"GeneralizedParetoRV(2,3,4)"

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

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = 81\,\frac{(\sqrt{x}+5)\,e^{-2\,\sqrt{x}}}{(\sqrt{x}+3)^5\,\sqrt{x}}$$

Cumulative Distribution Function

$$F(x) = -\frac{-12\,x^{3/2} - x^2 + 81\,e^{-2\,\sqrt{x}} - 108\,\sqrt{x} - 54\,x - 81}{x^2 + 12\,x^{3/2} + 54\,x + 108\,\sqrt{x} + 81}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = 81\,\frac{e^{-2\,\sqrt{x}}}{x^2 + 12\,x^{3/2} + 54\,x + 108\,\sqrt{x} + 81}$$

Hazard Function

$$h(x) = \frac{(\sqrt{x}+5)\left(x^2 + 12\,x^{3/2} + 54\,x + 108\,\sqrt{x} + 81\right)}{(\sqrt{x}+3)^5\,\sqrt{x}}$$

Mean

$$mu = -141 + 972\,e^6 Ei\,(1,6)$$

Variance

$$sigma^2 = -944784\,(Ei\,(1,6))^2\,e^{12} + 309420\,e^6 Ei\,(1,6) - 25011$$

Moment Function

$$m(x) = 2^{-2-2\,r}\Big(-19008\,\Gamma\,(2\,r-3)\,r - 82080\,\Gamma\,(2\,r-3)\,r^2 - 27648\,\Gamma\,(2\,r-3)\,r^3 - 3456\,\Gamma\,(2\,r -$$

Moment Generating Function

$$\int_0^\infty 81\,\frac{(\sqrt{x}+5)\,e^{tx-2\sqrt{x}}}{(\sqrt{x}+3)^5\sqrt{x}}\,dx_1$$

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

Probability Distribution Function

$$f(x) = 324\,\frac{(x^2+5)\,e^{-2x^2}x}{(x^2+3)^5}$$

Cumulative Distribution Function

$$F(x) = -\frac{-x^8-12\,x^6-54\,x^4-108\,x^2+81\,e^{-2x^2}-81}{(x^2+3)^4}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = 81\,\frac{e^{-2x^2}}{(x^2+3)^4}$$

Hazard Function

$$h(x) = 4\,\frac{(x^2+5)\,x}{x^2+3}$$

Mean

$$mu = \frac{463\sqrt{3}\pi\,e^6\mathrm{erf}\left(\sqrt{2}\sqrt{3}\right)}{32} - \frac{463\sqrt{3}\pi\,e^6}{32} + \frac{111\sqrt{2}\sqrt{\pi}}{16}$$

Variance

$$sigma^2 = -108\,e^6 Ei\,(1,6)+16-\frac{643107\,\pi^2e^{12}\left(\mathrm{erf}\left(\sqrt{2}\sqrt{3}\right)\right)^2}{1024}+\frac{643107\,\pi^2e^{12}\mathrm{erf}\left(\sqrt{2}\sqrt{3}\right)}{512}-\frac{51393\,\sqrt{}}{}$$

Moment Function

$$m(x) = 1/9\sqrt{3}2^{-7/2-r/2}\left(-28512\sqrt{6}r\,\Gamma\,(-3+r/2)-30780\sqrt{6}r^2\Gamma\,(-3+r/2)-2592\sqrt{6}r^3\Gamma\,(-\right.$$

Moment Generating Function

$$\int_0^{\infty} 324 \,\frac{(x^2+5)\, x \mathrm{e}^{x(t-2\,x)}}{(x^2+3)^5}\, \mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 162 \,\frac{x^2\,(1+5\,x)}{(1+3\,x)^5} \mathrm{e}^{-2\,x^{-1}}$$

Cumulative Distribution Function

$$F(x) = 81 \,\frac{x^4}{81\,x^4+108\,x^3+54\,x^2+12\,x+1} \mathrm{e}^{-2\,x^{-1}}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \left(2\,\mathrm{W}\left(3/2\,\frac{\mathrm{e}^{3/2}}{\sqrt[4]{s}}\right) - 3\right)^{-1}]$$

Survivor Function

$$S(x) = -\frac{1}{81\,x^4+108\,x^3+54\,x^2+12\,x+1} \left(81\,x^4 \mathrm{e}^{-2\,x^{-1}} - 81\,x^4 - 108\,x^3 - 54\,x^2 - 12\,x - 1\right)$$

Hazard Function

$$h(x) = -162 \,\frac{x^2\,(1+5\,x)}{1+3\,x} \mathrm{e}^{-2\,x^{-1}} \left(81\,x^4 \mathrm{e}^{-2\,x^{-1}} - 81\,x^4 - 108\,x^3 - 54\,x^2 - 12\,x - 1\right)^{-1}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = 9\,2^r \Big(264\,\Gamma(-r-3)\,r - 570\,\Gamma(-r-3)\,r^2 + 96\,\Gamma(-r-3)\,r^3 - 6\,\Gamma(-r-3)\,r^4 + 9000\,\Gamma$$

Moment Generating Function

$$\int_0^{\infty} 162\,\frac{x^2\,(1+5\,x)}{(1+3\,x)^5}\mathrm{e}^{\frac{tx^2-2}{x}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{(\tan(x)+5)\,\mathrm{e}^{-2\,\tan(x)}\left(1+(\tan(x))^2\right)}{(\tan(x)+3)^5}$$

Cumulative Distribution Function

$$F(x) = \begin{cases} -\frac{1}{28\,(\cos(x))^4+96\,(\cos(x))^3\sin(x)+52\,(\cos(x))^2+12\,\sin(x)\cos(x)+1}\Big(81\,(\cos(x))^4\,\mathrm{e}^{-2\,\frac{\sin(x)}{\cos(x)}}-1-28\,(\mathrm{co} \\ \frac{\infty\left((\cos(x))^4+(\cos(x))^2+1\right)}{28\,(\cos(x))^4+96\,(\cos(x))^3\sin(x)+52\,(\cos(x))^2+12\,\sin(x)\cos(x)+1} \end{cases}$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = \begin{cases} 81\,\frac{(\cos(x))^4}{28\,(\cos(x))^4+96\,(\cos(x))^3\sin(x)+52\,(\cos(x))^2+12\,\sin(x)\cos(x)+1}\mathrm{e}^{-2\,\frac{\sin(x)}{\cos(x)}} & x \le \pi/2 \\ -\infty & \pi/2 < x \end{cases}$$

Hazard Function

$$h(x) = \begin{cases} 2\,\frac{\sin(x)+5\,\cos(x)}{(\sin(x)+3\,\cos(x))(\cos(x))^2} & x \le \pi/2 \\ 0 & \pi/2 < x \end{cases}$$

Mean

$$mu = -162\int_0^{\pi/2}\frac{(\sin(x)+5\,\cos(x))\,(\cos(x))^2\,x}{12\,(\cos(x))^5-316\,(\cos(x))^4\sin(x)-240\,(\cos(x))^3-88\,(\cos(x))^2\sin(x)-1}$$

Variance

$$sigma^2 = -162\int_0^{\pi/2}\frac{(\sin(x)+5\,\cos(x))\,(\cos(x))^2\,x^2}{12\,(\cos(x))^5-316\,(\cos(x))^4\sin(x)-240\,(\cos(x))^3-88\,(\cos(x))^2\sin(x)}$$

Moment Function

$$m(x) = \int_0^{\pi/2} 162 \, \frac{x^r \left(\tan(x) + 5\right) e^{-2\,\tan(x)} \left(1 + (\tan(x))^2\right)}{\left(\tan(x) + 3\right)^5} \, dx$$

Moment Generating Function

$$-162 \int_0^{\pi/2} \frac{\left(\sin(x) + 5\,\cos(x)\right)(\cos(x))^2}{12\,(\cos(x))^5 - 316\,(\cos(x))^4 \sin(x) - 240\,(\cos(x))^3 - 88\,(\cos(x))^2 \sin(x) - 15\,\cos(}$$

$$t \mapsto e^t$$

Probability Distribution Function

$$f(x) = 162 \, \frac{\ln(x) + 5}{\left(\ln(x) + 3\right)^5 x^3}$$

Cumulative Distribution Function

$$F(x) = \frac{x^2 (\ln(x))^4 + 12\,x^2 (\ln(x))^3 + 54\,x^2 (\ln(x))^2 + 108\,x^2 \ln(x) + 81\,x^2 - 81}{x^2 \left((\ln(x))^4 + 12\,(\ln(x))^3 + 54\,(\ln(x))^2 + 108\,\ln(x) + 81\right)}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = 81 \, \frac{1}{x^2 \left((\ln(x))^4 + 12\,(\ln(x))^3 + 54\,(\ln(x))^2 + 108\,\ln(x) + 81\right)}$$

Hazard Function

$$h(x) = 2 \, \frac{\ln(x) + 5}{x \left(\ln(x) + 3\right)}$$

Mean

$$mu = -\frac{27\,e^3 Ei(1,3)}{2} + 5$$

Variance

$$sigma^2 = -22 - \frac{729\,e^6 \left(Ei(1,3)\right)^2}{4} + 135\,e^3 Ei(1,3)$$

Moment Function

$$m(x) = 162 \lim_{\_u \to \infty} -\frac{e^{-3\,r} \left(-1458\,r^3 e^{3\,r} + 5346\,r^2 e^{3\,r} + 2187\,i e^6 r^4 \pi \ \left(\mathit{signum}\left(-2+r\right)\right)^2 - 13122\,ie\right.}{}$$

Moment Generating Function

$$\int_1^\infty 162\,\frac{e^{tx}\left(\ln\left(x\right)+5\right)}{\left(\ln\left(x\right)+3\right)^5 x^3}\,dx_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{\left(e^x+5\right) e^{-2\,e^x+x}}{\left(e^x+3\right)^5}$$

Cumulative Distribution Function

$$F(x) = \frac{e^{4\,x} + 12\,e^{3\,x} + 54\,e^{2\,x} + 108\,e^x + 81 - 81\,e^{-2\,e^x}}{e^{4\,x} + 12\,e^{3\,x} + 54\,e^{2\,x} + 108\,e^x + 81}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = 81\,\frac{e^{-2\,e^x}}{e^{4\,x} + 12\,e^{3\,x} + 54\,e^{2\,x} + 108\,e^x + 81}$$

Hazard Function

$$h(x) = 2\,\frac{\left(e^x+5\right) e^x}{e^x+3}$$

Mean

$$mu = \int_{-\infty}^\infty 162\,\frac{x\left(e^x+5\right) e^{-2\,e^x+x}}{\left(e^x+3\right)^5}\,dx$$

Variance

$$sigma^2 = \int_{-\infty}^\infty 162\,\frac{x^2\left(e^x+5\right) e^{-2\,e^x+x}}{\left(e^x+3\right)^5}\,dx - \left(\int_{-\infty}^\infty 162\,\frac{x\left(e^x+5\right) e^{-2\,e^x+x}}{\left(e^x+3\right)^5}\,dx\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 162\,\frac{x^r\,(\mathrm{e}^x + 5)\,\mathrm{e}^{-2\,\mathrm{e}^x + x}}{(\mathrm{e}^x + 3)^5}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 162\,\frac{(\mathrm{e}^x + 5)\,\mathrm{e}^{tx - 2\,\mathrm{e}^x + x}}{(\mathrm{e}^x + 3)^5}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{(\ln(x) - 5)\,x}{(\ln(x) - 3)^5}$$

Cumulative Distribution Function

$$F(x) = \begin{cases} 81\,\frac{x^2}{(\ln(x))^4 - 12\,(\ln(x))^3 + 54\,(\ln(x))^2 - 108\,\ln(x) + 81} & x \le \mathrm{e}^3 \\ \mathit{undefined} & \mathrm{e}^3 < x \end{cases}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [\exp \circ s \mapsto \mathit{RootOf}\left(s\_Z^4 - 12\,s\_Z^3 + 54\,s\_Z^2 - 81\,\mathrm{e}^{2\,\_Z} - 108\,s\_Z + 81\,s\right)]$$

Survivor Function

$$S(x) = \begin{cases} \frac{(\ln(x))^4 - 12\,(\ln(x))^3 + 54\,(\ln(x))^2 - 81\,x^2 - 108\,\ln(x) + 81}{(\ln(x))^4 - 12\,(\ln(x))^3 + 54\,(\ln(x))^2 - 108\,\ln(x) + 81} & x \le \mathrm{e}^3 \\ \mathit{undefined} & \mathrm{e}^3 < x \end{cases}$$

Hazard Function

$$h(x) = \begin{cases} 162\,\frac{(\ln(x) - 5)x}{\left((\ln(x))^4 - 12\,(\ln(x))^3 + 54\,(\ln(x))^2 - 81\,x^2 - 108\,\ln(x) + 81\right)(\ln(x) - 3)} & x \le \mathrm{e}^3 \\ \mathit{undefined} & \mathrm{e}^3 < x \end{cases}$$

Mean

$$mu = -36 + \frac{729\,\mathrm{e}^9\,Ei(1, 9)}{2}$$

Variance

$$sigma^2 = 1728\,e^{12} Ei\,(1, 12) - 1429 + 26244\,e^{9} Ei\,(1, 9) - \frac{531441\,e^{18}\,(Ei\,(1, 9))^2}{4}$$

Moment Function

$$m(x) = -9/2\,r^3 - \frac{33\,r^2}{2} - 16\,r + 162\,e^{6+3\,r} Ei\,(1, 6+3\,r)\,r^2 + 108\,e^{6+3\,r} Ei\,(1, 6+3\,r)\,r + \frac{27\,e^{6+3\,r} Ei\,(1}{2}$$

Moment Generating Function

$$162 \int_0^1 \frac{e^{tx}\,(\ln(x) - 5)\,x}{(\ln(x) - 3)^5}\, dx_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{e^{(3\,xe^{x}-2)e^{-x}}\,(1 + 5\,e^{x})}{(1 + 3\,e^{x})^5}$$

Cumulative Distribution Function

$$F(x) = 81\,\frac{e^{2\,(2\,xe^{x}-1)e^{-x}}}{81\,e^{4\,x} + 108\,e^{3\,x} + 54\,e^{2\,x} + 12\,e^{x} + 1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto RootOf\left(4\,e^{\_Z} \ln(3) - e^{\_Z} \ln\left(s\left(3\,e^{\_Z} + 1\right)^4\right) + 4\,\_Z\,e^{\_Z} - 2\right)]$$

Survivor Function

$$S(x) = \frac{81\,e^{4\,x} + 108\,e^{3\,x} + 54\,e^{2\,x} + 12\,e^{x} - 81\,e^{2\,(2\,xe^{x}-1)e^{-x}} + 1}{81\,e^{4\,x} + 108\,e^{3\,x} + 54\,e^{2\,x} + 12\,e^{x} + 1}$$

Hazard Function

$$h(x) = 162\,\frac{e^{(3\,xe^{x}-2)e^{-x}}\,(1 + 5\,e^{x})}{(81\,e^{4\,x} + 108\,e^{3\,x} + 54\,e^{2\,x} + 12\,e^{x} - 81\,e^{2\,(2\,xe^{x}-1)e^{-x}} + 1)\,(1 + 3\,e^{x})}$$

Mean

$$mu = \int_{-\infty}^{\infty} 162\, \frac{x\,(1+5\,e^{x})\,e^{(3\,x e^{x}-2)e^{-x}}}{(1+3\,e^{x})^{5}}\, dx$$

Variance

$$sigma^2 = \int_{-\infty}^{\infty} 162\, \frac{x^2\,(1+5\,e^{x})\,e^{(3\,x e^{x}-2)e^{-x}}}{(1+3\,e^{x})^{5}}\, dx - \left(\int_{-\infty}^{\infty} 162\, \frac{x\,(1+5\,e^{x})\,e^{(3\,x e^{x}-2)e^{-x}}}{(1+3\,e^{x})^{5}}\, dx\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 162\, \frac{x^r\,(1+5\,e^{x})\,e^{(3\,x e^{x}-2)e^{-x}}}{(1+3\,e^{x})^{5}}\, dx$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 162\, \frac{(1+5\,e^{x})\,e^{(tx e^{x}+3\,x e^{x}-2)e^{-x}}}{(1+3\,e^{x})^{5}}\, dx_1$$

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

Probability Distribution Function

$$f(x) = 162\, \frac{(e^{x}+4)\,e^{-2\,e^{x}+2+x}}{(e^{x}+2)^{5}}$$

Cumulative Distribution Function

$$F(x) = \frac{-81\,e^{2-2\,e^{x}} + e^{4\,x} + 8\,e^{3\,x} + 24\,e^{2\,x} + 32\,e^{x} + 16}{e^{4\,x} + 8\,e^{3\,x} + 24\,e^{2\,x} + 32\,e^{x} + 16}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = 81\, \frac{e^{2-2\,e^{x}}}{e^{4\,x} + 8\,e^{3\,x} + 24\,e^{2\,x} + 32\,e^{x} + 16}$$

Hazard Function

$$h(x) = 2\, \frac{(e^{x}+4)\,e^{x}}{e^{x}+2}$$

Mean

$$mu = \int_0^\infty 162 \, \frac{x \left(e^x + 4\right) e^{-2 \, e^x + 2 + x}}{\left(e^x + 2\right)^5} \, dx$$

Variance

$$sigma^2 = \int_0^\infty 162 \, \frac{x^2 \left(e^x + 4\right) e^{-2 \, e^x + 2 + x}}{\left(e^x + 2\right)^5} \, dx - \left(\int_0^\infty 162 \, \frac{x \left(e^x + 4\right) e^{-2 \, e^x + 2 + x}}{\left(e^x + 2\right)^5} \, dx\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 162 \, \frac{x^r \left(e^x + 4\right) e^{-2 \, e^x + 2 + x}}{\left(e^x + 2\right)^5} \, dx$$

Moment Generating Function

$$\int_0^\infty 162 \, \frac{\left(e^x + 4\right) e^{tx - 2 \, e^x + 2 + x}}{\left(e^x + 2\right)^5} \, dx_1$$

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

Probability Distribution Function

$$f(x) = 162 \, \frac{e^{x^{-1}} + 3}{\left(e^{x^{-1}} + 1\right)^5 x^2} e^{-\frac{2 \, e^{x^{-1}} x - 4 \, x - 1}{x}}$$

Cumulative Distribution Function

$$F(x) = 81 \, e^{4 - 2 \, e^{x^{-1}}} \left(e^{4 \, x^{-1}} + 4 \, e^{3 \, x^{-1}} + 6 \, e^{2 \, x^{-1}} + 4 \, e^{x^{-1}} + 1\right)^{-1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = -1 \left(-e^{4 \, x^{-1}} - 4 \, e^{3 \, x^{-1}} - 6 \, e^{2 \, x^{-1}} - 4 \, e^{x^{-1}} + 81 \, e^{4 - 2 \, e^{x^{-1}}} - 1\right) \left(e^{4 \, x^{-1}} + 4 \, e^{3 \, x^{-1}} + 6 \, e^{2 \, x^{-1}} + 4\right.$$

Hazard Function

$$h(x) = -162 \, \frac{e^{x^{-1}} + 3}{x^2 \left(e^{x^{-1}} + 1\right)} e^{-\frac{2 \, e^{x^{-1}} x - 4 \, x - 1}{x}} \left(-e^{4 \, x^{-1}} - 4 \, e^{3 \, x^{-1}} - 6 \, e^{2 \, x^{-1}} - 4 \, e^{x^{-1}} + 81 \, e^{4 - 2 \, e^{x^{-1}}} - 1\right)^{-}$$

Mean

$$mu = 162 \int_0^{(\ln(2))^{-1}} \frac{e^{x^{-1}} + 3}{x\left(e^{x^{-1}} + 1\right)^5} e^{-\frac{2\,e^{x^{-1}}x - 4\,x - 1}{x}}\, dx$$

Variance

$$sigma^2 = 162 \int_0^{(\ln(2))^{-1}} \frac{e^{x^{-1}} + 3}{\left(e^{x^{-1}} + 1\right)^5} e^{-\frac{2\,e^{x^{-1}}x - 4\,x - 1}{x}}\, dx - 26244 \left(\int_0^{(\ln(2))^{-1}} \frac{e^{x^{-1}} + 3}{x\left(e^{x^{-1}} + 1\right)^5} e^{-\frac{2\,e^{x^{-1}}x - 4\,x -}{x}}\right.$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}} 162\, \frac{x^r\left(e^{x^{-1}} + 3\right)}{\left(e^{x^{-1}} + 1\right)^5 x^2} e^{-\frac{2\,e^{x^{-1}}x - 4\,x - 1}{x}}\, dx$$

Moment Generating Function

$$162 \int_0^{(\ln(2))^{-1}} \frac{e^{x^{-1}} + 3}{\left(e^{x^{-1}} + 1\right)^5 x^2} e^{-\frac{-tx^2 + 2\,e^{x^{-1}}x - 4\,x - 1}{x}}\, dx_1$$

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

Probability Distribution Function

$$f(x) = 162\, \frac{\operatorname{arctanh}(x) + 5}{\left(\operatorname{arctanh}(x) + 3\right)^5 (x+1)^2}$$

Cumulative Distribution Function

$$F(x) = \frac{x\left(\operatorname{arctanh}(x)\right)^4 + \left(\operatorname{arctanh}(x)\right)^4 + 12\,x\left(\operatorname{arctanh}(x)\right)^3 + 12\,\left(\operatorname{arctanh}(x)\right)^3 + 54\,x\left(\operatorname{arct}\right.}{x\left(\operatorname{arctanh}(x)\right)^4 + 12\,x\left(\operatorname{arctanh}(x)\right)^3 + 54\,x\left(\operatorname{arctanh}(x)\right)^2 + 108\,x\operatorname{arctanh}(x) + 81\,x + (}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = -81\, \frac{x -}{x\left(\operatorname{arctanh}(x)\right)^4 + 12\,x\left(\operatorname{arctanh}(x)\right)^3 + 54\,x\left(\operatorname{arctanh}(x)\right)^2 + 108\,x\operatorname{arctanh}(x) + 81}$$

Hazard Function

$$h(x) = -2\,\frac{\operatorname{arctanh}(x)+5}{(\operatorname{arctanh}(x)+3)(x^2-1)}$$

Mean

$$mu = 162\int_0^1 \frac{x(\operatorname{arctanh}(x)+5)}{(\operatorname{arctanh}(x)+3)^5 (x+1)^2}\,dx$$

Variance

$$sigma^2 = 162\int_0^1 \frac{x^2(\operatorname{arctanh}(x)+5)}{(\operatorname{arctanh}(x)+3)^5 (x+1)^2}\,dx - 26244\left(\int_0^1 \frac{x(\operatorname{arctanh}(x)+5)}{(\operatorname{arctanh}(x)+3)^5 (x+1)^2}\,dx\right)^2$$

Moment Function

$$m(x) = \int_0^1 162\,\frac{x^r(\operatorname{arctanh}(x)+5)}{(\operatorname{arctanh}(x)+3)^5 (x+1)^2}\,dx$$

Moment Generating Function

$$162\int_0^1 \frac{e^{tx}(\operatorname{arctanh}(x)+5)}{(\operatorname{arctanh}(x)+3)^5 (x+1)^2}\,dx_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{\operatorname{arcsinh}(x)+5}{(\operatorname{arcsinh}(x)+3)^5\left(x+\sqrt{x^2+1}\right)^2\sqrt{x^2+1}}$$

Cumulative Distribution Function

$$F(x) = \frac{\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^4 - 12\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^3 + 54\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^2 + 162\sqrt{x}}{\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^4 - 12\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^3 + 54\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^2}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \frac{1}{72\sqrt{-s+1}}\left(16\left(W\left(3/2\,\frac{e^{3/2}}{\sqrt[4]{-s+1}}\right)\right)^4 s - 16\left(W\left(3/2\,\frac{e^{3/2}}{\sqrt[4]{-s+1}}\right)\right)^4 + 81\right)\left(W\right.$$

Survivor Function

$$S(x) = -81\,\frac{2\sqrt{x^2+1}x - 2x^2 - 1}{\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^4 - 12\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^3 + 54\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^2 - 108}$$

Hazard Function

$$h(x) = -2\,\frac{(\mathrm{arcsinh}\,(x)+5)\left(\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^4 - 12\left(\ln\left(-x+\sqrt{x^2+1}\right)\right)^3 + 54\left(\ln\left(-x+\right.\right.\right.}{(\mathrm{arcsinh}\,(x)+3)^5\left(x+\sqrt{x^2+1}\right)^2\sqrt{x^2+1}\left(2\sqrt{x^2+1}\right.}$$

Mean

$$mu = -\frac{27\,e^3 Ei\,(1,3)}{4} - \frac{729\,e^9 Ei\,(1,9)}{4} + \frac{41}{2}$$

Variance

$$sigma^2 = -\frac{729\,e^6\,(Ei\,(1,3))^2}{16} - \frac{19683\,Ei\,(1,3)\,Ei\,(1,9)\,e^{12}}{8} + \frac{1107\,e^3 Ei\,(1,3)}{4} - \frac{531441\,e^{18}\,(Ei\,(1,9}{16}$$

Moment Function

$$m(x) = \int_0^\infty 162\,\frac{x^r\,(\mathrm{arcsinh}\,(x)+5)}{(\mathrm{arcsinh}\,(x)+3)^5\left(x+\sqrt{x^2+1}\right)^2\sqrt{x^2+1}}\,dx$$

Moment Generating Function

$$\int_0^\infty 162\,\frac{e^{tx}\,(\mathrm{arcsinh}\,(x)+5)}{(\mathrm{arcsinh}\,(x)+3)^5\left(x+\sqrt{x^2+1}\right)^2\sqrt{x^2+1}}\,dx_1$$

$$t \mapsto \mathrm{arcsinh}\,(t)$$

Probability Distribution Function

$$f(x) = 162\,\frac{(\sinh(x)+5)\,e^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4 + 15\,(\cosh(x))^4 + 88\,\sinh(x)(\cosh(x))^2 + 240\,(\cosh(x))^2 + 316}$$

Cumulative Distribution Function

$$F(x) = \frac{e^{8x} + 24\,e^{7x} + 212\,e^{6x} + 792\,e^{5x} + 870\,e^{4x} - 1296\,e^{(4xe^x+1)e^{-x}-e^x} - 792\,e^{3x} + 212\,e^{2x} - 2}{e^{8x} + 24\,e^{7x} + 212\,e^{6x} + 792\,e^{5x} + 870\,e^{4x} - 792\,e^{3x} + 212\,e^{2x} - 24\,e^x + 1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto RootOf\left(-\mathrm{e}^{\_Z}\ln\left(-\left(\mathrm{e}^{2\_Z}+6\,\mathrm{e}^{\_Z}-1\right)^4(s-1)\right)+4\,\mathrm{e}^{\_Z}\ln(3)+4\,\mathrm{e}^{\_Z}\ln(2)-\mathrm{e}^{2\_Z}\right.$$

Survivor Function

$$S(x) = 1296\,\frac{\mathrm{e}^{-\left(\mathrm{e}^{2x}-4x\mathrm{e}^{x}-1\right)\mathrm{e}^{-x}}}{\mathrm{e}^{8x}+24\,\mathrm{e}^{7x}+212\,\mathrm{e}^{6x}+792\,\mathrm{e}^{5x}+870\,\mathrm{e}^{4x}-792\,\mathrm{e}^{3x}+212\,\mathrm{e}^{2x}-24\,\mathrm{e}^{x}+1}$$

Hazard Function

$$h(x) = 1/8\,\frac{(\sinh(x)+5)\,\mathrm{e}^{-\left(2\sinh(x)\mathrm{e}^{x}-\mathrm{e}^{2x}+4x\mathrm{e}^{x}+1\right)\mathrm{e}^{-x}}\cosh(x)\left(\mathrm{e}^{8x}+24\,\mathrm{e}^{7x}+212\,\mathrm{e}^{6x}+792\,\mathrm{e}^{5x}+\right.}{\sinh(x)(\cosh(x))^4+15\,(\cosh(x))^4+88\,\sinh(x)(\cosh(x))^2+240\,(\cos}$$

Mean

$$mu = \int_0^\infty 162\,\frac{x(\sinh(x)+5)\,\mathrm{e}^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4+15\,(\cosh(x))^4+88\,\sinh(x)(\cosh(x))^2+240\,(\cosh(x))^2+3}$$

Variance

$$sigma^2 = \int_0^\infty 162\,\frac{x^2(\sinh(x)+5)\,\mathrm{e}^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4+15\,(\cosh(x))^4+88\,\sinh(x)(\cosh(x))^2+240\,(\cosh(x))^2}$$

Moment Function

$$m(x) = \int_0^\infty 162\,\frac{x^r(\sinh(x)+5)\,\mathrm{e}^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4+15\,(\cosh(x))^4+88\,\sinh(x)(\cosh(x))^2+240\,(\cosh(x))^2+}$$

Moment Generating Function

$$\int_0^\infty 162\,\frac{(\sinh(x)+5)\cosh(x)\,\mathrm{e}^{tx-2\sinh(x)}}{\sinh(x)(\cosh(x))^4+15\,(\cosh(x))^4+88\,\sinh(x)(\cosh(x))^2+240\,(\cosh(x))^2+316\,\sin}$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{(4+\operatorname{arccsch}(x))\,\mathrm{e}^{2-2\operatorname{arccsch}(x)}}{(2+\operatorname{arccsch}(x))^5\sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

$$F(x) = 162 \int_0^x \frac{(4 + \operatorname{arccsch}(t))\,e^{2-2\operatorname{arccsch}(t)}}{(2 + \operatorname{arccsch}(t))^5 \sqrt{t^2+1}\,|t|}\,dt$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 162 \int_0^x \frac{(4 + \operatorname{arccsch}(t))\,e^{2-2\operatorname{arccsch}(t)}}{(2 + \operatorname{arccsch}(t))^5 \sqrt{t^2+1}\,|t|}\,dt$$

Hazard Function

$$h(x) = -162 \frac{(4 + \operatorname{arccsch}(x))\,e^{2-2\operatorname{arccsch}(x)}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x^2+1}\,|x|} \left(-1 + 162 \int_0^x \frac{(4 + \operatorname{arccsch}(t))\,e^{2-2\operatorname{arccsch}(t)}}{(2 + \operatorname{arccsch}(t))^5 \sqrt{t^2+1}\,|t|}\,dt\right)^{-1}$$

Mean

$$mu = 162 \int_0^{2\frac{e}{e^2-1}} \frac{(4 + \operatorname{arccsch}(x))\,e^{2-2\operatorname{arccsch}(x)}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x^2+1}}\,dx$$

Variance

$$sigma^2 = 162 \int_0^{2\frac{e}{e^2-1}} \frac{x\,(4 + \operatorname{arccsch}(x))\,e^{2-2\operatorname{arccsch}(x)}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x^2+1}}\,dx - 26244 \left(\int_0^{2\frac{e}{e^2-1}} \frac{(4 + \operatorname{arccsch}(x))\,e^{2-2\,a}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x}}\right.$$

Moment Function

$$m(x) = \int_0^{2\left(e-e^{-1}\right)^{-1}} 162 \frac{x^r\,(4 + \operatorname{arccsch}(x))\,e^{2-2\operatorname{arccsch}(x)}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x^2+1}\,|x|}\,dx$$

Moment Generating Function

$$162 \int_0^{2\frac{e}{e^2-1}} \frac{(4 + \operatorname{arccsch}(x))\,e^{tx+2-2\operatorname{arccsch}(x)}}{(2 + \operatorname{arccsch}(x))^5 \sqrt{x^2+1}x}\,dx_1$$

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

Probability Distribution Function

$$f(x) = 162 \frac{(4 \sinh(x) + 1) \cosh(x) (\sinh(x))^2}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (\cosh(x))^2 - 3}$$

Cumulative Distribution Function

$$F(x) = \frac{81 e^{8x} - 324 e^{6x} + 486 e^{4x} - 324 e^{2x} + 81}{16 e^{8x} + 64 e^{7x} - 128 e^{5x} + 128 e^{3x} + 32 e^{2x} + 32 e^{6x} - 80 e^{4x} - 64 e^{x} + 16} e^{2 \frac{e^{2x} - 2e^{x} - 1}{e^{2x} - 1}}$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = -1/16 \frac{1}{e^{8x} + 4e^{7x} - 8e^{5x} + 8e^{3x} + 2e^{2x} + 2e^{6x} - 5e^{4x} - 4e^{x} + 1} \left(81 e^{2 \frac{e^{2x} - 2e^{x} - 1}{e^{2x} - 1} + 8x} -\right.$$

Hazard Function

$$h(x) = 2592 \frac{(4 \sinh(x) + 1) \cosh(x) (\sinh(x))^2 (e^{8x} + 4e^{7x} - 8e^{5x} + 8e^{3x} + 2e^{2x} + 2e^{6x} - 5}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (\cosh(x))^2 -}$$

Mean

$$mu = 162 \int_0^{\ln(1+\sqrt{2})} \frac{x (4 \sinh(x) + 1) \cosh(x) (\sinh(x))^2}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (\cosh}$$

Variance

$$sigma^2 = 162 \int_0^{\ln(1+\sqrt{2})} \frac{x^2 (4 \sinh(x) + 1) \cosh(x) (\sinh(x))^2}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (}$$

Moment Function

$$m(x) = \int_0^{\ln(1+\sqrt{2})} 162 \frac{x^r (4 \sinh(x) + 1) \cosh(x) (\sinh(x))^2}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (\cos}$$

Moment Generating Function

$$162 \int_0^{\ln(1+\sqrt{2})} \frac{(\sinh(x))^2 \cosh(x) (4 \sinh(x) + 1)}{32 \sinh(x) (\cosh(x))^4 + 80 (\cosh(x))^4 + 16 \sinh(x) (\cosh(x))^2 - 120 (\cosh(x))^2}$$

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

Probability Distribution Function

$$f(x) = 162 \frac{(4 + \operatorname{arctanh}(x^{-1}))\, e^{2-2\operatorname{arctanh}\left(x^{-1}\right)}}{(2 + \operatorname{arctanh}(x^{-1}))^5 (x^2-1)}$$

Cumulative Distribution Function

$$F(x) = 1296 \frac{}{256 + 256\,x - 192\,\ln(x+1)\ln(x-1)\,x - 48\,(\ln(x+1))^2 \ln(x-1)\,x + 48\,\ln(x+}$$

Inverse Cumulative Distribution Function

$$F^{-1} = []$$

Survivor Function

$$S(x) = -\frac{-256 - 256\,x + 192\,\ln(x+1)\ln(x-1)\,x + 48\,(\ln(x+1))^2 \ln(x-1)\,x - 48\,\ln(x+1}{256 + 256\,x - 192\,\ln(x+1)\ln(x-1)\,x - 48\,(\ln(x+1))^2 \ln(x-1)\,x + 48}$$

Hazard Function

$$h(x) = 162 \frac{}{\left(256 + 256\,x - 192\,\ln(x+1)\ln(x-1)\,x - 48\,(\ln(x+1))^2 \ln(x-1)\,x + 48\,\ln(x+\right.}$$

Mean

$$mu = 162 \int_1^{\frac{e^2+1}{e^2-1}} \frac{x\,(4 + \operatorname{arctanh}(x^{-1}))\, e^{2-2\operatorname{arctanh}\left(x^{-1}\right)}}{(2 + \operatorname{arctanh}(x^{-1}))^5 (x^2-1)}\, dx$$

Variance

$$sigma^2 = 162 \int_1^{\frac{e^2+1}{e^2-1}} \frac{x^2\,(4 + \operatorname{arctanh}(x^{-1}))\, e^{2-2\operatorname{arctanh}\left(x^{-1}\right)}}{(2 + \operatorname{arctanh}(x^{-1}))^5 (x^2-1)}\, dx - 26244 \left(\int_1^{\frac{e^2+1}{e^2-1}} \frac{x\,(4 + \operatorname{arctanh}(x^{-}}{(2 + \operatorname{arctanh}(}\right.$$

Moment Function

$$m(x) = \int_1^{\frac{e+e^{-1}}{e-e^{-1}}} 162 \frac{x^r\,(4 + \operatorname{arctanh}(x^{-1}))\, e^{2-2\operatorname{arctanh}\left(x^{-1}\right)}}{(2 + \operatorname{arctanh}(x^{-1}))^5 (x^2-1)}\, dx$$

Moment Generating Function

$$162 \int_{1}^{\frac{e^2+1}{e^2-1}} \frac{\left(4+\operatorname{arctanh}\left(x^{-1}\right)\right) e^{tx+2-2\operatorname{arctanh}\left(x^{-1}\right)}}{\left(2+\operatorname{arctanh}\left(x^{-1}\right)\right)^5 \left(x^2-1\right)} \, dx_1$$

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

Probability Distribution Function

$$f(x) = 162 \frac{\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5 \sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

$$F(x) = 162 \int_{0}^{x} \frac{\left(4+\operatorname{arcsinh}\left(t^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(t^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(t^{-1}\right)\right)^5 \sqrt{t^2+1}\,|t|} \, dt$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 162 \int_{0}^{x} \frac{\left(4+\operatorname{arcsinh}\left(t^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(t^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(t^{-1}\right)\right)^5 \sqrt{t^2+1}\,|t|} \, dt$$

Hazard Function

$$h(x) = -162 \frac{\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5 \sqrt{x^2+1}\,|x|} \left(-1 + 162 \int_{0}^{x} \frac{\left(4+\operatorname{arcsinh}\left(t^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(t^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(t^{-1}\right)\right)^5 \sqrt{t^2+1}\,|t|}\right.$$

Mean

$$mu = 162 \int_{0}^{2\frac{e}{e^2-1}} \frac{\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5 \sqrt{x^2+1}} \, dx$$

Variance

$$sigma^2 = 162 \int_{0}^{2\frac{e}{e^2-1}} \frac{x\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right) e^{2-2\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5 \sqrt{x^2+1}} \, dx - 26244 \left(\int_{0}^{2\frac{e}{e^2-1}} \frac{\left(4+\operatorname{arcsinh}\left(x^{-1}\right.\right.}{\left(2+\operatorname{arcsinh}\left(x\right.\right.}\right.$$

Moment Function

$$m(x) = \int_0^{2\left(\mathrm{e}-\mathrm{e}^{-1}\right)^{-1}} 162\,\frac{x^r\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right)\mathrm{e}^{2-2\,\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5\sqrt{x^2+1}\,|x|}\,\mathrm{d}x$$

Moment Generating Function

$$\frac{162\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}}\frac{\left(4+\operatorname{arcsinh}\left(x^{-1}\right)\right)\mathrm{e}^{tx+2-2\,\operatorname{arcsinh}\left(x^{-1}\right)}}{\left(2+\operatorname{arcsinh}\left(x^{-1}\right)\right)^5\sqrt{x^2+1}x}\,\mathrm{d}x_1}{-}$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{\left(4+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{2-2\,\sinh\left(x^{-1}\right)}\cosh\left(x^{-1}\right)}{x^2\left(\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4+10\,\left(\cosh\left(x^{-1}\right)\right)^4+38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^2+60\,(\cos\right.}$$

Cumulative Distribution Function

$$F(x) = 1296\,1\mathrm{e}^{-\frac{1}{x}\left(\mathrm{e}^{2\,x^{-1}}x-2\,\mathrm{e}^{x^{-1}}x-4\,\mathrm{e}^{x^{-1}}-x\right)\mathrm{e}^{-x^{-1}}}\left(\mathrm{e}^{8\,x^{-1}}+16\,\mathrm{e}^{7\,x^{-1}}+92\,\mathrm{e}^{6\,x^{-1}}+208\,\mathrm{e}^{5\,x^{-1}}+70\,\mathrm{e}^{4\,x^{-1}}\right.$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1\left(-\mathrm{e}^{8\,x^{-1}}-16\,\mathrm{e}^{7\,x^{-1}}-92\,\mathrm{e}^{6\,x^{-1}}-208\,\mathrm{e}^{5\,x^{-1}}-70\,\mathrm{e}^{4\,x^{-1}}+208\,\mathrm{e}^{3\,x^{-1}}-92\,\mathrm{e}^{2\,x^{-1}}+16\,\mathrm{e}^{x^{-1}}+\right.$$

Hazard Function

$$h(x) = 162\,\frac{\left(4+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{2-2\,\sinh\left(x^{-1}\right)}\cosh\left(x^{-1}\right)}{x^2\left(\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4+10\,\left(\cosh\left(x^{-1}\right)\right)^4+38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^2+60\,(\cos\right.}$$

Mean

$$mu = 162\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{\left(4+\sinh\left(x^{-1}\right)\right)\mathrm{e}^{2-2\,\sinh\left(x^{-1}\right)}\cosh}{x\left(\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4+10\,\left(\cosh\left(x^{-1}\right)\right)^4+38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right.\right.}$$

Variance

$$sigma^2 = 162 \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} \frac{\left(4+\sinh\left(x^{-1}\right)\right) e^{2-2\,\sinh\left(x^{-1}\right)} \cos}{\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4 + 10\,\left(\cosh\left(x^{-1}\right)\right)^4 + 38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-}\right.\right.}$$

Moment Function

$$m(x) = \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} 162\,\frac{x^r\left(4+\sinh\left(x^{-1}\right)\right) e^{2-2\,\sinh\left(x^{-1}\right)} c}{x^2\left(\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4 + 10\,\left(\cosh\left(x^{-1}\right)\right)^4 + 38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x\right.\right.\right.}$$

Moment Generating Function

$$162 \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} \frac{\left(4+\sinh\left(x^{-1}\right)\right)\cosh\left(x^{-1}\right) e^{tx+2-2\,\sinh\left(x^{-1}\right.}}{x^2\left(\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^4 + 10\,\left(\cosh\left(x^{-1}\right)\right)^4 + 38\,\sinh\left(x^{-1}\right)\left(\cosh\left(x^{-1}\right)\right)^2 + \right.}$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)+5}{\left(\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)+3\right)^5\sqrt{x^2-2\,x+2}\left(x-1+\sqrt{x^2-2\,x+2}\right)^2}$$

Cumulative Distribution Function

$$F(x) = 162\int_1^x \frac{\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)+5}{\left(\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)+3\right)^5\sqrt{t^2-2\,t+2}\left(t-1+\sqrt{t^2-2\,t+2}\right)^2}\,dt$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1-162\int_1^x \frac{\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)+5}{\left(\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)+3\right)^5\sqrt{t^2-2\,t+2}\left(t-1+\sqrt{t^2-2\,t+2}\right)^2}\,dt$$

Hazard Function

$$h(x) = -162\,\frac{\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)+5}{\left(\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)+3\right)^5\sqrt{x^2-2\,x+2}\left(x-1+\sqrt{x^2-2\,x+2}\right)^2}\left(-1+162\int_1^x\right.$$

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

Probability Distribution Function

$$f(x) = -162\,\frac{(1+5\operatorname{arctanh}(x))(\operatorname{arctanh}(x))^2}{(1+3\operatorname{arctanh}(x))^5(x^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(x))^{-1}}$$

Cumulative Distribution Function

$$F(x) = -162\int_0^x \frac{(1+5\operatorname{arctanh}(t))(\operatorname{arctanh}(t))^2}{(1+3\operatorname{arctanh}(t))^5(t^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(t))^{-1}}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1+162\int_0^x \frac{(1+5\operatorname{arctanh}(t))(\operatorname{arctanh}(t))^2}{(1+3\operatorname{arctanh}(t))^5(t^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(t))^{-1}}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -162\,\frac{(1+5\operatorname{arctanh}(x))(\operatorname{arctanh}(x))^2}{(1+3\operatorname{arctanh}(x))^5(x^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(x))^{-1}}\Bigg(1+162\int_0^x \frac{(1+5\operatorname{arctanh}(t))\,(\mathrm{a}}{(1+3\operatorname{arctanh}(t))}$$

Mean

$$mu = -162\int_0^1 \frac{x\,(1+5\operatorname{arctanh}(x))(\operatorname{arctanh}(x))^2}{(1+3\operatorname{arctanh}(x))^5(x^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(x))^{-1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = -162\int_0^1 \frac{x^2\,(1+5\operatorname{arctanh}(x))(\operatorname{arctanh}(x))^2}{(1+3\operatorname{arctanh}(x))^5(x^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(x))^{-1}}\,\mathrm{d}x - 26244\left(\int_0^1 \frac{x\,(1+5\,\mathrm{a}}{(1+3}\right.$$

Moment Function

$$m(x) = \int_0^1 -162\,\frac{x^r\,(1+5\operatorname{arctanh}(x))(\operatorname{arctanh}(x))^2}{(1+3\operatorname{arctanh}(x))^5(x^2-1)}\mathrm{e}^{-2(\operatorname{arctanh}(x))^{-1}}\,\mathrm{d}x$$

Moment Generating Function

$$-162 \int_0^1 \frac{(1+5\,\mathrm{arctanh}\,(x))\,(\mathrm{arctanh}\,(x))^2}{(1+3\,\mathrm{arctanh}\,(x))^5\,(x^2-1)} \mathrm{e}^{\frac{tx\mathrm{arctanh}(x)-2}{\mathrm{arctanh}(x)}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 162\,\frac{(1+5\,\mathrm{arccsch}\,(x))\,(\mathrm{arccsch}\,(x))^2}{(1+3\,\mathrm{arccsch}\,(x))^5\,\sqrt{x^2+1}\,|x|} \mathrm{e}^{-2\,(\mathrm{arccsch}(x))^{-1}}$$

Cumulative Distribution Function

$$F(x) = 162 \int_0^x \frac{(1+5\,\mathrm{arccsch}\,(t))\,(\mathrm{arccsch}\,(t))^2}{(1+3\,\mathrm{arccsch}\,(t))^5\,\sqrt{t^2+1}\,|t|} \mathrm{e}^{-2\,(\mathrm{arccsch}(t))^{-1}}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 162 \int_0^x \frac{(1+5\,\mathrm{arccsch}\,(t))\,(\mathrm{arccsch}\,(t))^2}{(1+3\,\mathrm{arccsch}\,(t))^5\,\sqrt{t^2+1}\,|t|} \mathrm{e}^{-2\,(\mathrm{arccsch}(t))^{-1}}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -162\,\frac{(1+5\,\mathrm{arccsch}\,(x))\,(\mathrm{arccsch}\,(x))^2}{(1+3\,\mathrm{arccsch}\,(x))^5\,\sqrt{x^2+1}\,|x|} \mathrm{e}^{-2\,(\mathrm{arccsch}(x))^{-1}} \left(-1 + 162 \int_0^x \frac{(1+5\,\mathrm{arccsch}\,(t))\,(\mathrm{a}}{(1+3\,\mathrm{arccsch}\,(t))^5}\right.$$

Mean

$$mu = \int_0^\infty 162\,\frac{(1+5\,\mathrm{arccsch}\,(x))\,(\mathrm{arccsch}\,(x))^2}{(1+3\,\mathrm{arccsch}\,(x))^5\,\sqrt{x^2+1}} \mathrm{e}^{-2\,(\mathrm{arccsch}(x))^{-1}}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 162\,\frac{x\,(1+5\,\mathrm{arccsch}\,(x))\,(\mathrm{arccsch}\,(x))^2}{(1+3\,\mathrm{arccsch}\,(x))^5\,\sqrt{x^2+1}} \mathrm{e}^{-2\,(\mathrm{arccsch}(x))^{-1}}\,\mathrm{d}x - \left(\int_0^\infty 162\,\frac{(1+5\,\mathrm{arccsch}}{(1+3\,\mathrm{arccs}}\right.$$

Moment Function

$$m(x) = \int_0^\infty 162 \frac{x^r (1+5\,\mathrm{arccsch}(x))(\mathrm{arccsch}(x))^2}{(1+3\,\mathrm{arccsch}(x))^5 \sqrt{x^2+1}\,|x|} \mathrm{e}^{-2(\mathrm{arccsch}(x))^{-1}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 162 \frac{(1+5\,\mathrm{arccsch}(x))(\mathrm{arccsch}(x))^2}{(1+3\,\mathrm{arccsch}(x))^5 \sqrt{x^2+1}x} \mathrm{e}^{\frac{tx\mathrm{arccsch}(x)-2}{\mathrm{arccsch}(x)}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 162 \frac{(\sinh(x)+5)\,\mathrm{e}^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4 + 15\,(\cosh(x))^4 + 88\sinh(x)(\cosh(x))^2 + 240\,(\cosh(x))^2 + 316$$

Cumulative Distribution Function

$$F(x) = \frac{\mathrm{e}^{8x} + 24\,\mathrm{e}^{7x} + 212\,\mathrm{e}^{6x} + 792\,\mathrm{e}^{5x} + 870\,\mathrm{e}^{4x} - 1296\,\mathrm{e}^{(4x\mathrm{e}^x+1)\mathrm{e}^{-x}-\mathrm{e}^x} - 792\,\mathrm{e}^{3x} + 212\,\mathrm{e}^{2x} - 2}{\mathrm{e}^{8x} + 24\,\mathrm{e}^{7x} + 212\,\mathrm{e}^{6x} + 792\,\mathrm{e}^{5x} + 870\,\mathrm{e}^{4x} - 792\,\mathrm{e}^{3x} + 212\,\mathrm{e}^{2x} - 24\,\mathrm{e}^{x} + 1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left(-\mathrm{e}^{2\_Z} + 4\,\mathrm{e}^{\_Z}\ln(2) + 4\,\mathrm{e}^{\_Z}\ln(3) - \mathrm{e}^{\_Z}\ln\left(-\left(\mathrm{e}^{2\_Z} + 6\,\mathrm{e}^{\_Z} - 1\right)^4 (s-1)\right)$$

Survivor Function

$$S(x) = 1296 \frac{\mathrm{e}^{-\left(\mathrm{e}^{2x} - 4x\mathrm{e}^x - 1\right)\mathrm{e}^{-x}}}{\mathrm{e}^{8x} + 24\,\mathrm{e}^{7x} + 212\,\mathrm{e}^{6x} + 792\,\mathrm{e}^{5x} + 870\,\mathrm{e}^{4x} - 792\,\mathrm{e}^{3x} + 212\,\mathrm{e}^{2x} - 24\,\mathrm{e}^{x} + 1}$$

Hazard Function

$$h(x) = 1/8 \frac{(\sinh(x)+5)\,\mathrm{e}^{\left(\mathrm{e}^{2x} - 2\sinh(x)\mathrm{e}^x - 4x\mathrm{e}^x - 1\right)\mathrm{e}^{-x}}\cosh(x)\,(\mathrm{e}^{8x} + 24\,\mathrm{e}^{7x} + 212\,\mathrm{e}^{6x} + 792\,\mathrm{e}^{5x} + 8}{\sinh(x)(\cosh(x))^4 + 15\,(\cosh(x))^4 + 88\sinh(x)(\cosh(x))^2 + 240\,(\cosh}$$

Mean

$$mu = \int_0^\infty 162 \frac{x(\sinh(x)+5)\,\mathrm{e}^{-2\sinh(x)}\cosh(x)}{\sinh(x)(\cosh(x))^4 + 15\,(\cosh(x))^4 + 88\sinh(x)(\cosh(x))^2 + 240\,(\cosh(x))^2 + 3}$$

Variance

$$sigma^2 = \int_0^\infty 162 \frac{x^2 (\sinh(x) + 5) e^{-2 \sinh(x)} \cosh(x)}{\sinh(x) (\cosh(x))^4 + 15 (\cosh(x))^4 + 88 \sinh(x) (\cosh(x))^2 + 240 (\cosh(x))^2}$$

Moment Function

$$m(x) = \int_0^\infty 162 \frac{x^r (\sinh(x) + 5) e^{-2 \sinh(x)} \cosh(x)}{\sinh(x) (\cosh(x))^4 + 15 (\cosh(x))^4 + 88 \sinh(x) (\cosh(x))^2 + 240 (\cosh(x))^2 +}$$

Moment Generating Function

$$\int_0^\infty 162 \frac{(\sinh(x) + 5) \cosh(x) e^{tx - 2 \sinh(x)}}{\sinh(x) (\cosh(x))^4 + 15 (\cosh(x))^4 + 88 \sinh(x) (\cosh(x))^2 + 240 (\cosh(x))^2 + 316 \sin}$$