSin}[c\,x]\right]+3\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{5}{2}\,\text{ArcSin}[c\,x]\right]\right)\right)\Big/\left(6\,c\,d^3\,(-1+c\,x)\,\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)^4\right)$$

Problem 561: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 55 leaves, 2 steps):

$$\frac{\sqrt{1-c^2\,x^2}\,(a+b\,\text{ArcSin}[c\,x])^3}{3\,b\,c\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}}$$

Result (type 3, 159 leaves):

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

Problem 564: Result more than twice size of optimal antiderivative.

$$\int\frac{(d+c\,d\,x)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{(e-c\,e\,x)^{3/2}}\,dx$$

Optimal (type 4, 918 leaves, 28 steps):

$$-\frac{8\,a\,b\,d^4\,x\,\left(1-c^2\,x^2\right)^{3/2}}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{8\,b^2\,d^4\,\left(1-c^2\,x^2\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{b^2\,d^4\,x\,\left(1-c^2\,x^2\right)^2}{4\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{b^2\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{ArcSin}[c\,x]}{4\,c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{8\,b^2\,d^4\,x\,\left(1-c^2\,x^2\right)^{3/2}\,\text{ArcSin}[c\,x]}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{b\,c\,d^4\,x^2\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)}{2\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{8\,d^4\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{8\,d^4\,x\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{8\,i\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{4\,d^4\,\left(1-c^2\,x^2\right)^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{d^4\,x\,\left(1-c^2\,x^2\right)^2\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{2\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{5\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)^3}{2\,b\,c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{32\,i\,b\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{ArcTan}\left[e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{16\,b\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)\,\text{Log}\left[1+e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{16\,i\,b^2\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+\frac{16\,i\,b^2\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{8\,i\,b^2\,d^4\,\left(1-c^2\,x^2\right)^{3/2}\,\text{PolyLog}\left[2,-e^{2\,i\,\text{ArcSin}[c\,x]}\right]}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}$$

Result (type 4, 2029 leaves):

$$\frac{\sqrt{-e\,\left(-1+c\,x\right)}\,\sqrt{d\,\left(1+c\,x\right)}\,\left(\frac{4\,a^2\,d^2}{e^2}+\frac{a^2\,c\,d^2\,x}{2\,e^2}-\frac{8\,a^2\,d^2}{e^2\,\left(-1+c\,x\right)}\right)}{c}+\frac{15\,a^2\,d^{5/2}\,\text{ArcTan}\left[\frac{c\,x\,\sqrt{-e\,\left(-1+c\,x\right)}\,\sqrt{d\,\left(1+c\,x\right)}}{\sqrt{d}\,\sqrt{e}\,\left(-1+c\,x\right)\,\left(1+c\,x\right)}\right]}{2\,c\,e^{3/2}}-\left(a\,b\,d^2\,\left(1+c\,x\right)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2\,x^2\right)}\,\left(\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\left(\left(-4+\text{ArcSin}[c\,x]\right)\,\text{ArcSin}[c\,x]-8\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)-\left(\text{ArcSin}[c\,x]\,\left(4+\text{ArcSin}[c\,x]\right)-8\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)\,\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(c\,e^2 \sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2 x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)+$$

$$\left(4\,a\,b\,d^2\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2 x^2)}\right.$$
$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-c\,x+2\,\text{ArcSin}[c\,x]+\sqrt{1-c^2 x^2}\,\text{ArcSin}[c\,x]-\right.\right.$$
$$\left.\text{ArcSin}[c\,x]^2+4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$
$$\left(c\,x+2\,\text{ArcSin}[c\,x]-\sqrt{1-c^2 x^2}\,\text{ArcSin}[c\,x]+\text{ArcSin}[c\,x]^2-\right.$$
$$\left.\left.\left.4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(c\,e^2 \sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2 x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)-$$

$$\left(b^2\,d^2\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2 x^2)}\right.$$
$$\left(-18\,i\,\pi\,\text{ArcSin}[c\,x]-(6-6\,i)\,\text{ArcSin}[c\,x]^2+\text{ArcSin}[c\,x]^3-\right.$$
$$24\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+12\,(\pi-2\,\text{ArcSin}[c\,x])\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$
$$24\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-12\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+$$
$$\left.\left.24\,i\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-\frac{12\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]}\right)\right)\Big/$$

$$\left(3\,c\,e^2 \sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\,\sqrt{1-c^2 x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)-$$

$$\left(b^2\,d^2\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2 x^2)}\right.$$
$$\left(\frac{96\,c\,x\,\text{ArcSin}[c\,x]}{\sqrt{1-c^2 x^2}}-\frac{(48-48\,i)\,\text{ArcSin}[c\,x]^2}{\sqrt{1-c^2 x^2}}+\frac{20\,\text{ArcSin}[c\,x]^3}{\sqrt{1-c^2 x^2}}-\right.$$
$$48\,(-2+\text{ArcSin}[c\,x]^2)-6\,c\,x\,(-1+2\,\text{ArcSin}[c\,x]^2)-\frac{6\,\text{ArcSin}[c\,x]\,\text{Cos}[2\,\text{ArcSin}[c\,x]]}{\sqrt{1-c^2 x^2}}+$$
$$\frac{1}{\sqrt{1-c^2 x^2}}48\left(-3\,i\,\pi\,\text{ArcSin}[c\,x]-4\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+\right.$$
$$2\,(\pi-2\,\text{ArcSin}[c\,x])\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$

$$2\,\pi\,\text{Log}\Big[-\text{Cos}\Big[\frac{1}{4}\,\big(\pi+2\,\text{ArcSin}[c\,x]\big)\Big]\Big]+4\,i\,\text{PolyLog}\Big[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\Big]\Big)-$$

$$\frac{96\,\text{ArcSin}[c\,x]^2\,\text{Sin}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]}{\sqrt{1-c^2\,x^2}\,\big(\text{Cos}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]-\text{Sin}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]\big)}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(24\,c\,e^2\,\sqrt{-\big(d+c\,d\,x\big)\,\big(e-c\,e\,x\big)}\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)^2\Bigg)-$$

$$\Bigg(2\,b^2\,d^2\,\big(1+c\,x\big)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\big(1-c^2\,x^2\big)}$$

$$\Bigg(6+\frac{6\,c\,x\,\text{ArcSin}[c\,x]}{\sqrt{1-c^2\,x^2}}-3\,\text{ArcSin}[c\,x]^2-\frac{\big(6-6\,i\big)\,\text{ArcSin}[c\,x]^2}{\sqrt{1-c^2\,x^2}}+$$

$$\frac{2\,\text{ArcSin}[c\,x]^3}{\sqrt{1-c^2\,x^2}}+\frac{1}{\sqrt{1-c^2\,x^2}}6\,\Big(-3\,i\,\pi\,\text{ArcSin}[c\,x]-4\,\pi\,\text{Log}\Big[1+e^{-i\,\text{ArcSin}[c\,x]}\Big]+$$

$$2\,\big(\pi-2\,\text{ArcSin}[c\,x]\big)\,\text{Log}\Big[1+i\,e^{i\,\text{ArcSin}[c\,x]}\Big]+4\,\pi\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]-$$

$$2\,\pi\,\text{Log}\Big[-\text{Cos}\Big[\frac{1}{4}\,\big(\pi+2\,\text{ArcSin}[c\,x]\big)\Big]\Big]+4\,i\,\text{PolyLog}\Big[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\Big]\Big)-$$

$$\frac{12\,\text{ArcSin}[c\,x]^2\,\text{Sin}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]}{\sqrt{1-c^2\,x^2}\,\big(\text{Cos}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]-\text{Sin}\big[\frac{1}{2}\,\text{ArcSin}[c\,x]\big]\big)}\Bigg)\Bigg)\Bigg/$$

$$\Bigg(3\,c\,e^2\,\sqrt{-\big(d+c\,d\,x\big)\,\big(e-c\,e\,x\big)}\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)^2\Bigg)+$$

$$\Bigg(a\,b\,d^2\,\big(1+c\,x\big)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\big(1-c^2\,x^2\big)}$$

$$\Bigg(\big(-15+14\,\text{ArcSin}[c\,x]\big)\,\text{Cos}\Big[\frac{3}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Cos}\Big[\frac{5}{2}\,\text{ArcSin}[c\,x]\Big]+2\,\text{ArcSin}[c\,x]$$

$$\text{Cos}\Big[\frac{5}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\,\Big(16+48\,\text{ArcSin}[c\,x]-20\,\text{ArcSin}[c\,x]^2+$$

$$64\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]\Big)-16\,\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+$$

$$48\,\text{ArcSin}[c\,x]\,\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+20\,\text{ArcSin}[c\,x]^2\,\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-$$

$$64\,\text{Log}\Big[\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big]\,\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-$$

$$15\,\text{Sin}\Big[\frac{3}{2}\,\text{ArcSin}[c\,x]\Big]-14\,\text{ArcSin}[c\,x]\,\text{Sin}\Big[\frac{3}{2}\,\text{ArcSin}[c\,x]\Big]-$$

$$\text{Sin}\Big[\frac{5}{2}\,\text{ArcSin}[c\,x]\Big]+2\,\text{ArcSin}[c\,x]\,\text{Sin}\Big[\frac{5}{2}\,\text{ArcSin}[c\,x]\Big]\Bigg)\Bigg)\Bigg/$$

$$\Bigg(8\,c\,e^2\,\sqrt{-\big(d+c\,d\,x\big)\,\big(e-c\,e\,x\big)}\,\sqrt{1-c^2\,x^2}\,\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]-\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)$$

$$\Big(\text{Cos}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]+\text{Sin}\Big[\frac{1}{2}\,\text{ArcSin}[c\,x]\Big]\Big)^2\Bigg)$$

Problem 568: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\text{ArcSin}[c\,x])^2}{(d+c\,d\,x)^{3/2}\,(e-c\,e\,x)^{3/2}}\,dx$$

Optimal (type 4, 217 leaves, 7 steps):

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

Result (type 4, 550 leaves):

$$\frac{1}{c\,d\,e\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}}\Bigg(a^2\,c\,x+2\,a\,b\,c\,x\,\text{ArcSin}[c\,x]+2\,i\,b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{ArcSin}[c\,x]+b^2\,c\,x\,\text{ArcSin}[c\,x]^2-i\,b^2\,\sqrt{1-c^2x^2}\,\text{ArcSin}[c\,x]^2+4\,b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,\sqrt{1-c^2x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,\sqrt{1-c^2x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-4\,b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+2\,a\,b\,\sqrt{1-c^2x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+2\,a\,b\,\sqrt{1-c^2x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-b^2\,\pi\,\sqrt{1-c^2x^2}\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\,x])\right]\right]-2\,i\,b^2\,\sqrt{1-c^2x^2}\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,i\,b^2\,\sqrt{1-c^2x^2}\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Bigg)$$

Problem 570: Result more than twice size of optimal antiderivative.

$$\int \frac{(d+c\,d\,x)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{(e-c\,e\,x)^{5/2}}\,dx$$

Optimal (type 4, 730 leaves, 25 steps):

$$\frac{2 a b d^5 x \left(1-c^2 x^2\right)^{5/2}}{(d+c d x)^{5/2} (e-c e x)^{5/2}}+\frac{2 b^2 d^5 \left(1-c^2 x^2\right)^3}{c (d+c d x)^{5/2} (e-c e x)^{5/2}}+$$
$$\frac{2 b^2 d^5 x \left(1-c^2 x^2\right)^{5/2} \text{ArcSin}[c x]}{(d+c d x)^{5/2} (e-c e x)^{5/2}}-\frac{28 i d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x])^2}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}-$$
$$\frac{d^5 \left(1-c^2 x^2\right)^3 (a+b \text{ArcSin}[c x])^2}{c (d+c d x)^{5/2} (e-c e x)^{5/2}}+\frac{5 d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x])^3}{3 b c (d+c d x)^{5/2} (e-c e x)^{5/2}}-$$
$$\frac{112 b d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x]) \text{Log}\left[1-i e^{-i \text{ArcSin}[c x]}\right]}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}-$$
$$\frac{112 i b^2 d^5 \left(1-c^2 x^2\right)^{5/2} \text{PolyLog}\left[2, i e^{-i \text{ArcSin}[c x]}\right]}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}-$$
$$\frac{8 b d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x]) \text{Sec}\left[\frac{\pi}{4}+\frac{1}{2} \text{ArcSin}[c x]\right]^2}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}+$$
$$\frac{16 b^2 d^5 \left(1-c^2 x^2\right)^{5/2} \text{Tan}\left[\frac{\pi}{4}+\frac{1}{2} \text{ArcSin}[c x]\right]}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}-$$
$$\frac{28 d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x])^2 \text{Tan}\left[\frac{\pi}{4}+\frac{1}{2} \text{ArcSin}[c x]\right]}{3 c (d+c d x)^{5/2} (e-c e x)^{5/2}}+$$
$$\left(4 d^5 \left(1-c^2 x^2\right)^{5/2} (a+b \text{ArcSin}[c x])^2 \text{Sec}\left[\frac{\pi}{4}+\frac{1}{2} \text{ArcSin}[c x]\right]^2 \text{Tan}\left[\frac{\pi}{4}+\frac{1}{2} \text{ArcSin}[c x]\right]\right) \Big/ \left(3 c (d+c d x)^{5/2} (e-c e x)^{5/2}\right)$$

Result (type 4, 2300 leaves):

$$\frac{\sqrt{-e (-1+c x)} \sqrt{d (1+c x)} \left(-\frac{a^2 d^2}{e^3}+\frac{8 a^2 d^2}{3 e^3 (-1+c x)^2}+\frac{28 a^2 d^2}{3 e^3 (-1+c x)}\right)}{c}-$$
$$\frac{5 a^2 d^{5/2} \text{ArcTan}\left[\frac{c x \sqrt{-e (-1+c x)} \sqrt{d (1+c x)}}{\sqrt{d} \sqrt{e} (-1+c x) (1+c x)}\right]}{c e^{5/2}}+\left(a b d^2 \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)}\right.$$
$$\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] \left(-4+3 \text{ArcSin}[c x]-6 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]\right)-\right.$$
$$\text{Cos}\left[\frac{3}{2} \text{ArcSin}[c x]\right] \left(\text{ArcSin}[c x]-2 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]\right)+$$
$$2 \left(2+2 \text{ArcSin}[c x]+\sqrt{1-c^2 x^2} \text{ArcSin}[c x]+\right.$$
$$4 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]+$$
$$\left.\left.\left.2 \sqrt{1-c^2 x^2} \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]\right) \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)\right) \Big/$$
$$\left(3 c e^3 \sqrt{-(d+c d x) (e-c e x)} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^4\right.$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(a\,b\,d^2\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2x^2\right)}$$

$$\Bigg(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg(-8-6\,\text{ArcSin}[c\,x]+9\,\text{ArcSin}[c\,x]^2-$$

$$84\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)+\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]$$

$$\left(-\text{ArcSin}[c\,x]\,\left(14+3\,\text{ArcSin}[c\,x]\right)+28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(4+4\,\text{ArcSin}[c\,x]-6\,\text{ArcSin}[c\,x]^2+56\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$\sqrt{1-c^2x^2}\,\Bigg(\left(14-3\,\text{ArcSin}[c\,x]\right)\text{ArcSin}[c\,x]+$$

$$28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)\Bigg)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\Bigg(3\,c\,e^3\sqrt{-\left(d+c\,d\,x\right)\,\left(e-c\,e\,x\right)}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(b^2d^2\,\left(1+c\,x\right)\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2x^2\right)}$$

$$\Bigg(-3\,i\,\pi\,\text{ArcSin}[c\,x]+\frac{4\,\text{ArcSin}[c\,x]}{-1+c\,x}-\left(1-i\right)\,\text{ArcSin}[c\,x]^2-$$

$$\frac{2\,\text{ArcSin}[c\,x]^2}{-1+c\,x}-4\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+2\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$

$$4\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$

$$2\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]+4\,i\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$

$$\left(2\,\left(4+\text{ArcSin}[c\,x]^2+c\,x\,\left(-4+\text{ArcSin}[c\,x]^2\right)\right)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Big/$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3\Bigg)\Bigg)\Big/$$

$$\left(3\,c\,e^3\sqrt{-\left(d+c\,d\,x\right)\,\left(e-c\,e\,x\right)}\,\sqrt{1-c^2x^2}\,\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)+$$

$$\Bigg(b^2d^2\,\left(1+c\,x\right)\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,\left(1-c^2x^2\right)}$$

$$\Bigg(6+\frac{6\,c\,x\,\text{ArcSin}[c\,x]}{\sqrt{1-c^2x^2}}-\frac{2\,\left(-2+\text{ArcSin}[c\,x]\right)\,\text{ArcSin}[c\,x]}{\left(-1+c\,x\right)\sqrt{1-c^2x^2}}-$$

$$3\,\text{ArcSin}[c\,x]^2-\frac{\left(13-13\,i\right)\,\text{ArcSin}[c\,x]^2}{\sqrt{1-c^2x^2}}+\frac{3\,\text{ArcSin}[c\,x]^3}{\sqrt{1-c^2x^2}}+$$

$$\frac{1}{\sqrt{1-c^2 x^2}} 13 \left(-3 i \pi \text{ArcSin}[c x]-4 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+2 (\pi-2 \text{ArcSin}[c x]) \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+4 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-2 \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+4 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]\right)+\frac{4 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\sqrt{1-c^2 x^2} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^3}+\frac{2 \left(4-13 \text{ArcSin}[c x]^2\right) \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\sqrt{1-c^2 x^2} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)}\Bigg)\Bigg) \Bigg/$$

$$\left(3 c e^3 \sqrt{-(d+c d x) (e-c e x)} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2\right)+$$

$$\Bigg(2 b^2 d^2 (1+c x) \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)}$$

$$\Bigg(-21 i \pi \text{ArcSin}[c x]-\frac{2 (-2+\text{ArcSin}[c x]) \text{ArcSin}[c x]}{-1+c x}-(7-7 i) \text{ArcSin}[c x]^2+\text{ArcSin}[c x]^3-28 \pi \text{Log}\left[1+e^{-i \text{ArcSin}[c x]}\right]+14 (\pi-2 \text{ArcSin}[c x]) \text{Log}\left[1+i e^{i \text{ArcSin}[c x]}\right]+28 \pi \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]-14 \pi \text{Log}\left[-\text{Cos}\left[\frac{1}{4} (\pi+2 \text{ArcSin}[c x])\right]\right]+28 i \text{PolyLog}\left[2,-i e^{i \text{ArcSin}[c x]}\right]+\frac{4 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^3}+\frac{2 \left(4-7 \text{ArcSin}[c x]^2\right) \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}{\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]}\Bigg)\Bigg) \Bigg/$$

$$\left(3 c e^3 \sqrt{-(d+c d x) (e-c e x)} \sqrt{1-c^2 x^2} \left(\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right)^2\right)+$$

$$\Bigg(a b d^2 \sqrt{d+c d x} \sqrt{e-c e x} \sqrt{-d e \left(1-c^2 x^2\right)}$$

$$\Bigg(3 \text{Cos}\left[\frac{5}{2} \text{ArcSin}[c x]\right]+3 \text{ArcSin}[c x] \text{Cos}\left[\frac{5}{2} \text{ArcSin}[c x]\right]+\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right] \left(-20-24 \text{ArcSin}[c x]+27 \text{ArcSin}[c x]^2-156 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]\right)+\text{Cos}\left[\frac{3}{2} \text{ArcSin}[c x]\right] \left(9-35 \text{ArcSin}[c x]-9 \text{ArcSin}[c x]^2+52 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]\right)+20 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-24 \text{ArcSin}[c x] \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-27 \text{ArcSin}[c x]^2 \text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]+156 \text{Log}\left[\text{Cos}\left[\frac{1}{2} \text{ArcSin}[c x]\right]-\text{Sin}\left[\frac{1}{2} \text{ArcSin}[c x]\right]\right]$$

$$\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+9\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]+35\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-9\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]+52\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\text{Sin}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]-3\,\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]+3\,\text{ArcSin}[c\,x]\,\text{Sin}\left[\frac{5}{2}\text{ArcSin}[c\,x]\right]\Big)\Big)\Big/\left(6\,c\,e^3\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)$$

Problem 571: Result more than twice size of optimal antiderivative.

$$\int \frac{(d+c\,d\,x)^{3/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{(e-c\,e\,x)^{5/2}}\,dx$$

Optimal (type 4, 544 leaves, 21 steps):

$$-\frac{8\,i\,d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+\frac{d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^3}{3\,b\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-\frac{32\,b\,d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Log}\left[1-i\,e^{-i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-\frac{32\,i\,b^2\,d^4\,(1-c^2x^2)^{5/2}\,\text{PolyLog}\left[2,\,i\,e^{-i\,\text{ArcSin}[c\,x]}\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-\frac{4\,b\,d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])\,\text{Sec}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+\frac{8\,b^2\,d^4\,(1-c^2x^2)^{5/2}\,\text{Tan}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}-\frac{8\,d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2\,\text{Tan}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]}{3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}}+\left(2\,d^4\,(1-c^2x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\,x])^2\,\text{Sec}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]^2\,\text{Tan}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Big/\left(3\,c\,(d+c\,d\,x)^{5/2}\,(e-c\,e\,x)^{5/2}\right)$$

Result (type 4, 1411 leaves):

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

$$\Bigg(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(-4+3\,\text{ArcSin}[c\,x]-6\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)-$$

$$\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]\left(\text{ArcSin}[c\,x]-2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(2+2\,\text{ArcSin}[c\,x]+\sqrt{1-c^2x^2}\,\text{ArcSin}[c\,x]+$$

$$4\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$2\,\sqrt{1-c^2x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\Bigg(3\,c\,e^3\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(a\,b\,d\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}$$

$$\Bigg(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg(-8-6\,\text{ArcSin}[c\,x]+9\,\text{ArcSin}[c\,x]^2-$$

$$84\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)+\text{Cos}\left[\frac{3}{2}\text{ArcSin}[c\,x]\right]$$

$$\left(-\text{ArcSin}[c\,x]\,(14+3\,\text{ArcSin}[c\,x])+28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\right)+$$

$$2\,\Bigg(4+4\,\text{ArcSin}[c\,x]-6\,\text{ArcSin}[c\,x]^2+56\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$\sqrt{1-c^2x^2}\,\Bigg((14-3\,\text{ArcSin}[c\,x])\,\text{ArcSin}[c\,x]+$$

$$28\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]\Bigg)\Bigg)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\Bigg)\Bigg)\Big/$$

$$\Bigg(6\,c\,e^3\sqrt{-(d+c\,d\,x)\,(e-c\,e\,x)}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^4$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Bigg)+$$

$$\Bigg(b^2\,d\,(1+c\,x)\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\sqrt{-d\,e\,(1-c^2x^2)}$$

$$\Bigg(-3\,i\,\pi\,\text{ArcSin}[c\,x]+\frac{4\,\text{ArcSin}[c\,x]}{-1+c\,x}-(1-i)\,\text{ArcSin}[c\,x]^2-$$

$$\frac{2\,\text{ArcSin}[c\,x]^2}{-1+c\,x}-4\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+2\,\pi\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$

$$4\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+4\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$

$$2\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,(\pi+2\,\text{ArcSin}[c\,x])\right]\right]+4\,i\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+$$

$$\left(2\,\left(4+\text{ArcSin}[c\,x]^2+c\,x\,\left(-4+\text{ArcSin}[c\,x]^2\right)\right)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Big/$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^3\Bigg)\Bigg)\Big/$$

$$\left(3\, c\, e^3 \sqrt{-(d+c\, d\, x)\,(e-c\, e\, x)}\, \sqrt{1-c^2 x^2}\, \left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right)^2\right)+$$

$$\left(b^2 d\,(1+c\, x)\,\sqrt{d+c\, d\, x}\,\sqrt{e-c\, e\, x}\,\sqrt{-d\, e\,(1-c^2 x^2)}\right.$$

$$\left(-21\, i\, \pi\, \text{ArcSin}[c\, x]-\frac{2\,(-2+\text{ArcSin}[c\, x])\,\text{ArcSin}[c\, x]}{-1+c\, x}-(7-7\, i)\,\text{ArcSin}[c\, x]^2+\right.$$

$$\text{ArcSin}[c\, x]^3-28\,\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\, x]}\right]+14\,(\pi-2\,\text{ArcSin}[c\, x])\,\text{Log}\left[1+i\, e^{i\,\text{ArcSin}[c\, x]}\right]+$$

$$28\,\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right]-14\,\pi\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}(\pi+2\,\text{ArcSin}[c\, x])\right]\right]+$$

$$28\, i\,\text{PolyLog}\left[2,\,-i\, e^{i\,\text{ArcSin}[c\, x]}\right]+\frac{4\,\text{ArcSin}[c\, x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]}{\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right)^3}+$$

$$\left.\left.\frac{2\,(4-7\,\text{ArcSin}[c\, x]^2)\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]}{\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]}\right)\right)\Big/$$

$$\left(3\, c\, e^3 \sqrt{-(d+c\, d\, x)\,(e-c\, e\, x)}\, \sqrt{1-c^2 x^2}\, \left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right)^2\right)$$

Problem 575: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b\,\text{ArcSin}[c\, x])^2}{(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}\, dx$$

Optimal (type 4, 366 leaves, 10 steps):

$$\frac{b^2 x\,(1-c^2 x^2)^2}{3\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}-\frac{b\,(1-c^2 x^2)^{3/2}\,(a+b\,\text{ArcSin}[c\, x])}{3\, c\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}+$$

$$\frac{x\,(1-c^2 x^2)\,(a+b\,\text{ArcSin}[c\, x])^2}{3\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}+\frac{2\, x\,(1-c^2 x^2)^2\,(a+b\,\text{ArcSin}[c\, x])^2}{3\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}-$$

$$\frac{2\, i\,(1-c^2 x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\, x])^2}{3\, c\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}+\frac{4\, b\,(1-c^2 x^2)^{5/2}\,(a+b\,\text{ArcSin}[c\, x])\,\text{Log}\left[1+e^{2\, i\,\text{ArcSin}[c\, x]}\right]}{3\, c\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}-$$

$$\frac{2\, i\, b^2\,(1-c^2 x^2)^{5/2}\,\text{PolyLog}\left[2,\,-e^{2\, i\,\text{ArcSin}[c\, x]}\right]}{3\, c\,(d+c\, d\, x)^{5/2}\,(e-c\, e\, x)^{5/2}}$$

Result (type 4, 1243 leaves):

$$\frac{1}{c}\sqrt{-e\,(-1+c\, x)}\,\sqrt{d\,(1+c\, x)}$$

$$\left(\frac{a^2}{12\, d^3 e^3\,(-1+c\, x)^2}-\frac{a^2}{3\, d^3 e^3\,(-1+c\, x)}-\frac{a^2}{12\, d^3 e^3\,(1+c\, x)^2}-\frac{a^2}{3\, d^3 e^3\,(1+c\, x)}\right)+$$

$$\frac{1}{c\,d^2\,e^2}\,b^2\left(\left(\text{ArcSin}[c\,x]^2\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\Big/\right.$$

$$\left(6\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)-$$

$$\left(\text{ArcSin}[c\,x]\,(2+\text{ArcSin}[c\,x])\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(12\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)+$$

$$\left((-2+\text{ArcSin}[c\,x])\,\text{ArcSin}[c\,x]\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(12\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)+$$

$$\left(4\sqrt{2}\left(\frac{1}{4}\,e^{-\frac{i\pi}{4}}\,\text{ArcSin}[c\,x]^2-\frac{1}{\sqrt{2}}\left(-\frac{3}{4}\,i\,\pi\,\text{ArcSin}[c\,x]-2\left(-\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)\right.\right.\right.$$

$$\text{Log}\left[1-e^{2\,i\left(-\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)}\right]-\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]-$$

$$\left.\left.\frac{1}{2}\pi\,\text{Log}\left[-\text{Sin}\left[\frac{\pi}{4}-\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\left(-\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)}\right]\right)\right)$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\right.$$

$$\left.\left.\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/\left(3\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\right)-$$

$$\left(4\sqrt{2}\left(\frac{1}{4}\,e^{\frac{i\pi}{4}}\,\text{ArcSin}[c\,x]^2+\frac{1}{\sqrt{2}}\left(-\frac{1}{4}\,i\,\pi\,\text{ArcSin}[c\,x]-2\left(\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)\right.\right.\right.$$

$$\text{Log}\left[1-e^{2\,i\left(\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)}\right]-\pi\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+\pi\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+$$

$$\left.\left.\frac{1}{2}\pi\,\text{Log}\left[\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\left(\frac{\pi}{4}+\frac{1}{2}\text{ArcSin}[c\,x]\right)}\right]\right)\right)$$

$$\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\right.$$

$$\left.\left.\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/\left(3\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\right)+$$

$$\left(\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/$$

$$\left(6\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)^2\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\right.\right.$$

$$\left.\left.2\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/\left(3\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\right)+$$

$$\left(\left(\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\left(\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]+\right.\right.$$

$$\left.\left.2\,\text{ArcSin}[c\,x]^2\,\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\,x]\right]\right)\right)\Big/\left(3\sqrt{d\,(1+c\,x)}\,\sqrt{e-c\,e\,x}\right)+$$

$$\left(a\, b \left(-1+\frac{3\, c\, x\, \text{ArcSin}[c\, x]}{\sqrt{1-c^2 x^2}}+2\, \text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right]+2\, \text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right]+2\, \text{Cos}[2\, \text{ArcSin}[c\, x]] \left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]-\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right]+\text{Log}\left[\text{Cos}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]+\text{Sin}\left[\frac{1}{2}\text{ArcSin}[c\, x]\right]\right]\right)+\frac{\text{ArcSin}[c\, x]\, \text{Sin}[3\, \text{ArcSin}[c\, x]]}{\sqrt{1-c^2 x^2}}\right)\right) \Big/ \left(3\, c\, d^2 e^2 \sqrt{d\, (1+c\, x)}\, \sqrt{e-c\, e\, x}\, \sqrt{1-c^2 x^2}\right)$$

Problem 588: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 55 leaves, 2 steps):

$$\frac{\sqrt{1-c^2 x^2}\, (a+b\, \text{ArcSin}[c\, x])^3}{3\, b\, c\, \sqrt{d+c\, d\, x}\, \sqrt{e-c\, e\, x}}$$

Result (type 3, 159 leaves):

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

Problem 591: Result more than twice size of optimal antiderivative.

$$\int \frac{x^2\, (a+b\, \text{ArcSin}[c\, x])^2}{(d+c\, d\, x)^{3/2}\, (e-c\, e\, x)^{3/2}}\, dx$$

Optimal (type 4, 295 leaves, 8 steps):

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

Result (type 4, 636 leaves):

$$\frac{1}{3\,c^3\,d^{3/2}\,e^2\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}}\left(3\,a^2\,c\,\sqrt{d}\,e\,x+3\,a^2\,\sqrt{e}\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}\,\text{ArcTan}\left[\frac{c\,x\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}}{\sqrt{d}\,\sqrt{e}\,\left(-1+c^2\,x^2\right)}\right]+\right.$$
$$3\,a\,b\,\sqrt{d}\,e\,\left(2\,c\,x\,\text{ArcSin}[c\,x]+\sqrt{1-c^2\,x^2}\,\left(-\text{ArcSin}[c\,x]^2+2\,\left(\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\right.\right.\right.\right.$$
$$\left.\left.\left.\left.\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]\right)\right)\right)+$$
$$b^2\,\sqrt{d}\,e\,\left(6\,i\,\pi\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]+3\,c\,x\,\text{ArcSin}[c\,x]^2-3\,i\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]^2-\right.$$
$$\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]^3+12\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+$$
$$3\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$3\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+6\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$12\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+3\,\pi\,\sqrt{1-c^2\,x^2}$$
$$\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]-3\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]-$$
$$\left.\left.6\,i\,\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,\,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-6\,i\,\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,\,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\right)\right)$$

Problem 593: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 217 leaves, 7 steps):

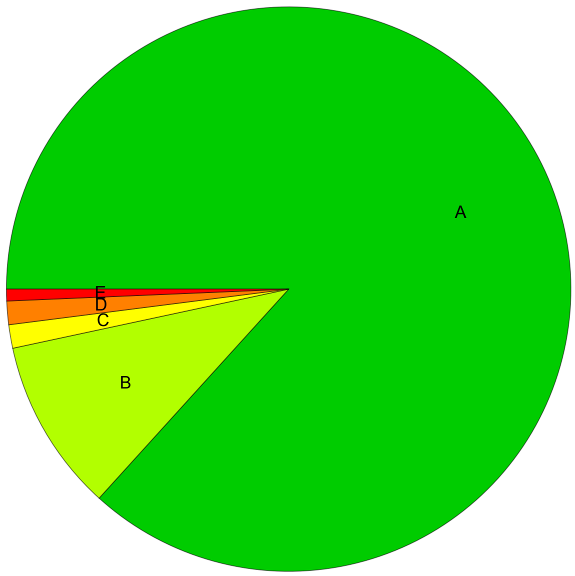
$$\frac{x\,\left(1-c^2\,x^2\right)\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}-\frac{i\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\right)^2}{c\,\left(d+c\,d\,x\right)^{3/2}\,\left(e-c\,e\,x\right)^{3/2}}+$$
$$\frac{2\,b\,\left(1-c^2\,x^2\right)^{3/2}\,\left(a+b\,\text{ArcSin}[c\,x]\righ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

Result (type 4, 550 leaves):

$$\frac{1}{c\,d\,e\,\sqrt{d+c\,d\,x}\,\sqrt{e-c\,e\,x}}\Bigg(a^2\,c\,x+2\,a\,b\,c\,x\,\text{ArcSin}[c\,x]+2\,i\,b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]+b^2\,c\,x\,\text{ArcSin}[c\,x]^2-$$
$$i\,b^2\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]^2+4\,b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1+e^{-i\,\text{ArcSin}[c\,x]}\right]+$$
$$b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]+2\,b^2\,\sqrt{1-c^2\,x^2}\,\text{ArcSin}[c\,x]\,\text{Log}\left[1+i\,e^{i\,\text{ArcSin}[c\,x]}\right]-$$
$$4\,b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[-\text{Cos}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]+$$
$$2\,a\,b\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]-\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]+$$
$$2\,a\,b\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]+\text{Sin}\left[\frac{1}{2}\,\text{ArcSin}[c\,x]\right]\right]-$$
$$b^2\,\pi\,\sqrt{1-c^2\,x^2}\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,\left(\pi+2\,\text{ArcSin}[c\,x]\right)\right]\right]-$$
$$2\,i\,b^2\,\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,-i\,e^{i\,\text{ArcSin}[c\,x]}\right]-2\,i\,b^2\,\sqrt{1-c^2\,x^2}\,\text{PolyLog}\left[2,i\,e^{i\,\text{ArcSin}[c\,x]}\right]\Bigg)$$

Summary of Integration Test Results

595 integration problems



A - 516 optimal antiderivatives

B - 59 more than twice size of optimal antiderivatives

C - 8 unnecessarily complex antiderivatives

D - 8 unable to integrate problems

E - 4 integration timeouts