"FRV(3,4)"

$$\left[x \mapsto \frac{45\sqrt{3}\sqrt[4]{\sqrt{x}}}{64\,(3/4\,x+1)^{7/2}}\right]$$

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = 90\,\frac{\sqrt{3}}{\sqrt[4]{x}\,(3\,\sqrt{x}+4)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3\,\frac{x^{3/4}\,(3\,\sqrt{x}+10)\,\sqrt{3}}{(3\,\sqrt{x}+4)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \left(RootOf\left(\left(243\,s^2-243\right)\,\_Z^{10} + \left(1620\,s^2-1620\right)\,\_Z^8 + \left(4320\,s^2-2700\right)\,\_Z^6 + 576\right.\right.\right.$$

Survivor Function

$$S(x) = -\frac{9\,x^{5/4}\sqrt{3} - 9\,\sqrt{3\,\sqrt{x}+4}x + 30\,x^{3/4}\sqrt{3} - 24\,\sqrt{3\,\sqrt{x}+4}\sqrt{x} - 16\,\sqrt{3\,\sqrt{x}+4}}{(3\,\sqrt{x}+4)^{5/2}}$$

Hazard Function

$$h(x) = -90\,\frac{\sqrt{3}}{\sqrt[4]{x}\,(3\,\sqrt{x}+4)\left(9\,x^{5/4}\sqrt{3} - 9\,\sqrt{3\,\sqrt{x}+4}x + 30\,x^{3/4}\sqrt{3} - 24\,\sqrt{3\,\sqrt{x}+4}\sqrt{x} - 16\,\sqrt{3}\right.}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \frac{2^{1+4\,r}3^{-2\,r}\Gamma\left(2-2\,r\right)\Gamma\left(2\,r+3/2\right)}{\sqrt{\pi}}$$

1

Moment Generating Function

$$3/2 \, \frac{\sqrt{6}}{\pi^{3/2} \, (-t)^{3/4}} G_{2,3}^{3,2}\left(-\frac{16\,t}{9} \, \Big|\, {}^{1/2,1}_{9/4,7/4,3/4}\right)_1$$

$$t \mapsto \sqrt{t}$$

Probability Distribution Function

$$f(x) = 360 \, \frac{\sqrt{3}x \, |x|}{(3\,x^2 + 4)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3 \, \frac{x^3 \, (3\,x^2 + 10) \, \sqrt{3}}{(3\,x^2 + 4)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto RootOf\left((243\,s^2 - 243)\,\_Z^{10} + (1620\,s^2 - 1620)\,\_Z^8 + (4320\,s^2 - 2700)\,\_Z^6 + 5760\right.$$

Survivor Function

$$S(x) = \frac{-9\,\sqrt{3}x^5 + 9\,\sqrt{3\,x^2 + 4}x^4 - 30\,x^3\sqrt{3} + 24\,\sqrt{3\,x^2 + 4}x^2 + 16\,\sqrt{3\,x^2 + 4}}{(3\,x^2 + 4)^{5/2}}$$

Hazard Function

$$h(x) = 360 \, \frac{\sqrt{3}x \, |x|}{(3\,x^2 + 4)\left(-9\,\sqrt{3}x^5 + 9\,\sqrt{3\,x^2 + 4}x^4 - 30\,x^3\sqrt{3} + 24\,\sqrt{3\,x^2 + 4}x^2 + 16\,\sqrt{3\,x^2 + 4}\right)}$$

Mean

$$mu = 2/3\,\sqrt{3}$$

Variance

$$sigma^2 = 2/3$$

Moment Function

$$m(x) = \int_0^\infty 360 \, \frac{x^r \, \sqrt{3}x \, |x|}{(3\,x^2 + 4)^{7/2}} \, \mathrm{d}x$$

Moment Generating Function

$$-1/9\,t\left(2\,t^2\sqrt{3}\pi\,\mathbf{H}_1\left(2/3\,t\sqrt{3}\right)-2\,\pi\,\sqrt{3}Y_1\left(-2/3\,t\sqrt{3}\right)t^2+3\,\sqrt{3}\pi\,\mathbf{H}_1\left(2/3\,t\sqrt{3}\right)-3\,\sqrt{3}\pi\,Y_1\left(-\right.\right.$$

_____ -

$$t \mapsto t^{-1}$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{x^{-1}}x}{(4\,x+3)^3}\frac{1}{\sqrt{\frac{4\,x+3}{x}}}$$

Cumulative Distribution Function

$$F(x) = \frac{16\,x^2\sqrt{4\,x+3}-30\,\sqrt{3}x+24\,x\sqrt{4\,x+3}-9\,\sqrt{3}+9\,\sqrt{4\,x+3}}{\sqrt{4\,x+3}\,(16\,x^2+24\,x+9)}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto 1/4\left(RootOf\left((2\,s-2)\,\_Z^5+15\,\sqrt{3}\_Z^2-27\,\sqrt{3}\right)\right)^2 - 3/4]$$

Survivor Function

$$S(x) = 3\,\frac{\sqrt{3}\,(10\,x+3)}{\sqrt{4\,x+3}\,(16\,x^2+24\,x+9)}$$

Hazard Function

$$h(x) = 60\,\frac{x\sqrt{x^{-1}}}{(10\,x+3)\sqrt{4\,x+3}}\frac{1}{\sqrt{\frac{4\,x+3}{x}}}$$

Mean

$$mu = 3$$

Variance

$$sigma^2 = \infty$$

Moment Function

$$m(x) = \int_0^\infty 180\,\frac{x^r\sqrt{3}\sqrt{x^{-1}}x}{(4\,x+3)^3}\frac{1}{\sqrt{\frac{4\,x+3}{x}}}\,\mathrm{d}x$$

3

Moment Generating Function

$$\lim_{x \to \infty} -1/16 \frac{144\sqrt{3}\,\text{erf}\left(1/2\sqrt{-t}\sqrt{4x+3}\right)e^{-3/4t}t^3x^2\sqrt{4x+3}\sqrt{\pi}-144\sqrt{3}e^{-3/4t}\text{erf}\left(1/2\sqrt{3}\sqrt{-t}\right)}{}$$

$$\rule{12cm}{0.4pt}-$$

$$t \mapsto \arctan(t)$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{\tan(x)}\left(1+(\tan(x))^2\right)}{(3\,\tan(x)+4)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3\,\frac{\sin(x)\,(3\,\sin(x)+10\,\cos(x))\,\sqrt{3}}{(3\,\sin(x)+4\,\cos(x))^2}\sqrt{\frac{\sin(x)}{\cos(x)}}\,\frac{1}{\sqrt{\frac{3\,\sin(x)+4\,\cos(x)}{\cos(x)}}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \arctan\left(\left(RootOf\left(\left(243\,s^2-243\right)\_Z^{10}+\left(1620\,s^2-1620\right)\_Z^8+\left(4320\,s^2-2700\right)\_Z\right.\right.\right.\right.$$

Survivor Function

$$S(x) = -\frac{1}{9+7\,(\cos(x))^2+24\,\sin(x)\cos(x)}\left(30\,\sqrt{\frac{\sin(x)}{\cos(x)}}\sin(x)\,\sqrt{3}\cos(x)-9\,\sqrt{\frac{\sin(x)}{\cos(x)}}\sqrt{3}\,(c\right.$$

Hazard Function

$$h(x) = 180\,\cos(x)\,\sqrt{3}\left(9+7\,(\cos(x))^2+24\,\sin(x)\cos(x)\right)\sqrt{\frac{\sin(x)}{\cos(x)}}\left(2373\,\sin(x)\,(\cos(x))^4\,\sqrt{3}\right.$$

Mean

$$mu = 180\,\sqrt{3}\int_0^{\pi/2}\frac{x\sqrt{\tan(x)}\left(1+(\tan(x))^2\right)}{(3\,\tan(x)+4)^{7/2}}\,dx$$

Variance

$$sigma^2 = 180\,\sqrt{3}\int_0^{\pi/2}\frac{x^2\sqrt{\tan(x)}\left(1+(\tan(x))^2\right)}{(3\,\tan(x)+4)^{7/2}}\,dx-97200\left(\int_0^{\pi/2}\frac{x\sqrt{\tan(x)}\left(1+(\tan(x))^2\right)}{(3\,\tan(x)+4)^{7/2}}\right.$$

4

Moment Function

$$m(x) = \int_0^{\pi/2} 180 \, \frac{x^r \sqrt{3}\sqrt{\tan(x)}\left(1 + (\tan(x))^2\right)}{(3\tan(x) + 4)^{7/2}} \, dx$$

Moment Generating Function

$$180\sqrt{3} \int_0^{\pi/2} \frac{e^{tx}\sqrt{\tan(x)}\left(1 + (\tan(x))^2\right)}{(3\tan(x) + 4)^{7/2}} \, dx_1$$

_____ -

$$t \mapsto e^t$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{\ln(x)}\sqrt{3}}{(3\ln(x) + 4)^{7/2} \, x}$$

Cumulative Distribution Function

$$F(x) = 3 \, \frac{\sqrt{3}\,(\ln(x))^{3/2}\,(3\ln(x) + 10)}{(3\ln(x) + 4)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto e^{\left(RootOf\left(\left(243\,s^2 - 243\right)\_Z^{10} + \left(1620\,s^2 - 1620\right)\_Z^8 + \left(4320\,s^2 - 2700\right)\_Z^6 + 5760\,s^2\,\_Z^4 + 3840\,s^2\,\_Z^2 + 1024\,s^2\right)\right)^2}\right]$$

Survivor Function

$$S(x) = -\frac{9\sqrt{3}\,(\ln(x))^{5/2} + 30\sqrt{3}\,(\ln(x))^{3/2} - 9\,(\ln(x))^2\,\sqrt{3\ln(x) + 4} - 24\ln(x)\sqrt{3\ln(x) + 4}}{(3\ln(x) + 4)^{5/2}}$$

Hazard Function

$$h(x) = -180 \, \frac{\sqrt{\ln(x)}\sqrt{3}}{(3\ln(x) + 4)\,x\left(9\sqrt{3}\,(\ln(x))^{5/2} + 30\sqrt{3}\,(\ln(x))^{3/2} - 9\,(\ln(x))^2\,\sqrt{3\ln(x) + 4} - 24\right.}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_1^\infty 180 \, \frac{e^{tx} \sqrt{3} \sqrt{\ln(x)}}{(3 \ln(x) + 4)^{7/2} \, x} \, dx_1$$

—— -

$$t \mapsto \ln(t)$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{3} e^{3/2 \, x}}{(3 \, e^x + 4)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3 \, \frac{(3 \, e^x + 10) \sqrt{3} e^{3/2 \, x}}{(3 \, e^x + 4)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto 2 \ln \left(RootOf \left(\left(243 \, s^2 - 243 \right) \_Z^{10} + \left(1620 \, s^2 - 1620 \right) \_Z^8 + \left(4320 \, s^2 - 2700 \right) \_Z^6 + \right. \right.$$

Survivor Function

$$S(x) = -\frac{9 \sqrt{3} e^{5/2 \, x} - 9 \, e^{2 \, x} \sqrt{3 \, e^x + 4} + 30 \sqrt{3} e^{3/2 \, x} - 24 \, e^x \sqrt{3 \, e^x + 4} - 16 \sqrt{3 \, e^x + 4}}{(3 \, e^x + 4)^{5/2}}$$

Hazard Function

$$h(x) = -180 \, \frac{\sqrt{3} e^{3/2 \, x}}{(3 \, e^x + 4) \left(9 \sqrt{3} e^{5/2 \, x} - 9 \, e^{2 \, x} \sqrt{3 \, e^x + 4} + 30 \sqrt{3} e^{3/2 \, x} - 24 \, e^x \sqrt{3 \, e^x + 4} - 16 \sqrt{3 \, e^x +}}$$

Mean

$$mu = \int_{-\infty}^\infty 540 \, \frac{x e^{3/2 \, x}}{(3 \, e^x + 4)^3 \sqrt{9 \, e^x + 12}} \, dx$$

6

Variance

$$sigma^2 = \int_{-\infty}^{\infty} 540 \, \frac{x^2 \mathrm{e}^{3/2\,x}}{\left(3\,\mathrm{e}^x + 4\right)^3 \sqrt{9\,\mathrm{e}^x + 12}} \, \mathrm{d}x - \left(\int_{-\infty}^{\infty} 540 \, \frac{x \mathrm{e}^{3/2\,x}}{\left(3\,\mathrm{e}^x + 4\right)^3 \sqrt{9\,\mathrm{e}^x + 12}} \, \mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 180 \, \frac{x^r \sqrt{3}\mathrm{e}^{3/2\,x}}{\left(3\,\mathrm{e}^x + 4\right)^{7/2}} \, \mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 540 \, \frac{\mathrm{e}^{1/2\,x(2\,t+3)}}{\left(3\,\mathrm{e}^x + 4\right)^3 \sqrt{9\,\mathrm{e}^x + 12}} \, \mathrm{d}x_1$$

_____ -

$$t \mapsto \mathrm{e}^{-t}$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{3}\sqrt{-\ln(x)}}{\left(-3\,\ln(x) + 4\right)^{7/2} x}$$

Cumulative Distribution Function

$$F(x) = \begin{cases} -\frac{9\sqrt{3}(-\ln(x))^{5/2} + 30\sqrt{3}(-\ln(x))^{3/2} - 9\,(\ln(x))^2 \sqrt{-3\,\ln(x)+4} + 24\,\ln(x)\sqrt{-3\,\ln(x)+4} - 16\sqrt{-3\,\ln(x)+4}}{(-3\,\ln(x)+4)^{5/2}} & x \leq \\ \infty + i\infty & \mathrm{e}^{4/3} \end{cases}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \mathrm{e}^{-\left(RootOf\left(\left(243\,s^2 - 486\,s\right)\_Z^{10} + \left(1620\,s^2 - 3240\,s\right)\_Z^8 + \left(4320\,s^2 - 8640\,s + 1620\right)\_Z^6 + \left(5760\,s^2 - 11520\,s + 5760\right)\_Z\right.}\right.}$$

Survivor Function

$$S(x) = \begin{cases} -3 \, \frac{\sqrt{3}(-\ln(x))^{3/2}(3\,\ln(x)-10)}{(-3\,\ln(x)+4)^{5/2}} & x \leq \mathrm{e}^{4/3} \\ \infty + i\infty & \mathrm{e}^{4/3} < x \end{cases}$$

Hazard Function

$$h(x) = \begin{cases} -60 \, \frac{1}{\ln(x)(3\,\ln(x)-4)x(3\,\ln(x)-10)} & x \leq \mathrm{e}^{4/3} \\ 0 & \mathrm{e}^{4/3} < x \end{cases}$$

Mean

$$mu = -1/27\,\sqrt{3}\sqrt{\pi}e^{2/3}\left(187\,W_{0,\,-1}\left(4/3\right) - 120\,W_{1,\,-1}\left(4/3\right)\right)$$

Variance

$$sigma^2 = -\frac{69938\,\pi^{3/2}e^{4/3}\left(W_{0,\,-1}\left(4/3\right)\right)^2 - 89760\,\pi^{3/2}e^{4/3}W_{0,\,-1}\left(4/3\right)W_{1,\,-1}\left(4/3\right) + 28800\,\pi^{3/2}e^4}{486\,\sqrt{\pi}}$$

Moment Function

$$m(x) = \frac{\sqrt{3}G_{1,2}^{2,1}\left(4/3\,r\,\Big|\,{0 \atop 5/2,1/2}\right)}{\sqrt{r}\sqrt{\pi}}$$

Moment Generating Function

$$180\,\sqrt{3}\int_0^1 \frac{e^{tx}\sqrt{-\ln\left(x\right)}}{\left(-3\,\ln\left(x\right) + 4\right)^{7/2}x}\,\mathrm{d}x_1$$

$$t \mapsto -\ln\left(t\right)$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}e^{-3/2\,x}}{\left(3\,e^{-x} + 4\right)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = -\frac{-64\,e^{3\,x} + 30\,\sqrt{3}\sqrt{3 + 4\,e^x}e^x - 144\,e^{2\,x} + 9\,\sqrt{3 + 4\,e^x}\sqrt{3} - 108\,e^x - 27}{\left(3 + 4\,e^x\right)^3}$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 3\,\frac{\sqrt{3}\left(10\,e^x + 3\right)}{\left(3 + 4\,e^x\right)^{5/2}}$$

Hazard Function

$$h(x) = 60\,\frac{e^{-3/2\,x}\left(3 + 4\,e^x\right)^{5/2}}{\left(\left(3 + 4\,e^x\right)e^{-x}\right)^{7/2}\left(10\,e^x + 3\right)}$$

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Mean

$$mu = \int_{-\infty}^{\infty} 540 \, \frac{x e^{-3/2\, x}}{(3\, e^{-x} + 4)^3 \, \sqrt{9\, e^{-x} + 12}} \, \mathrm{d}x$$

Variance

$$sigma^2 = \int_{-\infty}^{\infty} 540 \, \frac{x^2 e^{-3/2\, x}}{(3\, e^{-x} + 4)^3 \, \sqrt{9\, e^{-x} + 12}} \, \mathrm{d}x - \left(\int_{-\infty}^{\infty} 540 \, \frac{x e^{-3/2\, x}}{(3\, e^{-x} + 4)^3 \, \sqrt{9\, e^{-x} + 12}} \, \mathrm{d}x \right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 180 \, \frac{x^r \sqrt{3} e^{-3/2\, x}}{(3\, e^{-x} + 4)^{7/2}} \, \mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 540 \, \frac{e^{1/2\, x(2\, t - 3)}}{(3\, e^{-x} + 4)^3 \, \sqrt{9\, e^{-x} + 12}} \, \mathrm{d}x_1$$

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$$t \mapsto \ln(t + 1)$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{e^x - 1}\sqrt{3} e^x}{(3\, e^x + 1)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3 \, \frac{\sqrt{e^x - 1}\, (3\, e^{2\, x} + 4\, e^x - 7)\, \sqrt{3}}{(3\, e^x + 1)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \ln\left(\left(RootOf\left((243\, s^2 - 243)\, \_Z^{10} + (1620\, s^2 - 1620)\, \_Z^8 + (4320\, s^2 - 2700)\, \_Z^6 + \right.\right.\right.$$

Survivor Function

$$S(x) = -\frac{9\, \sqrt{e^x - 1}\sqrt{3} e^{2\, x} + 12\, \sqrt{e^x - 1}\sqrt{3} e^x - 9\, e^{2\, x}\sqrt{3\, e^x + 1} - 21\, \sqrt{e^x - 1}\sqrt{3} - 6\, e^x\sqrt{3\, e^x + 1}}{(3\, e^x + 1)^{5/2}}$$

Hazard Function

$$h(x) = -180 \, \frac{\sqrt{e^x - 1}\sqrt{3}e^x}{(3\,e^x + 1)\left(9\,\sqrt{e^x - 1}\sqrt{3}e^{2\,x} + 12\,\sqrt{e^x - 1}\sqrt{3}e^x - 9\,e^{2\,x}\sqrt{3\,e^x + 1} - 21\,\sqrt{e^x - 1}\sqrt{3} - \right.}$$

Mean

$$mu = \int_0^\infty 180 \, \frac{x e^x \sqrt{3\,e^x - 3}}{(3\,e^x + 1)^{7/2}} \, dx$$

Variance

$$sigma^2 = \int_0^\infty 180 \, \frac{x^2 e^x \sqrt{3\,e^x - 3}}{(3\,e^x + 1)^{7/2}} \, dx - \left(\int_0^\infty 180 \, \frac{x e^x \sqrt{3\,e^x - 3}}{(3\,e^x + 1)^{7/2}} \, dx \right)^2$$

Moment Function

$$m(x) = \int_0^\infty 180 \, \frac{x^r \sqrt{3}\sqrt{e^x - 1}e^x}{(3\,e^x + 1)^{7/2}} \, dx$$

Moment Generating Function

$$\int_0^\infty 180 \, \frac{e^{x(t+1)}\sqrt{3\,e^x - 3}}{(3\,e^x + 1)^{7/2}} \, dx_1$$

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$$t \mapsto (\ln(2 + t))^{-1}$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{e^{x^{-1}} - 2}\sqrt{3}e^{x^{-1}}}{(3\,e^{x^{-1}} - 2)^{7/2} x^2}$$

Cumulative Distribution Function

$$F(x) = \frac{1}{(3\,e^{x^{-1}} - 2)^{5/2}} \left(6\,\sqrt{e^{x^{-1}} - 2}\sqrt{3}e^{x^{-1}} - 9\,\sqrt{e^{x^{-1}} - 2}\sqrt{3}e^{2\,x^{-1}} + 9\,e^{2\,x^{-1}}\sqrt{3\,e^{x^{-1}} - 2} + 24\,\sqrt{} \right.$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \left(-\ln(3) + \ln\left(\left(RootOf \left(2304 + (s^2 - 2\,s)\,\_Z^{10} + 60\,\_Z^6 - 80\,\_Z^4 - 960\,\_Z^2 \right) \right)^2 + 2 \right.\right.\right.$$

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Survivor Function

$$S(x) = 3\,\frac{\sqrt{e^{x^{-1}} - 2}\sqrt{3}}{\left(3\,e^{x^{-1}} - 2\right)^{5/2}}\left(3\,e^{2\,x^{-1}} - 2\,e^{x^{-1}} - 8\right)$$

Hazard Function

$$h(x) = 60\,\frac{e^{x^{-1}}}{\left(3\,e^{x^{-1}} - 2\right)x^2}\left(3\,e^{2\,x^{-1}} - 2\,e^{x^{-1}} - 8\right)^{-1}$$

Mean

$$mu = 180\int_0^{(\ln(2))^{-1}}\frac{e^{x^{-1}}\sqrt{3\,e^{x^{-1}} - 6}}{x\left(3\,e^{x^{-1}} - 2\right)^{7/2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = 180\int_0^{(\ln(2))^{-1}}\frac{e^{x^{-1}}\sqrt{3\,e^{x^{-1}} - 6}}{\left(3\,e^{x^{-1}} - 2\right)^{7/2}}\,\mathrm{d}x - 32400\left(\int_0^{(\ln(2))^{-1}}\frac{e^{x^{-1}}\sqrt{3\,e^{x^{-1}} - 6}}{x\left(3\,e^{x^{-1}} - 2\right)^{7/2}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}}180\,\frac{x^r\sqrt{3}\sqrt{e^{x^{-1}} - 2}\,e^{x^{-1}}}{\left(3\,e^{x^{-1}} - 2\right)^{7/2}x^2}\,\mathrm{d}x$$

Moment Generating Function

$$180\int_0^{(\ln(2))^{-1}}\frac{\sqrt{3\,e^{x^{-1}} - 6}}{\left(3\,e^{x^{-1}} - 2\right)^{7/2}x^2}e^{\frac{tx^2+1}{x}}\,\mathrm{d}x_1$$

$$t \mapsto \tanh(t)$$

Probability Distribution Function

$$f(x) = -180\,\frac{\sqrt{3}\sqrt{\operatorname{arctanh}(x)}}{\left(3\operatorname{arctanh}(x) + 4\right)^{7/2}\left(x^2 - 1\right)}$$

Cumulative Distribution Function

$$F(x) = 3\,\frac{\left(\operatorname{arctanh}(x)\right)^{3/2}\left(3\operatorname{arctanh}(x) + 10\right)\sqrt{3}}{\left(3\operatorname{arctanh}(x) + 4\right)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \tanh\left(\left(\mathit{RootOf}\left(\left(243\,s^2 - 243\right)\,\_Z^{10} + \left(1620\,s^2 - 1620\right)\,\_Z^8 + \left(4320\,s^2 - 2700\right)\,\_Z^6\right.\right.\right.$$

Survivor Function

$$S(x) = -\frac{9\,(\operatorname{arctanh}(x))^{5/2}\,\sqrt{3} - 9\,(\operatorname{arctanh}(x))^2\,\sqrt{3\operatorname{arctanh}(x) + 4} + 30\,(\operatorname{arctanh}(x))^{3/2}\,\sqrt{3} -}{(3\operatorname{arctanh}(x) + 4)^{5/2}}$$

Hazard Function

$$h(x) = 180\,\frac{\sqrt{3}\,\sqrt{}}{(3\operatorname{arctanh}(x) + 4)\,(x^2 - 1)\left(9\,(\operatorname{arctanh}(x))^{5/2}\,\sqrt{3} - 9\,(\operatorname{arctanh}(x))^2\,\sqrt{3\operatorname{arctanh}(x)}\right.}$$

Mean

$$mu = -180\,\sqrt{3}\int_0^1 \frac{\sqrt{\operatorname{arctanh}(x)}x}{(3\operatorname{arctanh}(x) + 4)^{7/2}\,(x^2 - 1)}\,\mathrm{d}x$$

Variance

$$sigma^2 = -180\,\sqrt{3}\int_0^1 \frac{\sqrt{\operatorname{arctanh}(x)}x^2}{(3\operatorname{arctanh}(x) + 4)^{7/2}\,(x^2 - 1)}\,\mathrm{d}x - 97200\left(\int_0^1 \frac{\sqrt{\operatorname{arctanh}(x)}x}{(3\operatorname{arctanh}(x) + 4)^{7/2}\,(x^2 -}\right.$$

Moment Function

$$m(x) = \int_0^1 -180\,\frac{x^r\,\sqrt{3}\,\sqrt{\operatorname{arctanh}(x)}}{(3\operatorname{arctanh}(x) + 4)^{7/2}\,(x^2 - 1)}\,\mathrm{d}x$$

Moment Generating Function

$$-180\,\sqrt{3}\int_0^1 \frac{\mathrm{e}^{tx}\,\sqrt{\operatorname{arctanh}(x)}}{(3\operatorname{arctanh}(x) + 4)^{7/2}\,(x^2 - 1)}\,\mathrm{d}x_1$$

$$t \mapsto \sinh(t)$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{\operatorname{arcsinh}(x)}}{(3\operatorname{arcsinh}(x) + 4)^{7/2}\,\sqrt{x^2 + 1}}$$

Cumulative Distribution Function

$$F(x) = -3\,\frac{\sqrt{3}\left(3\ln\left(-x+\sqrt{x^2+1}\right)-10\right)\left(-\ln\left(-x+\sqrt{x^2+1}\right)\right)^{3/2}}{\left(-3\ln\left(-x+\sqrt{x^2+1}\right)+4\right)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto 1/2\,\mathrm{e}^{\left(RootOf\left(\left(243\,s^2-243\right)\_Z^{10}+\left(1620\,s^2-1620\right)\_Z^8+\left(4320\,s^2-2700\right)\_Z^6+5760\,s^2\_Z^4+3840\,s^2\_Z^2+1024\,s^2\right.\right.}$$

Survivor Function

$$S(x) = -\frac{9\sqrt{3}\left(-\ln\left(-x+\sqrt{x^2+1}\right)\right)^{5/2}+30\sqrt{3}\left(-\ln\left(-x+\sqrt{x^2+1}\right)\right)^{3/2}-9\left(\ln\left(-x+\sqrt{x^2}\right.\right.}{}$$

Hazard Function

$$h(x) = -180\,\frac{}{\left(3\operatorname{arcsinh}(x)+4\right)^{7/2}\sqrt{x^2+1}\left(9\sqrt{3}\left(-\ln\left(-x+\sqrt{x^2+1}\right)\right)^{5/2}+30\sqrt{3}\left(-\ln\left(-x\right.\right.\right.}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_0^\infty 180\,\frac{\mathrm{e}^{tx}\sqrt{3}\sqrt{\operatorname{arcsinh}(x)}}{\left(3\operatorname{arcsinh}(x)+4\right)^{7/2}\sqrt{x^2+1}}\,\mathrm{d}x_1$$

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$$t \mapsto \operatorname{arcsinh}(t)$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{\left(3\sinh(x)+4\right)^{7/2}}$$

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Cumulative Distribution Function

$$F(x) = -3\,\frac{\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\left(-3\,\mathrm{e}^{4\,x}-20\,\mathrm{e}^{3\,x}+6\,\mathrm{e}^{2\,x}+20\,\mathrm{e}^{x}-3\right)}{\left(3\,\mathrm{e}^{2\,x}+8\,\mathrm{e}^{x}-3\right)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [ln \circ s \mapsto RootOf\left(\left(243\,s^2-243\right)\_Z^{10}+\left(3240\,s^2-3240\right)\_Z^{9}+\left(16065\,s^2-9585\right)\_Z^{8}+\big($$

Survivor Function

$$S(x) = \frac{60\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{x}+18\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{2\,x}-9\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{4\,x}-60\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{3\,x}-9\,\sqrt{3}\sqrt{}}{}$$

Hazard Function

$$h(x) = -180\,\frac{}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}\left(9\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{4\,x}+60\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{3\,x}-18\,\sqrt{3}\sqrt{\mathrm{e}^{2\,x}-1}\mathrm{e}^{2\,x}-6\right.}$$

Mean

$$mu = \int_{0}^{\infty}180\,\frac{x\sqrt{3}\sqrt{\sinh\left(x\right)}\cosh\left(x\right)}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_{0}^{\infty}180\,\frac{x^2\sqrt{3}\sqrt{\sinh\left(x\right)}\cosh\left(x\right)}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}}\,\mathrm{d}x - \left(\int_{0}^{\infty}180\,\frac{x\sqrt{3}\sqrt{\sinh\left(x\right)}\cosh\left(x\right)}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}}\,\mathrm{d}x\right)^{2}$$

Moment Function

$$m(x) = \int_{0}^{\infty}180\,\frac{x^{r}\sqrt{3}\sqrt{\sinh\left(x\right)}\cosh\left(x\right)}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{0}^{\infty}180\,\frac{\mathrm{e}^{tx}\sqrt{3}\sqrt{\sinh\left(x\right)}\cosh\left(x\right)}{\left(3\,\sinh\left(x\right)+4\right)^{7/2}}\,\mathrm{d}x_1$$

$$t \mapsto \mathrm{csch}\left(t+1\right)$$

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Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{-1+\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

$$F(x) = 180\,\sqrt{3}\int_0^x \frac{\sqrt{-1+\operatorname{arccsch}(t)}}{\left(1+3\operatorname{arccsch}(t)\right)^{7/2}\sqrt{t^2+1}\,|t|}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 180\,\sqrt{3}\int_0^x \frac{\sqrt{-1+\operatorname{arccsch}(t)}}{\left(1+3\operatorname{arccsch}(t)\right)^{7/2}\sqrt{t^2+1}\,|t|}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -180\,\frac{\sqrt{3}\sqrt{-1+\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}\,|x|}\left(180\,\sqrt{3}\int_0^x \frac{\sqrt{-1+\operatorname{arccsch}(t)}}{\left(1+3\operatorname{arccsch}(t)\right)^{7/2}\sqrt{t^2+1}\,|t|}\,\mathrm{d}t -$$

Mean

$$mu = 180\int_0^{2\frac{e}{e^2-1}} \frac{\sqrt{-3+3\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = 180\int_0^{2\frac{e}{e^2-1}} \frac{x\sqrt{-3+3\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}}\,\mathrm{d}x - 32400\left(\int_0^{2\frac{e}{e^2-1}} \frac{\sqrt{-3+3\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{\,}}\right.$$

Moment Function

$$m(x) = \int_0^{2\left(e-e^{-1}\right)^{-1}} 180\,\frac{x^r\sqrt{3}\sqrt{-1+\operatorname{arccsch}(x)}}{\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}\,|x|}\,\mathrm{d}x$$

Moment Generating Function

$$180\int_0^{2\frac{e}{e^2-1}} \frac{e^{tx}\sqrt{-3+3\operatorname{arccsch}(x)}}{x\left(1+3\operatorname{arccsch}(x)\right)^{7/2}\sqrt{x^2+1}}\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{arccsch}(t+1)$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{3} \sinh(x) \cosh(x)}{(\sinh(x)+3)^3} \sqrt{-\frac{\sinh(x)-1}{\sinh(x)}} \, \frac{1}{\sqrt{\frac{\sinh(x)+3}{\sinh(x)}}}$$

Cumulative Distribution Function

$$F(x) = -\frac{99\sqrt{3}\sqrt{-\mathrm{e}^{2x}+2\,\mathrm{e}^{x}+1}\mathrm{e}^{4x}\sqrt{-\mathrm{e}^{4x}-4\,\mathrm{e}^{3x}+14\,\mathrm{e}^{2x}+4\,\mathrm{e}^{x}-1}-48\sqrt{3}\sqrt{-\mathrm{e}^{2x}+2\,\mathrm{e}^{x}+}}{}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[ln \circ s \mapsto RootOf\left(\left(s^2 - 2\,s + 1324\right) \_Z^{10} + \left(30\,s^2 - 60\,s - 5640\right) \_Z^9 + \left(355\,s^2 - 710\,s - \right.\right.\right.$$

Survivor Function

$$S(x) = -3 \, \frac{\sqrt{3}\sqrt{-\mathrm{e}^{2x}+2\,\mathrm{e}^{x}+1}\sqrt{-\mathrm{e}^{4x}-4\,\mathrm{e}^{3x}+14\,\mathrm{e}^{2x}+4\,\mathrm{e}^{x}-1}\left(33\,\mathrm{e}^{4x}-16\,\mathrm{e}^{3x}+8\,\mathrm{e}^{x}-\right.}{\sqrt{\mathrm{e}^{2x}+6\,\mathrm{e}^{x}-1}\sqrt{\mathrm{e}^{4x}+6\,\mathrm{e}^{3x}-2\,\mathrm{e}^{2x}-6\,\mathrm{e}^{x}+1}\sqrt{-\mathrm{e}^{4x}+2\,\mathrm{e}^{3x}+2\,\mathrm{e}^{2x}-2\,\mathrm{e}^{x}-1}\left(-\mathrm{e}^{4}\right.}$$

Hazard Function

$$h(x) = -60 \, \frac{\sqrt{\mathrm{e}^{2x}+6\,\mathrm{e}^{x}-1}\sqrt{\mathrm{e}^{4x}+6\,\mathrm{e}^{3x}-2\,\mathrm{e}^{2x}-6\,\mathrm{e}^{x}+1}\sqrt{-\mathrm{e}^{4x}+2\,\mathrm{e}^{3x}+2\,\mathrm{e}^{2x}}}{\sqrt{-\mathrm{e}^{2x}+2\,\mathrm{e}^{x}+1}\sqrt{-\mathrm{e}^{4x}-4\,\mathrm{e}^{3x}+14\,\mathrm{e}^{2x}+4\,\mathrm{e}^{x}-1}\left(-33\,\mathrm{e}^{4x}+16\,\mathrm{e}^{3x}-8\,\mathrm{e}^{x}+33\,\mathrm{e}^{2}\right.}$$

Mean

$$mu = 90\sqrt{3} \int_0^{\ln\left(1+\sqrt{2}\right)} \frac{x \sinh(2x)\sqrt{-\sinh(x)+1}}{\sqrt{\sinh(x)+3}\left(\sinh(x)(\cosh(x))^2 + 9(\cosh(x))^2 + 26\sinh(x)+18\right)}\,\mathrm{d}x$$

Variance

$$sigma^2 = 90\sqrt{3} \int_0^{\ln\left(1+\sqrt{2}\right)} \frac{x^2 \sinh(2x)\sqrt{-\sinh(x)+1}}{\sqrt{\sinh(x)+3}\left(\sinh(x)(\cosh(x))^2 + 9(\cosh(x))^2 + 26\sinh(x)+18\right)}$$

Moment Function

$$m(x) = \int_0^{\ln\left(1+\sqrt{2}\right)} 180 \, \frac{x^r\sqrt{3}\sinh(x)\cosh(x)}{(\sinh(x)+3)^3} \sqrt{-\frac{\sinh(x)-1}{\sinh(x)}} \, \frac{1}{\sqrt{\frac{\sinh(x)+3}{\sinh(x)}}}\,\mathrm{d}x$$

Moment Generating Function

$$90\sqrt{3}\int_0^{\ln\left(1+\sqrt{2}\right)}\frac{e^{tx}\sinh\left(2\,x\right)\sqrt{-\sinh\left(x\right)+1}}{\sqrt{\sinh\left(x\right)+3}\left(\sinh\left(x\right)\left(\cosh\left(x\right)\right)^2+9\left(\cosh\left(x\right)\right)^2+26\sinh\left(x\right)+18\right)}\,\mathrm{d}x_1$$

$$t\mapsto\left(\tanh\left(t+1\right)\right)^{-1}$$

Probability Distribution Function

$$f(x)=180\,\frac{\sqrt{-1+\operatorname{arctanh}\left(x^{-1}\right)}\sqrt{3}}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)^{7/2}\left(x^2-1\right)}$$

Cumulative Distribution Function

$$F(x)=-\frac{9\sqrt{-1+\operatorname{arctanh}\left(x^{-1}\right)}\sqrt{3}\left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2+12\sqrt{-1+\operatorname{arctanh}\left(x^{-1}\right)}\sqrt{3}\operatorname{arctanh}\left(x^{-1}\right)}{}$$

Inverse Cumulative Distribution Function

$$F^{-1}=\left[s\mapsto\left(\tanh\left(-1/3+1/3\left(RootOf\left(2304+\left(s^2-2\,s\right)\_Z^{10}+60\_Z^6-80\_Z^4-960\_Z^2\right)\right)\right)\right.$$

Survivor Function

$$S(x)=3\,\frac{\sqrt{-1+\operatorname{arctanh}\left(x^{-1}\right)}\sqrt{3}\left(3\left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2+4\operatorname{arctanh}\left(x^{-1}\right)-7\right)}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)^{5/2}}$$

Hazard Function

$$h(x)=60\,\frac{1}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)\left(3\left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2+4\operatorname{arctanh}\left(x^{-1}\right)-7\right)}$$

Mean

$$mu=180\int_1^{\frac{e^2+1}{e^2-1}}\frac{x\sqrt{-3+3\operatorname{arctanh}\left(x^{-1}\right)}}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)^{7/2}\left(x^2-1\right)}\,\mathrm{d}x$$

Variance

$$sigma^2=180\int_1^{\frac{e^2+1}{e^2-1}}\frac{x^2\sqrt{-3+3\operatorname{arctanh}\left(x^{-1}\right)}}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)^{7/2}\left(x^2-1\right)}\,\mathrm{d}x-32400\left(\int_1^{\frac{e^2+1}{e^2-1}}\frac{x\sqrt{-3+3\operatorname{arctanh}}}{\left(1+3\operatorname{arctanh}\left(x^{-1}\right)\right)^{7/}}\right.$$

Moment Function

$$m(x) = \int_1^{\frac{-e-e^{-1}}{-e+e^{-1}}} 180 \, \frac{x^r \sqrt{3} \sqrt{-1 + \operatorname{arctanh}\left(x^{-1}\right)}}{\left(1 + 3 \operatorname{arctanh}\left(x^{-1}\right)\right)^{7/2} \left(x^2 - 1\right)} \, \mathrm{d}x$$

Moment Generating Function

$$180 \int_1^{\frac{e^2+1}{e^2-1}} \frac{e^{tx} \sqrt{-3 + 3 \operatorname{arctanh}\left(x^{-1}\right)}}{\left(1 + 3 \operatorname{arctanh}\left(x^{-1}\right)\right)^{7/2} \left(x^2 - 1\right)} \, \mathrm{d}x_1$$

$$t \mapsto \left(\sinh\left(t + 1\right)\right)^{-1}$$

Probability Distribution Function

$$f(x) = 180 \, \frac{\sqrt{3} \sqrt{-1 + \operatorname{arcsinh}\left(x^{-1}\right)}}{\left(1 + 3 \operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2} \sqrt{x^2 + 1} \, |x|}$$

Cumulative Distribution Function

$$F(x) = -\frac{9 \sqrt{\ln\left(\sqrt{x^2+1}+1\right) - \ln\left(x\right) - 1} \sqrt{3} \left(\ln\left(\sqrt{x^2+1}+1\right)\right)^2 - 18 \sqrt{\ln\left(\sqrt{x^2+1}+1\right) - \ln}}{}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto e^{1/3 \, \frac{1}{s\left(RootOf\left(2304 + \left(s^2 - 2\,s\right)\_Z^{10} + 60\_Z^6 - 80\_Z^4 - 960\_Z^2\right) - 2\right)^2 \left(RootOf\left(2304 + \left(s^2 - 2\,s\right)\_Z^{10} + 60\_Z^6 - 80\_Z^4 - 960\_Z^2\right) + 2}}}\right.$$

Survivor Function

$$S(x) = 3 \, \frac{\sqrt{\ln\left(\sqrt{x^2+1}+1\right) - \ln\left(x\right) - 1} \sqrt{3} \left(3 \left(\ln\left(\sqrt{x^2+1}+1\right)\right)^2 - 6 \ln\left(\sqrt{x^2+1}+1\right) \ln\left(x\right)}{\left(1 + 3 \ln\left(\sqrt{x^2+1}+1\right) - 3 \ln\left(x\right)\right)^{5/2}}$$

Hazard Function

$$h(x) = 60 \, \frac{\sqrt{-1 + \operatorname{arcsinh}\left(x^{-1}\right)} \left(1 + 3 \ln\right.}{\left(1 + 3 \operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2} \sqrt{x^2 + 1} \, |x| \sqrt{\ln\left(\sqrt{x^2+1}+1\right) - \ln\left(x\right) - 1} \left(3 \left(\ln\left(\sqrt{x^2+1}+\right.\right.\right.}$$

Mean

$$mu = 180 \int_0^{2\frac{e}{e^2-1}} \frac{\sqrt{-3 + 3\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(1 + 3\operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2}\sqrt{x^2+1}}\, dx$$

Variance

$$sigma^2 = 180 \int_0^{2\frac{e}{e^2-1}} \frac{x\sqrt{-3 + 3\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(1 + 3\operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2}\sqrt{x^2+1}}\, dx - 32400 \left(\int_0^{2\frac{e}{e^2-1}} \frac{\sqrt{-3 + 3\operatorname{arcsinh}}}{\left(1 + 3\operatorname{arcsinh}\left(x^{-1}\right)\right)^{7}}\right.$$

Moment Function

$$m(x) = \int_0^{-2\left(-e+e^{-1}\right)^{-1}} 180\, \frac{x^r\sqrt{3}\sqrt{-1 + \operatorname{arcsinh}\left(x^{-1}\right)}}{\left(1 + 3\operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2}\sqrt{x^2+1}\,|x|}\, dx$$

Moment Generating Function

$$180 \int_0^{2\frac{e}{e^2-1}} \frac{e^{tx}\sqrt{-3 + 3\operatorname{arcsinh}\left(x^{-1}\right)}}{x\left(1 + 3\operatorname{arcsinh}\left(x^{-1}\right)\right)^{7/2}\sqrt{x^2+1}}\, dx_1$$

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$$t \mapsto \left(\operatorname{arcsinh}\left(t+1\right)\right)^{-1}$$

Probability Distribution Function

$$f(x) = 180\, \frac{\sqrt{3}\sqrt{-1 + \sinh\left(x^{-1}\right)}\cosh\left(x^{-1}\right)}{x^2\left(1 + 3\sinh\left(x^{-1}\right)\right)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 1/3\sqrt{3}\left(9\sqrt{3}e^{4x^{-1}}\sqrt{3e^{2x^{-1}} + 2e^{x^{-1}} - 3} - 27e^{4x^{-1}}\sqrt{e^{2x^{-1}} - 2e^{x^{-1}} - 1} + 12\sqrt{3}e^{3x^{-1}}\sqrt{3}\right.$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto \left(\ln\left(RootOf\left(\left(243\,s^2 - 486\,s\right)\_Z^{10} + \left(810\,s^2 - 1620\,s\right)\_Z^9 + \left(-135\,s^2 + 270\,s + 648\right)\right.\right.\right.\right.$$

Survivor Function

$$S(x) = -3\sqrt{3}\sqrt{e^{2x^{-1}} - 2e^{x^{-1}} - 1}\left(8e^{x^{-1}} + 34e^{2x^{-1}} - 3e^{4x^{-1}} - 8e^{3x^{-1}} - 3\right)\left(3e^{2x^{-1}} + 2e^{x^{-1}} - \right.$$

Hazard Function

$$h(x) = 60 \frac{\cosh\left(x^{-1}\right)\sqrt{-1+\sinh\left(x^{-1}\right)}}{x^2\left(1+3\,\sinh\left(x^{-1}\right)\right)^{7/2}}\left(3\,\mathrm{e}^{2\,x^{-1}}+2\,\mathrm{e}^{x^{-1}}-3\right)^{5/2}\frac{1}{\sqrt{\mathrm{e}^{2\,x^{-1}}-2\,\mathrm{e}^{x^{-1}}-1}}\left(3\,\mathrm{e}^{4\,x^{-1}}+\right.$$

Mean

$$mu = 180\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{\cosh\left(x^{-1}\right)\sqrt{-3+3\,\sinh\left(x^{-1}\right)}}{x\left(1+3\,\sinh\left(x^{-1}\right)\right)^{7/2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = 180\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{\cosh\left(x^{-1}\right)\sqrt{-3+3\,\sinh\left(x^{-1}\right)}}{\left(1+3\,\sinh\left(x^{-1}\right)\right)^{7/2}}\,\mathrm{d}x - 32400\left(\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{\cosh\left(x^{-1}\right)}{x\left(1+\right.}\right.$$

Moment Function

$$m(x) = \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}180\,\frac{x^r\sqrt{3}\sqrt{-1+\sinh\left(x^{-1}\right)}\cosh\left(x^{-1}\right)}{x^2\left(1+3\,\sinh\left(x^{-1}\right)\right)^{7/2}}\,\mathrm{d}x$$

Moment Generating Function

$$180\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{\mathrm{e}^{tx}\cosh\left(x^{-1}\right)\sqrt{-3+3\,\sinh\left(x^{-1}\right)}}{x^2\left(1+3\,\sinh\left(x^{-1}\right)\right)^{7/2}}\,\mathrm{d}x_1$$

$$t \mapsto \left(\mathrm{csch}\left(t\right)\right)^{-1}+1$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{\mathrm{arccsch}\left(\left(x-1\right)^{-1}\right)}}{\left(3\,\mathrm{arccsch}\left(\left(x-1\right)^{-1}\right)+4\right)^{7/2}\sqrt{x^2-2\,x+2}}$$

Cumulative Distribution Function

$$F(x) = 180\sqrt{3}\int_1^x\frac{\sqrt{\mathrm{arccsch}\left(\left(t-1\right)^{-1}\right)}}{\left(3\,\mathrm{arccsch}\left(\left(t-1\right)^{-1}\right)+4\right)^{7/2}\sqrt{t^2-2\,t+2}}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 180\sqrt{3}\int_1^x \frac{\sqrt{\operatorname{arccsch}\left((t-1)^{-1}\right)}}{\left(3\operatorname{arccsch}\left((t-1)^{-1}\right)+4\right)^{7/2}\sqrt{t^2-2\,t+2}}\,dt$$

Hazard Function

$$h(x) = -180\,\frac{\sqrt{3}\sqrt{\operatorname{arccsch}\left((x-1)^{-1}\right)}}{\left(3\operatorname{arccsch}\left((x-1)^{-1}\right)+4\right)^{7/2}\sqrt{x^2-2\,x+2}}\left(180\sqrt{3}\int_1^x \frac{\sqrt{\operatorname{arccsch}\left((t-\right.}}{\left(3\operatorname{arccsch}\left((t-1)^{-1}\right)+\right.}\right.$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_1^\infty 180\,\frac{e^{tx}\sqrt{3}\sqrt{\operatorname{arccsch}\left((x-1)^{-1}\right)}}{\left(3\operatorname{arccsch}\left((x-1)^{-1}\right)+4\right)^{7/2}\sqrt{x^2-2\,x+2}}\,dx_1$$

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$$t \mapsto \tanh\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = -180\,\frac{\sqrt{\left(\operatorname{arctanh}(x)\right)^{-1}}\sqrt{3}\operatorname{arctanh}(x)}{\left(3+4\operatorname{arctanh}(x)\right)^3\left(x^2-1\right)}\frac{1}{\sqrt{\frac{3+4\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}}$$

Cumulative Distribution Function

$$F(x) = -\frac{1}{9+24\operatorname{arctanh}(x)+16\left(\operatorname{arctanh}(x)\right)^2}\left(30\sqrt{\left(\operatorname{arctanh}(x)\right)^{-1}}\sqrt{3}\operatorname{arctanh}(x)-16\sqrt{\frac{3-}{}}\right.$$

Inverse Cumulative Distribution Function

$$F^{-1} = [\tanh \circ s \mapsto RootOf\left(\left(1024\, s^2 - 2048\, s + 1024\right) \_Z^5 + \left(3840\, s^2 - 7680\, s + 3840\right) \_Z^4 + \left(57\right.\right.$$

Survivor Function

$$S(x) = 3\,\frac{\sqrt{(\operatorname{arctanh}(x))^{-1}}\sqrt{3}\,(10\operatorname{arctanh}(x) + 3)}{9 + 24\operatorname{arctanh}(x) + 16\,(\operatorname{arctanh}(x))^2}\,\frac{1}{\sqrt{\frac{3 + 4\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}}$$

Hazard Function

$$h(x) = -60\,\frac{\operatorname{arctanh}(x)}{(10\operatorname{arctanh}(x) + 3)\,(x^2 - 1)\,(3 + 4\operatorname{arctanh}(x))}$$

Mean

$$mu = -180\,\sqrt{3}\int_0^1 \frac{x\operatorname{arctanh}(x)}{(3 + 4\operatorname{arctanh}(x))^{7/2}\,(x^2 - 1)}\,\mathrm{d}x$$

Variance

$$sigma^2 = -180\,\sqrt{3}\int_0^1 \frac{x^2\operatorname{arctanh}(x)}{(3 + 4\operatorname{arctanh}(x))^{7/2}\,(x^2 - 1)}\,\mathrm{d}x - 97200\left(\int_0^1 \frac{x\operatorname{arctanh}(x)}{(3 + 4\operatorname{arctanh}(x))^{7/2}\,(x^2 -\right.$$

Moment Function

$$m(x) = \int_0^1 -180\,\frac{x^r\sqrt{3}\sqrt{(\operatorname{arctanh}(x))^{-1}}\operatorname{arctanh}(x)}{(3 + 4\operatorname{arctanh}(x))^3\,(x^2 - 1)}\,\frac{1}{\sqrt{\frac{3 + 4\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}}\,\mathrm{d}x$$

Moment Generating Function

$$-180\,\sqrt{3}\int_0^1 \frac{e^{tx}\operatorname{arctanh}(x)}{(3 + 4\operatorname{arctanh}(x))^{7/2}\,(x^2 - 1)}\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{csch}\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = 180\,\frac{\sqrt{3}\sqrt{\operatorname{arccsch}(x)}}{(3 + 4\operatorname{arccsch}(x))^3\,\sqrt{x^2 + 1}\,|x|}\,\frac{1}{\sqrt{\frac{3 + 4\operatorname{arccsch}(x)}{\operatorname{arccsch}(x)}}}$$

Cumulative Distribution Function

$$F(x) = 180\sqrt{3}\int_0^x \frac{\sqrt{\text{arccsch}\,(t)}}{(3 + 4\,\text{arccsch}\,(t))^3\,\sqrt{t^2 + 1}\,|t|}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(t)}{\text{arccsch}(t)}}}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 180\sqrt{3}\int_0^x \frac{\sqrt{\text{arccsch}\,(t)}}{(3 + 4\,\text{arccsch}\,(t))^3\,\sqrt{t^2 + 1}\,|t|}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(t)}{\text{arccsch}(t)}}}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -180\,\frac{\sqrt{3}\sqrt{\text{arccsch}\,(x)}}{(3 + 4\,\text{arccsch}\,(x))^3\,\sqrt{x^2 + 1}\,|x|}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(x)}{\text{arccsch}(x)}}}\left(180\sqrt{3}\int_0^x \frac{\sqrt{\text{arccsch}\,(t)}}{(3 + 4\,\text{arccsch}\,(t))^3\,\sqrt{t^2}}\right.$$

Mean

$$mu = \int_0^\infty 180\,\frac{\sqrt{3}\sqrt{\text{arccsch}\,(x)}}{(3 + 4\,\text{arccsch}\,(x))^3\,\sqrt{x^2 + 1}}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(x)}{\text{arccsch}(x)}}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \infty - \left(\int_0^\infty 180\,\frac{\sqrt{3}\sqrt{\text{arccsch}\,(x)}}{(3 + 4\,\text{arccsch}\,(x))^3\,\sqrt{x^2 + 1}}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(x)}{\text{arccsch}(x)}}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 180\,\frac{x^r\sqrt{3}\sqrt{\text{arccsch}\,(x)}}{(3 + 4\,\text{arccsch}\,(x))^3\,\sqrt{x^2 + 1}\,|x|}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(x)}{\text{arccsch}(x)}}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 180\,\frac{\mathrm{e}^{tx}\sqrt{3}\sqrt{\text{arccsch}\,(x)}}{(3 + 4\,\text{arccsch}\,(x))^3\,\sqrt{x^2 + 1}\,x}\,\frac{1}{\sqrt{\frac{3 + 4\,\text{arccsch}(x)}{\text{arccsch}(x)}}}\,\mathrm{d}x_1$$

$$t \mapsto \operatorname{arccsch}\left(t^{-1}\right)$$

Probability Distribution Function

$$f(x) = 180 \frac{\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}$$

Cumulative Distribution Function

$$F(x) = 3 \frac{\sqrt{3}\sqrt{e^{2x}-1}\left(3e^{4x}+20e^{3x}-6e^{2x}-20e^{x}+3\right)}{(3e^{2x}+8e^{x}-3)^{5/2}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [lnos \mapsto RootOf\left(\left(243\,s^2-243\right)\_Z^{10} + \left(3240\,s^2-3240\right)\_Z^9 + \left(16065\,s^2-9585\right)\_Z^8 + ($$

Survivor Function

$$S(x) = \frac{60\sqrt{3}\sqrt{e^{2x}-1}e^{x}+18\sqrt{3}\sqrt{e^{2x}-1}e^{2x}-9\sqrt{3}\sqrt{e^{2x}-1}e^{4x}-60\sqrt{3}\sqrt{e^{2x}-1}e^{3x}-9\sqrt{3}\text{\textbackslash}}{}$$

Hazard Function

$$h(x) = 180 \frac{}{(3\sinh(x)+4)^{7/2}\left(60\sqrt{3}\sqrt{e^{2x}-1}e^{x}+18\sqrt{3}\sqrt{e^{2x}-1}e^{2x}-9\sqrt{3}\sqrt{e^{2x}-1}e^{4x}-60\text{\textbackslash}\right)}$$

Mean

$$mu = \int_0^\infty 180 \frac{x\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 180 \frac{x^2\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}\,\mathrm{d}x - \left(\int_0^\infty 180 \frac{x\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 180 \frac{x^r\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 180 \frac{e^{tx}\sqrt{3}\sqrt{\sinh(x)}\cosh(x)}{(3\sinh(x)+4)^{7/2}}\,\mathrm{d}x_1$$