"HyperExponentialRV([1/2,1/2],[3,4])"

$$[x \mapsto 3/2\,\mathrm{e}^{-3\,x} + 2\,\mathrm{e}^{-4\,x}]$$

$$t \mapsto t^2$$

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2\,\left(2\,\mathrm{e}^{4\,\sqrt{x}} - \mathrm{e}^{\sqrt{x}} - 1\right)\mathrm{e}^{-4\,\sqrt{x}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

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

Hazard Function

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

Mean

$$\mu = \frac{25}{144}$$

Variance

$$\sigma^2 = \frac{3419}{20736}$$

Moment Function

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

Moment Generating Function

$$\lim_{x\to\infty} -1/4\,\frac{\sqrt{\pi}}{\sqrt{-t}}\mathrm{e}^{-4\,t^{-1}}\left(4\,\mathrm{erf}\left(\frac{t\sqrt{x}-2}{\sqrt{-t}}\right) + 3\,\mathrm{erf}\left(1/2\,\frac{2\,t\sqrt{x}-3}{\sqrt{-t}}\right)\mathrm{e}^{7/4\,t^{-1}} + 3\,\mathrm{e}^{7/4\,t^{-1}}\mathrm{erf}\left(3/2\,\frac{1}{\sqrt{-}}\right.\right.$$

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

Probability Distribution Function

$$f(x) = \mathrm{e}^{-3\,x^2}\left(3 + 4\,\mathrm{e}^{-x^2}\right)x$$

Cumulative Distribution Function

$$F(x) = 1/2\,\left(2\,\mathrm{e}^{4\,x^2} - \mathrm{e}^{x^2} - 1\right)\mathrm{e}^{-4\,x^2}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\left(\mathrm{e}^{x^2} + 1\right)\mathrm{e}^{-4\,x^2}$$

Hazard Function

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

Mean

$$\mu = 1/12\,\sqrt{3}\sqrt{\pi} + 1/8\,\sqrt{\pi}$$

Variance

$$\sigma^2 = \frac{7}{24} - \frac{7\,\pi}{192} - 1/48\,\sqrt{3}\pi$$

Moment Function

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

Moment Generating Function

$$1+1/12\,t\sqrt{\pi}\mathrm{e}^{1/12\,t^2}\sqrt{3}\mathrm{erf}\left(1/6\,t\sqrt{3}\right)+1/8\,t\sqrt{\pi}\mathrm{e}^{1/16\,t^2}\mathrm{erf}\left(t/4\right)+1/12\,t\sqrt{\pi}\mathrm{e}^{1/12\,t^2}\sqrt{3}+1/8\,t\sqrt{\pi}\mathrm{e}^{1/16\,t^2}$$

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2\,\left(\mathrm{e}^{x^{-1}} + 1\right)\mathrm{e}^{-4\,x^{-1}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\left(2\,\mathrm{e}^{4\,x^{-1}} - \mathrm{e}^{x^{-1}} - 1\right)\mathrm{e}^{-4\,x^{-1}}$$

Hazard Function

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

Mean

$$\mu = \infty$$

Variance

$$\sigma^2 = \mathit{undefined}$$

Moment Function

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

Moment Generating Function

$$\left(\sqrt{3}K_1\left(2\,\sqrt{-t}\sqrt{3}\right) + 2\,K_1\left(4\,\sqrt{-t}\right)\right)\sqrt{-t}_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,\mathrm{e}^{-3\,\tan(x)}\left(3 + 4\,\mathrm{e}^{-\tan(x)}\right)\left(1 + \left(\tan\left(x\right)\right)^2\right)$$

Cumulative Distribution Function

$$F(x) = \begin{cases} 1/2\,\left(2\,\mathrm{e}^{4\,\tan(x)} - \mathrm{e}^{\tan(x)} - 1\right)\mathrm{e}^{-4\,\tan(x)} & x \le \pi/2 \\ \infty & \pi/2 < x \end{cases}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = \begin{cases} 1/2\,\left(\mathrm{e}^{\tan(x)} + 1\right)\mathrm{e}^{-4\,\tan(x)} & x \le \pi/2 \\ -\infty & \pi/2 < x \end{cases}$$

Hazard Function

$$h(x) = \begin{cases} \frac{\left(3\,\mathrm{e}^{\tan(x)}+4\right)\left(1+(\tan(x))^2\right)}{\mathrm{e}^{\tan(x)}+1} & x \le \pi/2 \\ 0 & \pi/2 < x \end{cases}$$

Mean

$$\mu = 1/2\,\int_0^{\pi/2} \frac{x}{\left(\cos\left(x\right)\right)^2}\mathrm{e}^{-3\,\frac{\sin(x)}{\cos(x)}}\left(3 + 4\,\mathrm{e}^{-\frac{\sin(x)}{\cos(x)}}\right)\mathrm{d}x$$

Variance

$$\sigma^2 = 1/2\,\int_0^{\pi/2} \frac{x^2}{\left(\cos\left(x\right)\right)^2}\mathrm{e}^{-3\,\frac{\sin(x)}{\cos(x)}}\left(3 + 4\,\mathrm{e}^{-\frac{\sin(x)}{\cos(x)}}\right)\mathrm{d}x - 1/4\,\left(\int_0^{\pi/2} \frac{x}{\left(\cos\left(x\right)\right)^2}\mathrm{e}^{-3\,\frac{\sin(x)}{\cos(x)}}\left(3 + 4\,\mathrm{e}^{-\frac{\sin(x)}{\cos(x)}}\right.\right.$$

Moment Function

$$m(x) = \int_0^{\pi/2} 1/2\,x^r\mathrm{e}^{-3\,\tan(x)}\left(3 + 4\,\mathrm{e}^{-\tan(x)}\right)\left(1 + \left(\tan\left(x\right)\right)^2\right)\,\mathrm{d}x$$

Moment Generating Function

$$1/2\,\int_0^{\pi/2} \frac{1}{\left(\cos\left(x\right)\right)^2}\left(4\,\mathrm{e}^{-\frac{-tx\,\cos(x)+4\,\sin(x)}{\cos(x)}} + 3\,\mathrm{e}^{-\frac{-tx\,\cos(x)+3\,\sin(x)}{\cos(x)}}\right)\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,\frac{3\,x+4}{x^5}$$

Cumulative Distribution Function

$$F(x) = 1/2\,\frac{2\,x^4 - x - 1}{x^4}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\frac{x+1}{x^4}$$

Hazard Function

$$h(x) = \frac{3\,x+4}{x\,(x+1)}$$

Mean

$$\mu = \frac{17}{12}$$

Variance

$$\sigma^2 = \frac{71}{144}$$

Moment Function

$$m(x) = \lim_{x\to\infty} 1/2\,\frac{3\,x^{r-4}r\,x + 4\,r\,x^{r-4} - 12\,x^{r-4}x - 12\,x^{r-4} - 7\,r + 24}{(-3+r)\,(r-4)}$$

Moment Generating Function

$$\lim_{x\to\infty} 1/12\,\frac{-Ei\,(1,-tx)\,t^4x^4 + Ei\,(1,-t)\,t^4x^4 + \mathrm{e}^t t^3x^4 - 3\,Ei\,(1,-tx)\,t^3x^4 + 3\,Ei\,(1,-t)\,t^3x^4 + 4\,\mathrm{e}}{}$$

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2 \left(2\,\mathrm{e}^{4\,\mathrm{e}^{x}} - \mathrm{e}^{\mathrm{e}^{x}} - 1\right)\mathrm{e}^{-4\,\mathrm{e}^{x}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2 \left(\mathrm{e}^{\mathrm{e}^{x}} + 1\right)\mathrm{e}^{-4\,\mathrm{e}^{x}}$$

Hazard Function

$$h(x) = \frac{\left(3\,\mathrm{e}^{\mathrm{e}^{x}} + 4\right)\mathrm{e}^{x}}{\mathrm{e}^{\mathrm{e}^{x}} + 1}$$

Mean

$$\mu = \int_{-\infty}^{\infty} 1/2\,x\mathrm{e}^{-3\,\mathrm{e}^{x}+x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{x}}\right)\,\mathrm{d}x$$

Variance

$$\sigma^2 = \int_{-\infty}^{\infty} 1/2\,x^2\mathrm{e}^{-3\,\mathrm{e}^{x}+x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{x}}\right)\,\mathrm{d}x - \left(\int_{-\infty}^{\infty} 1/2\,x\mathrm{e}^{-3\,\mathrm{e}^{x}+x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{x}}\right)\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 1/2\,x^r\mathrm{e}^{-3\,\mathrm{e}^{x}+x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{x}}\right)\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 1/2\,\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{x}}\right)\mathrm{e}^{tx-3\,\mathrm{e}^{x}+x}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,x^2\,(3 + 4\,x)$$

Cumulative Distribution Function

$$F(x) = 1/2\,x^4 + 1/2\,x^3$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1 - 1/2\,x^4 - 1/2\,x^3$$

Hazard Function

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

Mean

$$\mu = \frac{31}{40}$$

Variance

$$\sigma^2 = \frac{157}{4800}$$

Moment Function

$$m(x) = 1/2\,\frac{7\,r + 24}{r^2 + 7\,r + 12}$$

Moment Generating Function

$$1/2\,\frac{7\,\mathrm{e}^t t^3 - 18\,\mathrm{e}^t t^2 + 30\,\mathrm{e}^t t - 24\,\mathrm{e}^t - 6\,t + 24}{t^4}_{1}$$

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2\,\left(\mathrm{e}^{\mathrm{e}^{-x}} + 1\right)\mathrm{e}^{-4\,\mathrm{e}^{-x}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\left(2\,\mathrm{e}^{4\,\mathrm{e}^{-x}} - \mathrm{e}^{\mathrm{e}^{-x}} - 1\right)\mathrm{e}^{-4\,\mathrm{e}^{-x}}$$

Hazard Function

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

Mean

$$\mu = \int_{-\infty}^{\infty} 1/2\, x \mathrm{e}^{-3\,\mathrm{e}^{-x}-x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{-x}}\right)\,\mathrm{d}x$$

Variance

$$\sigma^2 = \int_{-\infty}^{\infty} 1/2\, x^2 \mathrm{e}^{-3\,\mathrm{e}^{-x}-x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{-x}}\right)\,\mathrm{d}x - \left(\int_{-\infty}^{\infty} 1/2\, x \mathrm{e}^{-3\,\mathrm{e}^{-x}-x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{-x}}\right)\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 1/2\, x^r \mathrm{e}^{-3\,\mathrm{e}^{-x}-x}\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{-x}}\right)\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} 1/2\,\left(3 + 4\,\mathrm{e}^{-\mathrm{e}^{-x}}\right)\mathrm{e}^{tx-3\,\mathrm{e}^{-x}-x}\,\mathrm{d}x_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1 - 1/2\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} - 1/2\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 1/2\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}$$

Hazard Function

$$h(x) = \frac{\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x}}{\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + \mathrm{e}^{-4\,\mathrm{e}^{x}+4}}$$

Mean

$$\mu = \int_{0}^{\infty} 1/2\,x\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x}\,\mathrm{d}x$$

Variance

$$\sigma^2 = \int_{0}^{\infty} 1/2\,x^2\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x}\,\mathrm{d}x - \left(\int_{0}^{\infty} 1/2\,x\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_{0}^{\infty} 1/2\,x^{r}\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{0}^{\infty} 1/2\,\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x}+3} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x}+4}\right)\mathrm{e}^{x(t+1)}\,\mathrm{d}x_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1 - 1/2\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} - 1/2\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+8}$$

Hazard Function

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

Mean

$$\mu = 1/2\int_0^{(\ln(2))^{-1}} \frac{\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+8}\right)\mathrm{e}^{x^{-1}}}{x}\,\mathrm{d}x$$

Variance

$$\sigma^2 = 1/2\int_0^{(\ln(2))^{-1}} \left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+8}\right)\mathrm{e}^{x^{-1}}\,\mathrm{d}x - 1/4\left(\int_0^{(\ln(2))^{-1}} \frac{\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+}\right.\right.$$

$$x$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}} 1/2\,\frac{x^r\left(3\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+8}\right)\mathrm{e}^{x^{-1}}}{x^2}\,\mathrm{d}x$$

Moment Generating Function

$$1/2\int_0^{(\ln(2))^{-1}} \frac{3\,\mathrm{e}^{-3\,\mathrm{e}^{x^{-1}}+6} + 4\,\mathrm{e}^{-4\,\mathrm{e}^{x^{-1}}+8}}{x^2}\mathrm{e}^{\frac{tx^2+1}{x}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,\frac{-4\,x + 3\,\sqrt{-x^2+1} + 4}{(x+1)^3}$$

Cumulative Distribution Function

$$F(x) = 1/2\,\frac{x^2 + x\sqrt{-x^2+1} + 6\,x - \sqrt{-x^2+1} + 1}{x^2 + 2\,x + 1}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left(\left(2\,s^2 - 2\,s + 1\right)\_Z^4 + \left(8\,s^2 - 16\,s + 5\right)\_Z^3 + \left(12\,s^2 - 28\,s + 19\right)\_Z^2 + \left(8\,s\right.\right.$$

Survivor Function

$$S(x) = -1/2\,\frac{x\sqrt{-x^2+1} - x^2 - \sqrt{-x^2+1} + 2\,x - 1}{x^2 + 2\,x + 1}$$

Hazard Function

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

Mean

$$\mu = 4 - 3/4\,\pi - 2\,\ln(2)$$

Variance

$$\sigma^2 = -\frac{25}{2} + 9/4\,\pi + 8\,\ln(2) - (4 - 3/4\,\pi - 2\,\ln(2))^2$$

Moment Function

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

Moment Generating Function

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

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

Probability Distribution Function

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

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left((16\,s-16)\,\_Z^4 + (-8\,s+8)\,\_Z^3 + (16\,s-16)\,\_Z^2 + (-6\,s+7)\,\_Z + 2\,s^2 -\right.$$

Survivor Function

$$S(x) = 1/2+2\sqrt{x^2+1}x^2+1/2\sqrt{x^2+1}-2x^3-3/2x-4\sqrt{x^2+1}x^3-2\sqrt{x^2+1}x+4x^4+4x^2$$

Hazard Function

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

Mean

$$\mu = 1/16\,\frac{3\pi+32\,G_{3,3}^{2,3}\left(1\,\middle|\,\begin{matrix}-2,-3/2,-1\\-1/2,-3/2,-9/2\end{matrix}\right)}{\pi}$$

Variance

$$\sigma^2 = \frac{1}{\pi}\left(3/2\,G_{3,3}^{2,3}\left(1\,\middle|\,\begin{matrix}-2,-3/2,0\\-1/2,-1/2,-9/2\end{matrix}\right)+\frac{83\pi}{420}\right)-\frac{\left(3\pi+32\,G_{3,3}^{2,3}\left(1\,\middle|\,\begin{matrix}-2,-3/2,-1\\-1/2,-3/2,-9/2\end{matrix}\right)\right)^2}{256\pi^2}$$

Moment Function

$$m(x) = 3/2\,\frac{1}{\pi}\left(-2\sqrt{\pi}\Gamma\left(3/2+r/2\right)\Gamma\left(-1-r/2\right){}_3\mathrm{F}_2(-3/2,5/2,3/2+r/2;\,3/2,2+r/2;\,1)-1\right.$$

Moment Generating Function

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

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

Probability Distribution Function

$$f(x) = 1/2\,\mathrm{e}^{-3\sinh(x)}\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh(x)$$

Cumulative Distribution Function

$$F(x) = -1/2\,\mathrm{e}^{-3/2\left(\mathrm{e}^{2x}-1\right)\mathrm{e}^{-x}}+1-1/2\,\mathrm{e}^{-2\left(\mathrm{e}^{2x}-1\right)\mathrm{e}^{-x}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2\,\mathrm{e}^{-3/2\left(\mathrm{e}^{2\,x}-1\right)\mathrm{e}^{-x}} + 1/2\,\mathrm{e}^{-2\left(\mathrm{e}^{2\,x}-1\right)\mathrm{e}^{-x}}$$

Hazard Function

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

Mean

$$\mu = \int_0^\infty 1/2\,x\mathrm{e}^{-3\,\sinh(x)}\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh\left(x\right)\,\mathrm{d}x$$

Variance

$$\sigma^2 = \int_0^\infty 1/2\,x^2\mathrm{e}^{-3\,\sinh(x)}\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh\left(x\right)\,\mathrm{d}x - \left(\int_0^\infty 1/2\,x\mathrm{e}^{-3\,\sinh(x)}\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh$$

Moment Function

$$m(x) = \int_0^\infty 1/2\,x^r\mathrm{e}^{-3\,\sinh(x)}\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh\left(x\right)\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 1/2\,\left(4\,\mathrm{e}^{-\sinh(x)}+3\right)\cosh\left(x\right)\mathrm{e}^{tx-3\,\sinh(x)}\,\mathrm{d}x_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

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

Hazard Function

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

Mean

$$\mu = 1/2 \int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{3\,\mathrm{e}^{3-3\,\mathrm{arccsch}(x)} + 4\,\mathrm{e}^{4-4\,\mathrm{arccsch}(x)}}{\sqrt{x^2+1}}\,\mathrm{d}x$$

Variance

$$\sigma^2 = 1/2 \int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{x\left(3\,\mathrm{e}^{3-3\,\mathrm{arccsch}(x)} + 4\,\mathrm{e}^{4-4\,\mathrm{arccsch}(x)}\right)}{\sqrt{x^2+1}}\,\mathrm{d}x - 1/4 \left(\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{3\,\mathrm{e}^{3-3\,\mathrm{arccsch}(x)} + 4\,\mathrm{e}^{4-4\,\mathrm{arccsc}}}{\sqrt{x^2+1}}\right.$$

Moment Function

$$m(x) = \int_0^{2\left(\mathrm{e}-\mathrm{e}^{-1}\right)^{-1}} 1/2\,\frac{x^r\left(3\,\mathrm{e}^{3-3\,\mathrm{arccsch}(x)} + 4\,\mathrm{e}^{4-4\,\mathrm{arccsch}(x)}\right)}{\sqrt{x^2+1}\,|x|}\,\mathrm{d}x$$

Moment Generating Function

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

$$t \mapsto \mathrm{arccsch}\,(t+1)$$

Probability Distribution Function

$$f(x) = 1/2\,\frac{\cosh(x)}{(\sinh(x))^2}\mathrm{e}^{3\,\frac{\sinh(x)-1}{\sinh(x)}}\left(4\,\mathrm{e}^{\frac{\sinh(x)-1}{\sinh(x)}} + 3\right)$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 1/2\,\mathrm{e}^{3\,\frac{\mathrm{e}^{2\,x}-2\,\mathrm{e}^{x}-1}{\mathrm{e}^{2\,x}-1}} - 1/2\,\mathrm{e}^{4\,\frac{\mathrm{e}^{2\,x}-2\,\mathrm{e}^{x}-1}{\mathrm{e}^{2\,x}-1}}$$

Hazard Function

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

Mean

$$\mu = \int_{0}^{\ln\left(1+\sqrt{2}\right)} \frac{\cosh\left(x\right)x}{-1+\cosh\left(2\,x\right)}\mathrm{e}^{3\,\frac{\sinh(x)-1}{\sinh(x)}}\left(4\,\mathrm{e}^{\frac{\sinh(x)-1}{\sinh(x)}}+3\right)\mathrm{d}x$$

Variance

$$\sigma^2 = \int_{0}^{\ln\left(1+\sqrt{2}\right)} \frac{\cosh\left(x\right)x^{2}}{-1+\cosh\left(2\,x\right)}\mathrm{e}^{3\,\frac{\sinh(x)-1}{\sinh(x)}}\left(4\,\mathrm{e}^{\frac{\sinh(x)-1}{\sinh(x)}}+3\right)\mathrm{d}x - \left(\int_{0}^{\ln\left(1+\sqrt{2}\right)} \frac{\cosh\left(x\right)x}{-1+\cosh\left(2\,x\right)}\mathrm{e}^{3\,\frac{\sinh(x}$$

Moment Function

$$m(x) = \int_{0}^{\ln\left(1+\sqrt{2}\right)} 1/2\,\frac{x^{r}\cosh\left(x\right)}{\left(\sinh\left(x\right)\right)^{2}}\mathrm{e}^{3\,\frac{\sinh(x)-1}{\sinh(x)}}\left(4\,\mathrm{e}^{\frac{\sinh(x)-1}{\sinh(x)}}+3\right)\mathrm{d}x$$

Moment Generating Function

$$\int_{0}^{\ln\left(1+\sqrt{2}\right)} \frac{\cosh\left(x\right)}{-1+\cosh\left(2\,x\right)}\left(4\,\mathrm{e}^{\frac{tx\,\sinh(x)+4\,\sinh(x)-4}{\sinh(x)}}+3\,\mathrm{e}^{\frac{tx\,\sinh(x)+3\,\sinh(x)-3}{\sinh(x)}}\right)\mathrm{d}x_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1 - 1/2 \int_1^x \frac{3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(t^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(t^{-1}\right)}}{t^2-1}\,\mathrm{d}t$$

Hazard Function

$$h(x) = -\frac{3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(x^{-1}\right)}}{x^2-1}\left(-2 + \int_1^x \frac{3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(t^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(t^{-1}\right)}}{t^2-1}\,\mathrm{d}t\right)$$

Mean

$$\mu = 1/2 \int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\left(3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(x^{-1}\right)}\right)}{x^2-1}\,\mathrm{d}x$$

Variance

$$\sigma^2 = 1/2 \int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x^2\left(3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(x^{-1}\right)}\right)}{x^2-1}\,\mathrm{d}x - 1/4\left(\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\left(3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} +\right.}{x^2-}\right.$$

Moment Function

$$m(x) = \int_1^{\frac{\mathrm{e}+\mathrm{e}^{-1}}{\mathrm{e}-\mathrm{e}^{-1}}} 1/2\,\frac{x^r\left(3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(x^{-1}\right)}\right)}{x^2-1}\,\mathrm{d}x$$

Moment Generating Function

$$1/2 \int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{\mathrm{e}^{tx}\left(3\,\mathrm{e}^{3-3\,\mathrm{arctanh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arctanh}\left(x^{-1}\right)}\right)}{x^2-1}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,\frac{3\,\mathrm{e}^{3-3\,\mathrm{arcsinh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arcsinh}\left(x^{-1}\right)}}{\sqrt{x^2+1}\,|x|}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left(\left(\mathrm{e}^8 - 4\,\mathrm{e}^4 s - \mathrm{e}^6 + 4\,s^2\right)\_Z^4 + \left(2\,\mathrm{e}^7 + 12\,\mathrm{e}^3 s\right)\_Z^3 - 32\,\mathrm{e}^4 s\_Z^2 + 16\,\mathrm{e}^3 s\_Z -$$

Survivor Function

$$S(x) = -1/2\,\frac{\mathrm{e}^4 x^4 + \sqrt{x^2+1}\mathrm{e}^3 x^3 + \mathrm{e}^3 x^3 - 2\,x^4 - 8\,\sqrt{x^2+1}x^2 - 16\,x^2 - 16\,\sqrt{x^2+1} - 16}{x^4 + 8\,x^2 + 8 + 4\,\sqrt{x^2+1}x^2 + 8\,\sqrt{x^2+1}}$$

Hazard Function

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

Mean

$$\mu = 1/2\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{3\,\mathrm{e}^{3-3\,\mathrm{arcsinh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arcsinh}\left(x^{-1}\right)}}{\sqrt{x^2+1}}\,\mathrm{d}x$$

Variance

$$\sigma^2 = 1/2\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{x\left(3\,\mathrm{e}^{3-3\,\mathrm{arcsinh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arcsinh}\left(x^{-1}\right)}\right)}{\sqrt{x^2+1}}\,\mathrm{d}x - 1/4\left(\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{3\,\mathrm{e}^{3-3\,\mathrm{arcsinh}\left(x^{-1}\right)} + 4\,\mathrm{e}\right.$$

Moment Function

$$m(x) = \int_0^{2\left(\mathrm{e}-\mathrm{e}^{-1}\right)^{-1}} 1/2\,\frac{x^r\left(3\,\mathrm{e}^{3-3\,\mathrm{arcsinh}\left(x^{-1}\right)} + 4\,\mathrm{e}^{4-4\,\mathrm{arcsinh}\left(x^{-1}\right)}\right)}{\sqrt{x^2+1}\,|x|}\,\mathrm{d}x$$

Moment Generating Function

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

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

Probability Distribution Function

$$f(x) = 1/2\,\frac{\left(3\,\mathrm{e}^{3-3\,\sinh\left(x^{-1}\right)}+4\,\mathrm{e}^{4-4\,\sinh\left(x^{-1}\right)}\right)\cosh\left(x^{-1}\right)}{x^2}$$

Cumulative Distribution Function

$$F(x) = 1/2\,\left(\mathrm{e}^{1/2\left(4\,\mathrm{e}^{2\,x^{-1}}+6\,\mathrm{e}^{x^{-1}}+3\right)\mathrm{e}^{-x^{-1}}}+\mathrm{e}^{1/2\left(3\,\mathrm{e}^{2\,x^{-1}}+8\,\mathrm{e}^{x^{-1}}+4\right)\mathrm{e}^{-x^{-1}}}\right)\mathrm{e}^{-7/2\,\mathrm{e}^{x^{-1}}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1-1/2\,\mathrm{e}^{3/2\left(-\mathrm{e}^{2\,x^{-1}}+2\,\mathrm{e}^{x^{-1}}+1\right)\mathrm{e}^{-x^{-1}}}-1/2\,\mathrm{e}^{2\left(-\mathrm{e}^{2\,x^{-1}}+2\,\mathrm{e}^{x^{-1}}+1\right)\mathrm{e}^{-x^{-1}}}$$

Hazard Function

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

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = -11-34\,x^2+18\,x^3-4\,x^4+\frac{63\,x}{2}+18\,\sqrt{x^2-2\,x+2}x-17/2\,\sqrt{x^2-2\,x+2}-14\,\sqrt{x^2-2\,x+$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathit{RootOf}\left((16\,s-16)\,\_Z^4+(-72\,s+72)\,\_Z^3+(136\,s-136)\,\_Z^2+(-126\,s+127)\,\_Z\right.$$

Survivor Function

$$S(x) = 12+34\,x^2-18\,x^3+4\,x^4-\frac{63\,x}{2}-18\,\sqrt{x^2-2\,x+2}x+17/2\,\sqrt{x^2-2\,x+2}+14\,\sqrt{x^2-2\,x+2}x$$

Hazard Function

$$h(x) = -\frac{3\,x+1+3\,\sqrt{x^2-2\,x}}{\left(x-1+\sqrt{x^2-2\,x+2}\right)^4\sqrt{x^2-2\,x+2}\left(8\,\sqrt{x^2-2\,x+2}x^3-8\,x^4-28\,\sqrt{x^2-2\,x+2}x\right.}$$

Mean

$$\mu = \frac{317}{240}$$

Variance

$$\sigma^2 = \frac{10391}{57600}$$

Moment Function

$$m(x) = \int_1^{\infty} 1/2\,\frac{x^r\left(3\,x+1+3\,\sqrt{x^2-2\,x+2}\right)}{\left(x-1+\sqrt{x^2-2\,x+2}\right)^4\sqrt{x^2-2\,x+2}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_1^{\infty} 1/2\,\frac{\mathrm{e}^{tx}\left(3\,x+1+3\,\sqrt{x^2-2\,x+2}\right)}{\left(x-1+\sqrt{x^2-2\,x+2}\right)^4\sqrt{x^2-2\,x+2}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2 \left(\mathrm{e}^{2\,(\ln(x+1)-\ln(1-x))^{-1}} + 1\right) \mathrm{e}^{-8\,(\ln(x+1)-\ln(1-x))^{-1}}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2 \left(2\,\mathrm{e}^{8\,(\ln(x+1)-\ln(1-x))^{-1}} - \mathrm{e}^{2\,(\ln(x+1)-\ln(1-x))^{-1}} - 1\right) \mathrm{e}^{-8\,(\ln(x+1)-\ln(1-x))^{-1}}$$

Hazard Function

$$h(x) = -\frac{1}{(\operatorname{arctanh}(x))^2\,(x^2-1)} \mathrm{e}^{\frac{-3\,\ln(x+1)+3\,\ln(1-x)+8\,\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)(\ln(x+1)-\ln(1-x))}} \left(3 + 4\,\mathrm{e}^{-(\operatorname{arctanh}(x))^{-1}}\right) \left(2\,\mathrm{e}^{8\,(\ln(x+1)-\ln(1}\right.$$

Mean

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

Variance

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

Moment Function

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

Moment Generating Function

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