"LogNormalRV(1, 2)"

$$[x \mapsto 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(x)-1)^2}}{\sqrt{\pi}x}]$$

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = 1/8\,\frac{\sqrt{2}\mathrm{e}^{-1/32\,(\ln(x)-2)^2}}{\sqrt{\pi}x}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathrm{e}^{2+4\,\sqrt{2}RootOf(-\mathrm{erf}(\_Z)-1+2\,s)}]$$

Survivor Function

$$S(x) = 1/2 - 1/2\,\mathrm{erf}\left(1/8\,\sqrt{2}\,(\ln(x)-2)\right)$$

Hazard Function

$$h(x) = -1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/32\,(\ln(x)-2)^2}}{\sqrt{\pi}x\left(-1+\mathrm{erf}\left(1/8\,\sqrt{2}\,(\ln(x)-2)\right)\right)}$$

Mean

$$mu = \mathrm{e}^{10}$$

Variance

$$sigma^2 = \mathrm{e}^{36} - \mathrm{e}^{20}$$

Moment Function

$$m(x) = \mathrm{e}^{8\,r^2+2\,r}$$

Moment Generating Function

$$\int_0^{\infty} 1/8\,\frac{\sqrt{2}\mathrm{e}^{-1/8-1/32\,(\ln(x))^2+tx}}{\sqrt{\pi}}x^{-\frac{7}{8}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(x^2\right)-1\right)^2}}{\sqrt{\pi}x}$$

Cumulative Distribution Function

$$F(x) = 1/2 + 1/2\,\mathrm{erf}\,\left(1/4\,\sqrt{2}\,(2\,\ln{(x)} - 1)\right)$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = 1/2 - 1/2\,\mathrm{erf}\,\left(1/4\,\sqrt{2}\,(2\,\ln{(x)} - 1)\right)$$

Hazard Function

$$h(x) = -\frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(x^2\right)-1\right)^2}}{\sqrt{\pi}x\,\left(-1 + \mathrm{erf}\,\left(1/4\,\sqrt{2}\,(2\,\ln{(x)} - 1)\right)\right)}$$

Mean

$$mu = \mathrm{e}$$

Variance

$$sigma^2 = \mathrm{e}^3 - \mathrm{e}^2$$

Moment Function

$$m(x) = \int_0^\infty 1/2\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(x^2\right)-1\right)^2}}{\sqrt{\pi}x}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8-1/2\,(\ln(x))^2+tx}}{\sqrt{\pi}\sqrt{x}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(x^{-1}\right)-1\right)^2}}{\sqrt{\pi}x}$$

Cumulative Distribution Function

$$F(x) = 1/2 + 1/2\,\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(x)+1)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathrm{e}^{-1+2\,\sqrt{2}RootOf(-\mathrm{erf}(\_Z)-1+2\,s)}]$$

Survivor Function

$$S(x) = 1/2 - 1/2\,\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(x)+1)\right)$$

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(x^{-1}\right)-1\right)^2}}{\sqrt{\pi}x\left(-1+\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(x)+1)\right)\right)}$$

Mean

$$mu = \mathrm{e}$$

Variance

$$sigma^2 = \mathrm{e}^6 - \mathrm{e}^2$$

Moment Function

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

Moment Generating Function

$$\int_0^\infty 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8-1/8\,(\ln(x))^2+tx}}{\sqrt{\pi}x^{5/4}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\tan(x))-1)^2}\left(1+(\tan(x))^2\right)}{\sqrt{\pi}\tan(x)}$$

Cumulative Distribution Function

$$F(x) = 1/2 + 1/2\,\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(\tan(x))-1)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[\arctan \circ s \mapsto \mathrm{e}^{1+2\,\sqrt{2}RootOf(-\mathrm{erf}(\_Z)-1+2\,s)}\right]$$

Survivor Function

$$S(x) = 1/2 - 1/2\,\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(\tan(x))-1)\right)$$

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\tan(x))-1)^2}\left(1+(\tan(x))^2\right)}{\sqrt{\pi}\tan(x)\left(-1+\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(\tan(x))-1)\right)\right)}$$

Mean

$$mu = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^{\pi/2}\frac{\mathrm{e}^{-1/8\,(\ln(\sin(x))-\ln(\cos(x))-1)^2}x}{\sin(x)\cos(x)}\,\mathrm{d}x$$

Variance

$$sigma^2 = 1/8\,\frac{1}{\pi^{3/2}}\left(2\,\sqrt{2}\int_0^{\pi/2}\frac{\mathrm{e}^{-1/8\,(\ln(\sin(x))-\ln(\cos(x))-1)^2}x^2}{\sin(x)\cos(x)}\,\mathrm{d}x\pi - \left(\int_0^{\pi/2}\frac{\mathrm{e}^{-1/8\,(\ln(\sin(x))-\ln(\cos(x))-}}{\sin(x)\cos(x)}\right.\right.$$

Moment Function

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

Moment Generating Function

$$1/4\,{\frac {\sqrt {2}}{\sqrt {\pi }}\int _{0}^{\pi/2}\!{\frac { \left(\cos \left(x \right) \right) ^{1/4\,\ln \left(\sin \left(x \right) \right) -5/4}{{\rm e}^{-1/8+tx-1/8\, \left(\ln \left(\sin \left(x \right) \right) \right) ^{2}-1/8\, \left(\ln \left(\cos \left(x \right) \right) \right) ^{2}}}}{ \left(\sin \left(x \right) \right) ^{3/4}}}\,{\rm d}x}_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,{\frac {\sqrt {2}{{\rm e}^{-1/8\, \left(\ln \left(\ln \left(x \right) \right) -1 \right) ^{2}}}}{\sqrt {\pi }\ln \left(x \right) x}}$$

Cumulative Distribution Function

$$F(x) = 1/2+1/2\,{\rm erf} \left(1/4\,\sqrt {2} \left(\ln \left(\ln \left(x \right) \right) -1 \right) \right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = [\exp \circ s \mapsto {\rm e}^{1+2\,\sqrt {2}{\it RootOf} \left(-{\rm erf} \left({\it \_Z} \right) -1+2\,s \right) }]$$

Survivor Function

$$S(x) = 1/2-1/2\,{\rm erf} \left(1/4\,\sqrt {2} \left(\ln \left(\ln \left(x \right) \right) -1 \right) \right)$$

Hazard Function

$$h(x) = -1/2\,{\frac {\sqrt {2}{{\rm e}^{-1/8\, \left(\ln \left(\ln \left(x \right) \right) -1 \right) ^{2}}}}{\sqrt {\pi }\ln \left(x \right) x \left(-1+{\rm erf} \left(1/4\,\sqrt {2} \left(\ln \left(\ln \left(x \right) \right) -1 \right) \right) \right) }}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int _{1}^{\infty }\!1/4\,{\frac {\sqrt {2}{{\rm e}^{-1/8-1/8\, \left(\ln \left(\ln \left(x \right) \right) \right) ^{2}+tx}}}{\sqrt {\pi } \left(\ln \left(x \right) \right) ^{3/4}x}}\,{\rm d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}e^{-1/8\,(x-1)^2}}{\sqrt{\pi}}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

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

Survivor Function

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

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}e^{-1/8\,(x-1)^2}}{\sqrt{\pi}\left(-1 + \mathrm{erf}\left(1/4\,x\sqrt{2} - 1/4\,\sqrt{2}\right)\right)}$$

Mean

$$mu = 1$$

Variance

$$sigma^2 = 4$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 1/4\,\frac{x^r\sqrt{2}e^{-1/8\,(x-1)^2}}{\sqrt{\pi}}\,\mathrm{d}x$$

Moment Generating Function

$${e^{t(2\,t+1)}}_1$$

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

Probability Distribution Function

$$f(x) = -1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(-\ln(x))-1)^2}}{\sqrt{\pi}\ln(x)\,x}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathrm{e}^{-\mathrm{e}^{1+2\,\sqrt{2}RootOf(\mathrm{erf}(\_Z)-1+2\,s)}}]$$

Survivor Function

$$S(x) = 1/2 + 1/2\,\mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(-\ln(x)) - 1)\right)$$

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(-\ln(x))-1)^2}}{\sqrt{\pi}\ln(x)\,x\left(1 + \mathrm{erf}\left(1/4\,\sqrt{2}\,(\ln(-\ln(x)) - 1)\right)\right)}$$

Mean

$$mu = -1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^1 \frac{\mathrm{e}^{-1/8\,(\ln(-\ln(x))-1)^2}}{\ln(x)}\,\mathrm{d}x$$

Variance

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

Moment Function

$$m(x) = \int_0^1 -1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,(\ln(-\ln(x))-1)^2}}{\sqrt{\pi}\ln(x)\,x}\,\mathrm{d}x$$

Moment Generating Function

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

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

Probability Distribution Function

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

Cumulative Distribution Function

$$F(x) = 1/2 + 1/2\,\mathrm{erf}\left(1/4\,x\sqrt{2} + 1/4\,\sqrt{2}\right)$$

Inverse Cumulative Distribution Function

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

Survivor Function

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

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(x+1)^2}}{\sqrt{\pi}\left(-1 + \mathrm{erf}\left(1/4\,x\sqrt{2} + 1/4\,\sqrt{2}\right)\right)}$$

Mean

$$mu = -1$$

Variance

$$sigma^2 = 4$$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,(x+1)^2}}{\sqrt{\pi}}\,\mathrm{d}x$$

Moment Generating Function

$$\mathrm{e}^{t(2\,t-1)}{}_1$$

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

Probability Distribution Function

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

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function
Survivor Function

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

Hazard Function

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

Mean

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

Variance

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

Moment Function

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

Moment Generating Function

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

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}\,(e^{x^{-1}}-2)\,x^2}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2 x-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}$$

Cumulative Distribution Function

$$F(x) = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^x \frac{1}{(e^{t^{-1}}-2)\,t^2}e^{-1/8\,\frac{\left(\ln\left(e^{t^{-1}}-2\right)\right)^2 t-2\,\ln\left(e^{t^{-1}}-2\right)t+t-8}{t}}\,dt$$

Inverse Cumulative Distribution Function

Survivor Function

$$S(x) = 1/4\,\frac{1}{\sqrt{\pi}}\left(-\sqrt{2}\int_0^x \frac{1}{(e^{t^{-1}}-2)\,t^2}e^{-1/8\,\frac{\left(\ln\left(e^{t^{-1}}-2\right)\right)^2 t-2\,\ln\left(e^{t^{-1}}-2\right)t+t-8}{t}}\,dt+4\sqrt{\pi}\right)$$

Hazard Function

$$h(x) = \frac{\sqrt{2}}{(e^{x^{-1}}-2)\,x^2}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2 x-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}\left(-\sqrt{2}\int_0^x \frac{1}{(e^{t^{-1}}-2)\,t^2}e^{-1/8\,\frac{\left(\ln\left(e^{t^{-1}}-2\right)\right)^2 t-}{}}\right.$$

Mean

$$mu = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^{(\ln(2))^{-1}} \frac{1}{x\,(e^{x^{-1}}-2)}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2 x-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}\,dx$$

Variance

$$sigma^2 = -1/8\,\frac{1}{\pi^{3/2}}\left(\left(\left(\int_0^{(\ln(2))^{-1}} \frac{1}{x\,(e^{x^{-1}}-2)}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2 x-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}\,dx\right)^2\sqrt{\pi}-2\,\sqrt{}\right.\right.$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}} 1/4\,\frac{x^r\sqrt{2}}{\sqrt{\pi}\,(e^{x^{-1}}-2)\,x^2}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2 x-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}\,dx$$

Moment Generating Function

$$1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^{(\ln(2))^{-1}}\frac{1}{\left(e^{x^{-1}}-2\right)x^2}e^{-1/8\,\frac{\left(\ln\left(e^{x^{-1}}-2\right)\right)^2x-8\,tx^2-2\,\ln\left(e^{x^{-1}}-2\right)x+x-8}{x}}\,dx$$

1

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

Probability Distribution Function

$$f(x)=-1/4\,\frac{\sqrt{2}e^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\sqrt{\pi}\operatorname{arctanh}(x)\,(x^2-1)}$$

Cumulative Distribution Function

$$F(x)=-1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^x\frac{e^{-1/8\,(\ln(\operatorname{arctanh}(t))-1)^2}}{\operatorname{arctanh}(t)\,(t^2-1)}\,dt$$

Inverse Cumulative Distribution Function
Survivor Function

$$S(x)=1/4\,\frac{1}{\sqrt{\pi}}\left(\sqrt{2}\int_0^x\frac{e^{-1/8\,(\ln(\operatorname{arctanh}(t))-1)^2}}{\operatorname{arctanh}(t)\,(t^2-1)}\,dt+4\,\sqrt{\pi}\right)$$

Hazard Function

$$h(x)=-\frac{\sqrt{2}e^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\operatorname{arctanh}(x)\,(x^2-1)}\left(\sqrt{2}\int_0^x\frac{e^{-1/8\,(\ln(\operatorname{arctanh}(t))-1)^2}}{\operatorname{arctanh}(t)\,(t^2-1)}\,dt+4\,\sqrt{\pi}\right)^{-1}$$

Mean

$$mu=-1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^1\frac{xe^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\operatorname{arctanh}(x)\,(x^2-1)}\,dx$$

Variance

$$sigma^2=-1/8\,\frac{1}{\pi^{3/2}}\left(\left(\int_0^1\frac{xe^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\operatorname{arctanh}(x)\,(x^2-1)}\,dx\right)^2\sqrt{\pi}+2\,\sqrt{2}\int_0^1\frac{x^2e^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\operatorname{arctanh}(x)\,(x^2-1)}\,d$$

Moment Function

$$m(x)=\int_0^1-1/4\,\frac{x^r\sqrt{2}e^{-1/8\,(\ln(\operatorname{arctanh}(x))-1)^2}}{\sqrt{\pi}\operatorname{arctanh}(x)\,(x^2-1)}\,dx$$

Moment Generating Function

$$-1/4\,{\frac {\sqrt {2}}{\sqrt {\pi }}\int _{0}^{1}\!{\frac {{{\rm e}^{-1/8-1/8\,\left(\ln \left({\rm arctanh} \left(x\right)\right)\right)^{2}+tx}}}{\left({\rm arctanh} \left(x\right)\right)^{3/4}\left({x}^{2}-1\right)}}\,{\rm d}x}_{1}$$

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

Probability Distribution Function

$$f(x)=1/4\,{\frac {\sqrt {2}{{\rm e}^{-1/8\,\left(\ln \left({\rm arcsinh} \left(x\right)\right)-1\right)^{2}}}}{\sqrt {\pi }{\rm arcsinh} \left(x\right)\sqrt {{x}^{2}+1}}}$$

Cumulative Distribution Function

$$F(x)=1/2+1/2\,{\rm erf} \left(1/4\,\sqrt {2}\left(\ln \left(-\ln \left(-x+\sqrt {{x}^{2}+1}\right)\right)-1\right)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1}=[s\mapsto 1/2\,{{\rm e}^{{{\rm e}^{1+2\,\sqrt {2}RootOf\left(-{\rm erf} \left(\_Z\right)-1+2\,s\right)}}}}-1/2\,{{\rm e}^{-{{\rm e}^{1+2\,\sqrt {2}RootOf\left(-{\rm erf} \left(\_Z\right)-1+2\,s\right)}}}}]$$

Survivor Function

$$S(x)=1/2-1/2\,{\rm erf} \left(1/4\,\sqrt {2}\left(\ln \left(-\ln \left(-x+\sqrt {{x}^{2}+1}\right)\right)-1\right)\right)$$

Hazard Function

$$h(x)=-1/2\,{\frac {\sqrt {2}{{\rm e}^{-1/8\,\left(\ln \left({\rm arcsinh} \left(x\right)\right)-1\right)^{2}}}}{\sqrt {\pi }{\rm arcsinh} \left(x\right)\sqrt {{x}^{2}+1}\left(-1+{\rm erf} \left(1/4\,\sqrt {2}\left(\ln \left(-\ln \left(-x+\sqrt {{x}^{2}+1}\right)\right)-1\right)\right)\right)}}$$

Mean

$$mu=\infty$$

Variance

$$sigma^2=undefined$$

Moment Function

$$m(x)=\infty$$

Moment Generating Function

$$\int _{0}^{\infty }\!1/4\,{\frac {{{\rm e}^{-1/8-1/8\,\left(\ln \left({\rm arcsinh} \left(x\right)\right)\right)^{2}+tx}}\sqrt {2}}{\left({\rm arcsinh} \left(x\right)\right)^{3/4}\sqrt {{x}^{2}+1}\sqrt {\pi }}}\,{\rm d}x_{1}$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

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

Survivor Function

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

Hazard Function

$$h(x) = 1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)\left(1+\mathrm{erf}\left(1/4\,\sqrt{2}\,(-\ln(\mathrm{e}^x-1) - \ln(\mathrm{e}^x+1) + \ln(2) + x + 1)\right)\right)}$$

Mean

$$mu = \int_0^\infty 1/4\,\frac{x\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 1/4\,\frac{x^2\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x - \left(\int_0^\infty 1/4\,\frac{x\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\right.$$

Moment Function

$$m(x) = \int_0^\infty 1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x$$

Moment Generating Function

$$"UnabletofindMGF"$$

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)-1\right)^2}}{\sqrt{\pi}\,\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)}$$

Cumulative Distribution Function

$$F(x) = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_1^x \frac{\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)\left(t^2-1\right)}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1/4\,\frac{1}{\sqrt{\pi}}\left(-\sqrt{2}\int_1^x \frac{\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)\left(t^2-1\right)}\,\mathrm{d}t+4\,\sqrt{\pi}\right)$$

Hazard Function

$$h(x) = \frac{\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)}\left(-\sqrt{2}\int_1^x \frac{\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(t^{-1}\right)\right)\left(t^2-1\right)}\,\mathrm{d}t+4\,\sqrt{\pi}\right)^{-1}$$

Mean

$$mu = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)}\,\mathrm{d}x$$

Variance

$$sigma^2 = -1/8\,\frac{1}{\pi^{3/2}}\left(\left(\left(\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)-1\right)^2}}{\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)}\,\mathrm{d}x\right)^2\sqrt{\pi}-2\,\sqrt{2}\int_1^{\frac{\mathrm{e}^2+1}{\mathrm{e}^2-1}} \frac{x^2\mathrm{e}^{-1/8\,\left(\ln\right.}}{\left(-1+\mathrm{arct}\right.}$$

Moment Function

$$m(x) = \int_1^{\frac{\mathrm{e}+\mathrm{e}^{-1}}{\mathrm{e}-\mathrm{e}^{-1}}} 1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,\left(\ln\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)-1\right)^2}}{\sqrt{\pi}\,\left(-1+\mathrm{arctanh}\left(x^{-1}\right)\right)\left(x^2-1\right)}\,\mathrm{d}x$$

Moment Generating Function

$$1/4\,{\frac {\sqrt {2}}{\sqrt {\pi }}\int _{1}^{{\frac {{{\rm e}^{2}}+1}{{{\rm e}^{2}}-1}}}\!{\frac {{{\rm e}^{-1/8-1/8\, \left(\ln \left(-1+{\rm arctanh} \left({x}^{-1} \right) \right) \right) ^{2}+tx}}}{ \left(-1+{\rm arctanh} \left({x}^{-1} \right) \right) ^{3/4} \left({x}^{2}-1 \right) }}\,{\rm d}x}_{1}$$

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

Probability Distribution Function

$$f(x) = 1/4\,{\frac {\sqrt {2}{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {\pi }\sqrt {{x}^{2}+1} \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) \left| x \right| }}$$

Cumulative Distribution Function

$$F(x) = 1/4\,{\frac {\sqrt {2}}{\sqrt {\pi }}\int _{0}^{x}\!{\frac {{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{t}^{2}+1} \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) \left| t \right| }}\,{\rm d}t}$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1/4\,{\frac {1}{\sqrt {\pi }} \left(-\sqrt {2}\int _{0}^{x}\!{\frac {{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{t}^{2}+1} \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) \left| t \right| }}\,{\rm d}t+4\,\sqrt {\pi } \right) }$$

Hazard Function

$$h(x) = {\frac {\sqrt {2}{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{x}^{2}+1} \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) \left| x \right| } \left(-\sqrt {2}\int _{0}^{x}\!{\frac {{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{t}^{2}+1} \left(-1+{\rm arcsinh} \left({t}^{-1} \right) \right) \left| t \right| }}\,{\rm d}t+4\,\sqrt {\pi } \right) ^{-}}$$

Mean

$$mu = 1/4\,{\frac {\sqrt {2}}{\sqrt {\pi }}\int _{0}^{2\,{\frac {{\rm e}}{{{\rm e}^{2}}-1}}}\!{\frac {{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{x}^{2}+1} \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) }}\,{\rm d}x}$$

Variance

$$sigma^2 = -1/8\,{\frac {1}{{\pi }^{3/2}} \left(\left(\left(\int _{0}^{2\,{\frac {{\rm e}}{{{\rm e}^{2}}-1}}}\!{\frac {{{\rm e}^{-1/8\, \left(\ln \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) -1 \right) ^{2}}}}{\sqrt {{x}^{2}+1} \left(-1+{\rm arcsinh} \left({x}^{-1} \right) \right) }}\,{\rm d}x \right) ^{2}\sqrt {\pi }-2\,\sqrt {2}\int _{0}^{2\,{\frac {{\rm e}}{{{\rm e}^{2}}-1}}}\!{\frac {x{{\rm e}^{-1/8\, (\ln}}}{\sqrt {{x}^{2}+1}}}\right.\right.}$$

Moment Function

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

Moment Generating Function

$$1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^{2\,\frac{\mathrm{e}}{\mathrm{e}^2-1}} \frac{\mathrm{e}^{-1/8-1/8\left(\ln\left(-1+\mathrm{arcsinh}\left(x^{-1}\right)\right)\right)^2+tx}}{\left(-1+\mathrm{arcsinh}\left(x^{-1}\right)\right)^{3/4}x\sqrt{x^2+1}}\,\mathrm{d}x$$ [1]

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\left(\ln\left(-1+\sinh\left(x^{-1}\right)\right)-1\right)^2}\cosh\left(x^{-1}\right)}{\sqrt{\pi}\left(-1+\sinh\left(x^{-1}\right)\right)x^2}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

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

Hazard Function

$$h(x) = -1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\left(\ln\left(-1+\sinh\left(x^{-1}\right)\right)-1\right)^2}\cosh\left(x^{-1}\right)}{\sqrt{\pi}\left(-1+\sinh\left(x^{-1}\right)\right)x^2}\left(-1+\mathrm{erf}\left(1/4\,\frac{\sqrt{2}}{x}\left(\ln\left(2\right)x-\ln\left(\mathrm{e}^{2\,x^{-1}}-\right.\right.\right.\right.$$

Mean

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

Variance

$$sigma^2 = -1/8\,\frac{1}{\pi^{3/2}}\left(\left(\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{e^{-1/8\left(\ln\left(-1+\sinh\left(x^{-1}\right)\right)-1\right)^2}\cosh\left(x^{-1}\right)}{x\left(-1+\sinh\left(x^{-1}\right)\right)}\,dx\right)^2\sqrt{\pi}-2\sqrt{2}\int_0^{(\ln$$

Moment Function

$$m(x) = \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} 1/4\,\frac{x^r\sqrt{2}e^{-1/8\left(\ln\left(-1+\sinh\left(x^{-1}\right)\right)-1\right)^2}\cosh\left(x^{-1}\right)}{\sqrt{\pi}\left(-1+\sinh\left(x^{-1}\right)\right)x^2}\,dx$$

Moment Generating Function

$$1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}}\frac{e^{-1/8+tx-1/8\left(\ln\left(-1+\sinh\left(x^{-1}\right)\right)\right)^2}\cosh\left(x^{-1}\right)}{\left(-1+\sinh\left(x^{-1}\right)\right)^{3/4}x^2}\,dx$$

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[1]

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}e^{-1/8\left(\ln\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)-1\right)^2}}{\sqrt{\pi}\sqrt{x^2-2\,x+2}\operatorname{arccsch}\left((x-1)^{-1}\right)}$$

Cumulative Distribution Function

$$F(x) = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_1^x\frac{e^{-1/8\left(\ln\left(\operatorname{arccsch}\left((t-1)^{-1}\right)\right)-1\right)^2}}{\sqrt{t^2-2\,t+2}\operatorname{arccsch}\left((t-1)^{-1}\right)}\,dt$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1/4\,\frac{1}{\sqrt{\pi}}\left(-\sqrt{2}\int_1^x\frac{e^{-1/8\left(\ln\left(\operatorname{arccsch}\left((t-1)^{-1}\right)\right)-1\right)^2}}{\sqrt{t^2-2\,t+2}\operatorname{arccsch}\left((t-1)^{-1}\right)}\,dt+4\sqrt{\pi}\right)$$

Hazard Function

$$h(x) = \frac{\sqrt{2}e^{-1/8\left(\ln\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)-1\right)^2}}{\sqrt{x^2-2\,x+2}\operatorname{arccsch}\left((x-1)^{-1}\right)}\left(-\sqrt{2}\int_1^x\frac{e^{-1/8\left(\ln\left(\operatorname{arccsch}\left((t-1)^{-1}\right)\right)-1\right)^2}}{\sqrt{t^2-2\,t+2}\operatorname{arccsch}\left((t-1)^{-1}\right)}\,dt+4\sqrt{\pi}\right)$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_1^\infty 1/4\,\frac{e^{-1/8-1/8\left(\ln\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)\right)^2+tx}\sqrt{2}}{\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^{3/4}\sqrt{x^2-2\,x+2}\sqrt{\pi}}\,dx_1$$

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

Probability Distribution Function

$$f(x) = -1/4\,\frac{\sqrt{2}e^{-1/8\left(\ln\left((\operatorname{arctanh}(x))^{-1}\right)-1\right)^2}}{\sqrt{\pi}\operatorname{arctanh}(x)\left(x^2-1\right)}$$

Cumulative Distribution Function

$$F(x) = -1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^x \frac{e^{-1/8\left(\ln\left((\operatorname{arctanh}(t))^{-1}\right)-1\right)^2}}{\operatorname{arctanh}(t)\left(t^2-1\right)}\,dt$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1/4\,\frac{1}{\sqrt{\pi}}\left(\sqrt{2}\int_0^x \frac{e^{-1/8\left(\ln\left((\operatorname{arctanh}(t))^{-1}\right)-1\right)^2}}{\operatorname{arctanh}(t)\left(t^2-1\right)}\,dt + 4\sqrt{\pi}\right)$$

Hazard Function

$$h(x) = -\frac{\sqrt{2}e^{-1/8\left(\ln\left((\operatorname{arctanh}(x))^{-1}\right)-1\right)^2}}{\operatorname{arctanh}(x)\left(x^2-1\right)}\left(\sqrt{2}\int_0^x \frac{e^{-1/8\left(\ln\left((\operatorname{arctanh}(t))^{-1}\right)-1\right)^2}}{\operatorname{arctanh}(t)\left(t^2-1\right)}\,dt + 4\sqrt{\pi}\right)^{-1}$$

Mean

$$mu = -1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^1 \frac{x\mathrm{e}^{-1/8\,(\ln(\mathrm{arctanh}(x))+1)^2}}{\mathrm{arctanh}\,(x)\,(x^2-1)}\,\mathrm{d}x$$

Variance

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

Moment Function

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

Moment Generating Function

$$-1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^1 \frac{\mathrm{e}^{-1/8-1/8\,(\ln(\mathrm{arctanh}(x)))^2+tx}}{(\mathrm{arctanh}\,(x))^{5/4}\,(x^2-1)}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{\pi}\sqrt{x^2+1}\mathrm{arccsch}\,(x)\,|x|}$$

Cumulative Distribution Function

$$F(x) = 1/4\,\frac{\sqrt{2}}{\sqrt{\pi}}\int_0^x \frac{\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(t))+1)^2}}{\sqrt{t^2+1}\mathrm{arccsch}\,(t)\,|t|}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = 1/4\,\frac{1}{\sqrt{\pi}}\left(-\sqrt{2}\int_0^x \frac{\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(t))+1)^2}}{\sqrt{t^2+1}\mathrm{arccsch}\,(t)\,|t|}\,\mathrm{d}t + 4\sqrt{\pi}\right)$$

Hazard Function

$$h(x) = \frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{x^2+1}\mathrm{arccsch}\,(x)\,|x|}\left(-\sqrt{2}\int_0^x \frac{\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(t))+1)^2}}{\sqrt{t^2+1}\mathrm{arccsch}\,(t)\,|t|}\,\mathrm{d}t + 4\sqrt{\pi}\right)^{-1}$$

Mean

$$mu = \int_0^\infty 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{\pi}\sqrt{x^2+1}\mathrm{arccsch}\,(x)}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 1/4\,\frac{x\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{\pi}\sqrt{x^2+1}\mathrm{arccsch}\,(x)}\,\mathrm{d}x - \left(\int_0^\infty 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{\pi}\sqrt{x^2+1}\mathrm{arccsch}\,(x)}\,\mathrm{d}x\right)^2$$

Moment Function

$$m(x) = \int_0^\infty 1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\mathrm{arccsch}(x))+1)^2}}{\sqrt{\pi}\sqrt{x^2+1}\mathrm{arccsch}\,(x)\,|x|}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 1/4\,\frac{\mathrm{e}^{-1/8-1/8\,(\ln(\mathrm{arccsch}(x)))^2+tx}\sqrt{2}}{(\mathrm{arccsch}\,(x))^{5/4}\,x\sqrt{x^2+1}\sqrt{\pi}}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 1/4\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh\,(x)}{\sqrt{\pi}\sinh\,(x)}$$

Cumulative Distribution Function

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

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

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

Hazard Function

$$h(x) = 1/2\,\frac{\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)\left(1+\mathrm{erf}\left(1/4\,\sqrt{2}\,(-\ln(\mathrm{e}^{x}-1) - \ln(\mathrm{e}^{x}+1) + \ln(2) + x + 1)\right)\right)}$$

Mean

$$mu = \int_0^\infty 1/4\,\frac{x\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x$$

Variance

$$sigma^2 = \int_0^\infty 1/4\,\frac{x^2\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x - \left(\int_0^\infty 1/4\,\frac{x\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\right.$$

Moment Function

$$m(x) = \int_0^\infty 1/4\,\frac{x^r\sqrt{2}\mathrm{e}^{-1/8\,(\ln(\sinh(x))-1)^2}\cosh(x)}{\sqrt{\pi}\sinh(x)}\,\mathrm{d}x$$

Moment Generating Function

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