"ArcTanRV(2,3)"

$$[x \mapsto 2\,\frac{1}{(\arctan(6)+\pi/2)\left(1+4\,(x-3)^2\right)}]$$

---

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = -2\,\frac{1}{(2\,\arctan(6)+\pi)\,(-4\,x+24\,\sqrt{x}-37)\,\sqrt{x}}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{\arctan(6)+\arctan(-6+2\,\sqrt{x})}{2\,\arctan(6)+\pi}$$

Inverse Cumulative Distribution Function

$F^{-1} = [s \mapsto 9{+}3\,\tan(s\arctan(6)+1/2\,s\pi-\arctan(6)){+}1/4\,(\tan(s\arctan(6)+1/2\,s\pi-\arcta$

Survivor Function

$$S(x) = \frac{\pi-2\,\arctan(-6+2\,\sqrt{x})}{2\,\arctan(6)+\pi}$$

Hazard Function

$$h(x) = 2\,\frac{1}{(-4\,x+24\,\sqrt{x}-37)\,\sqrt{x}\,(-\pi+2\,\arctan(-6+2\,\sqrt{x}))}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \int_0^{\infty} -2\,\frac{x^r}{(2\,\arctan(6)+\pi)\,(-4\,x+24\,\sqrt{x}-37)\,\sqrt{x}}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty -2\,\frac{\mathrm{e}^{tx}}{(2\,\arctan(6)+\pi)\,(-4\,x+24\,\sqrt{x}-37)\,\sqrt{x}}\,\mathrm{d}x_1$$

---

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

Probability Distribution Function

$$f(x) = 8\,\frac{x}{(2\,\arctan(6)+\pi)\,(4\,x^4-24\,x^2+37)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{\arctan(6)+\arctan(2\,x^2-6)}{2\,\arctan(6)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto 1/2\,\sqrt{12+2\,\tan(s\arctan(6)+1/2\,s\pi-\arctan(6))}]$$

Survivor Function

$$S(x) = \frac{\pi-2\,\arctan(2\,x^2-6)}{2\,\arctan(6)+\pi}$$

Hazard Function

$$h(x) = 8\,\frac{x}{(4\,x^4-24\,x^2+37)\,(\pi-2\,\arctan(2\,x^2-6))}$$

Mean

$$mu = \frac{\pi}{(2\,\arctan(6)+\pi)\,\sqrt{-6+\sqrt{37}}}$$

Variance

$$sigma^2 = \infty$$

Moment Function

$$m(x) = \int_0^\infty 8\,\frac{x^r x}{(2\,\arctan(6)+\pi)\,(4\,x^4-24\,x^2+37)}\,\mathrm{d}x$$

Moment Generating Function

$$\lim_{x\to\infty} \frac{-i\left(\mathrm{e}^{-1/2\,\sqrt{12+2\,it}}Ei\left(1,-1/2\,\sqrt{12+2\,it}\right)-\mathrm{e}^{-1/2\,\sqrt{12+2\,it}}Ei\left(1,-tx-1/2\,\sqrt{12+2\,it}\right)-\mathrm{e}^{1/2\,\sqrt{}}\right.}{}$$

---

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{(2\,\arctan(6)+\pi)\,(37\,x^2-24\,x+4)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{1}{2\,\arctan(6)+\pi}\left(\arctan(6)+\arctan\left(\frac{37\,x}{2}-6\right)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \frac{12}{37} + \frac{2\,\tan(s\arctan(6)+1/2\,s\pi-\arctan(6))}{37}]$$

Survivor Function

$$S(x) = -\frac{1}{2\,\arctan(6)+\pi}\left(-\pi+2\,\arctan\left(\frac{37\,x}{2}-6\right)\right)$$

Hazard Function

$$h(x) = 4\,\frac{1}{37\,x^2-24\,x+4}\left(\pi-2\,\arctan\left(\frac{37\,x}{2}-6\right)\right)^{-1}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \int_0^{\infty} 4\,\frac{x^r}{(2\,\arctan(6)+\pi)\,(37\,x^2-24\,x+4)}\,\mathrm{d}x$$

Moment Generating Function

$$\lim_{x\to\infty}\frac{i}{2\,\arctan(6)+\pi}\left(\mathrm{e}^{\left(\frac{12}{37}+\frac{2\,i}{37}\right)t}Ei\left(1,-tx+\frac{12\,t}{37}+\frac{2\,i}{37}t\right)-\mathrm{e}^{\left(\frac{12}{37}-\frac{2\,i}{37}\right)t}Ei\left(1,-tx+\frac{12\,t}{37}-\frac{2\,i}{37}t\right)\right.$$

---

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

Probability Distribution Function

$$f(x) = -4\,\frac{1}{(2\,\arctan(6)+\pi)\left(24\,\sin(x)\cos(x) - 33\,(\cos(x))^2 - 4\right)}$$

Cumulative Distribution Function

$$F(x) = \begin{cases} \frac{2\,\arctan(6)+2\,\arctan(-6+2\,\tan(x))}{2\,\arctan(6)+\pi} & x \le \pi/2 \\ 2\,\frac{1}{2\,\arctan(6)+\pi}\left(\pi\,\left\lfloor -1/2\,\frac{-2\,x+\pi}{\pi}\right\rfloor + \arctan(6) + \pi + \arctan(-6+2\,\tan(x))\right) & \pi/2 < x \end{cases}$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = \begin{cases} \frac{\pi-2\,\arctan(-6+2\,\tan(x))}{2\,\arctan(6)+\pi} & x \le \pi/2 \\ -\frac{1}{2\,\arctan(6)+\pi}\left(2\,\pi\,\left\lfloor -1/2\,\frac{-2\,x+\pi}{\pi}\right\rfloor + \pi + 2\,\arctan(-6+2\,\tan(x))\right) & \pi/2 < x \end{cases}$$

Hazard Function

$$h(x) = \begin{cases} -4\,\frac{1}{24\,\sin(x)\cos(x)-33\,(\cos(x))^2-4}\left(\pi - 2\,\arctan\left(2\,\frac{-3\,\cos(x)+\sin(x)}{\cos(x)}\right)\right)^{-1} & x \\ 4\,\frac{1}{24\,\sin(x)\cos(x)-33\,(\cos(x))^2-4}\left(2\,\pi\,\left\lfloor -1/2\,\frac{-2\,x+\pi}{\pi}\right\rfloor + \pi + 2\,\arctan\left(2\,\frac{-3\,\cos(x)+\sin(x)}{\cos(x)}\right)\right)^{-1} & \pi \end{cases}$$

Mean

$$mu = -1/4\,\frac{2\,i\pi\,\ln(1-6\,i) - 2\,i\pi\,\ln(3) - i\pi\,\ln(5) - 4\,\arctan(6)\,\pi - 6\,\pi\,\arctan(2) - 2\,dilog\left(\frac{4}{1}\right.}{2\,\arctan(6)+\pi}$$

Variance

$$sigma^2 = -1/16\,\frac{16\,\left(\ln\left(\left(-\frac{33}{37} - \frac{24\,i}{37}\right)\mathrm{e}^{i(\arctan(6)+\arctan(2))}\right)\right)^2\pi\,\arctan(6) - 4\,\ln(3)\ln(5)\,\pi^2 + 8\,\ln$$

Moment Function

$$m(x) = \int_0^{\pi/2} -4\,\frac{x^r}{(2\,\arctan(6)+\pi)\left(24\,\sin(x)\cos(x) - 33\,(\cos(x))^2 - 4\right)}\,\mathrm{d}x$$

Moment Generating Function

$$-8\,\frac{1}{2\,\arctan\left(6\right)+\pi}\int_{0}^{\pi/2}\frac{\mathrm{e}^{tx}}{24\,\sin\left(2\,x\right)-33\,\cos\left(2\,x\right)-41}\,\mathrm{d}x\,{}_{1}$$

---

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

Probability Distribution Function

$$f(x)=4\,\frac{1}{\left(2\,\arctan\left(6\right)+\pi\right)\left(4\,\left(\ln\left(x\right)\right)^{2}-24\,\ln\left(x\right)+37\right)x}$$

Cumulative Distribution Function

$$F(x)=2\,\frac{\arctan\left(6\right)+\arctan\left(-6+2\,\ln\left(x\right)\right)}{2\,\arctan\left(6\right)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1}=\left[s\mapsto \mathrm{e}^{1/2\,\tan(1/2\,s\pi+s\,\arctan(6)-\arctan(6))+3}\right]$$

Survivor Function

$$S(x)=\frac{\pi-2\,\arctan\left(-6+2\,\ln\left(x\right)\right)}{2\,\arctan\left(6\right)+\pi}$$

Hazard Function

$$h(x)=4\,\frac{1}{\left(4\,\left(\ln\left(x\right)\right)^{2}-24\,\ln\left(x\right)+37\right)x\left(\pi-2\,\arctan\left(-6+2\,\ln\left(x\right)\right)\right)}$$

Mean

$$mu=\infty$$

Variance

$$sigma^{2}=undefined$$

Moment Function

$$m(x)=\infty$$

Moment Generating Function

$$\int_{1}^{\infty}4\,\frac{\mathrm{e}^{tx}}{\left(2\,\arctan\left(6\right)+\pi\right)\left(4\,\left(\ln\left(x\right)\right)^{2}-24\,\ln\left(x\right)+37\right)x}\,\mathrm{d}x_{1}$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(4\,\mathrm{e}^{2\,x}-24\,\mathrm{e}^{x}+37)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{\arctan(6)+\arctan(-6+2\,\mathrm{e}^{x})}{2\,\arctan(6)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto -\ln(2)+\ln(\tan(1/2\,s\pi+s\arctan(6)-\arctan(6))+6)]$$

Survivor Function

$$S(x) = \frac{\pi-2\,\arctan(-6+2\,\mathrm{e}^{x})}{2\,\arctan(6)+\pi}$$

Hazard Function

$$h(x) = -4\,\frac{\mathrm{e}^{x}}{(-4\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-37)\,(\pi-2\,\arctan(-6+2\,\mathrm{e}^{x}))}$$

Mean

$$mu = 1/2\,\ln(37)-\ln(2)$$

Variance

$$sigma^2 = \int_{-\infty}^{\infty} -4\,\frac{x^2\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(-4\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-37)}\,\mathrm{d}x - 1/4\,(\ln(37))^2+\ln(2)\ln(37)-(\ln($$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 4\,\frac{x^{r}\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(4\,\mathrm{e}^{2\,x}-24\,\mathrm{e}^{x}+37)}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} -4\,\frac{\mathrm{e}^{x(t+1)}}{(2\,\arctan(6)+\pi)\,(-4\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-37)}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{(2\,\arctan(6)+\pi)\left(4\,(\ln(x))^2+24\,\ln(x)+37\right)x}$$

Cumulative Distribution Function

$$F(x) = \frac{\pi + 2\,\arctan(6+2\,\ln(x))}{2\,\arctan(6)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \mathrm{e}^{-1/2\,\frac{6\,\tan(1/2\,s(2\,\arctan(6)+\pi))+1}{\tan(1/2\,s(2\,\arctan(6)+\pi))}}]$$

Survivor Function

$$S(x) = 1 + \frac{-\pi - 2\,\arctan(6+2\,\ln(x))}{2\,\arctan(6)+\pi}$$

Hazard Function

$$h(x) = 2\,\frac{1}{\left(4\,(\ln(x))^2+24\,\ln(x)+37\right)x\,(\arctan(6)-\arctan(6+2\,\ln(x)))}$$

Mean

$$mu = \frac{i\mathrm{e}^{-3-i/2}\,(\mathrm{e}^{i}Ei\,(1,-3+i/2) - Ei\,(1,-3-i/2))}{2\,\arctan(6)+\pi}$$

Variance

$$sigma^2 = \frac{\mathrm{e}^{-6}\left(2\,i\mathrm{e}^{i}Ei\,(1,-6+i)\arctan(6) - 2\,i\mathrm{e}^{-i}Ei\,(1,-6-i)\arctan(6) + i\mathrm{e}^{i}Ei\,(1,-6+i)\,\pi\right.}{}$$

Moment Function

$$m(x) = \frac{i\left(\mathrm{e}^{i/2r}Ei\,(1,-3\,r+i/2r) - \mathrm{e}^{-i/2r}Ei\,(1,-3\,r-i/2r)\right)\mathrm{e}^{-3\,r}}{2\,\arctan(6)+\pi}$$

Moment Generating Function

$$4\,\frac{1}{2\,\arctan(6)+\pi}\int_0^1 \frac{\mathrm{e}^{tx}}{\left(4\,(\ln(x))^2+24\,\ln(x)+37\right)x}\,\mathrm{d}x$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(37\,\mathrm{e}^{2\,x}-24\,\mathrm{e}^{x}+4)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{1}{2\,\arctan(6)+\pi}\left(\arctan(6)+\arctan\left(\frac{37\,\mathrm{e}^{x}}{2}-6\right)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \ln\left(\frac{2}{37}\right)+\ln(\tan(1/2\,s\pi+s\arctan(6)-\arctan(6))+6)]$$

Survivor Function

$$S(x) = -\frac{1}{2\,\arctan(6)+\pi}\left(-\pi+2\,\arctan\left(\frac{37\,\mathrm{e}^{x}}{2}-6\right)\right)$$

Hazard Function

$$h(x) = -4\,\frac{\mathrm{e}^{x}}{-37\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-4}\left(\pi-2\,\arctan\left(\frac{37\,\mathrm{e}^{x}}{2}-6\right)\right)^{-1}$$

Mean

$$mu = -1/2\,\ln(37)+\ln(2)$$

Variance

$$sigma^{2} = \int_{-\infty}^{\infty} -4\,\frac{x^{2}\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(-37\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-4)}\,\mathrm{d}x - 1/4\,(\ln(37))^{2}+\ln(2)\ln(37)-(\ln($$

Moment Function

$$m(x) = \int_{-\infty}^{\infty} 4\,\frac{x^{r}\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(37\,\mathrm{e}^{2\,x}-24\,\mathrm{e}^{x}+4)}\,\mathrm{d}x$$

Moment Generating Function

$$\int_{-\infty}^{\infty} -4\,\frac{\mathrm{e}^{x(t+1)}}{(2\,\arctan(6)+\pi)\,(-37\,\mathrm{e}^{2\,x}+24\,\mathrm{e}^{x}-4)}\,\mathrm{d}x_{1}$$

---

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

Probability Distribution Function

$$f(x) = 4\,\frac{\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(4\,\mathrm{e}^{2\,x}-32\,\mathrm{e}^{x}+65)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{\arctan(6)+\arctan(-8+2\,\mathrm{e}^{x})}{2\,\arctan(6)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto -\ln(2)+\ln(\tan(1/2\,s\pi+s\arctan(6)-\arctan(6))+8)]$$

Survivor Function

$$S(x) = -\frac{-\pi+2\,\arctan(-8+2\,\mathrm{e}^{x})}{2\,\arctan(6)+\pi}$$

Hazard Function

$$h(x) = -4\,\frac{\mathrm{e}^{x}}{(-4\,\mathrm{e}^{2\,x}+32\,\mathrm{e}^{x}-65)\,(\pi-2\,\arctan(-8+2\,\mathrm{e}^{x}))}$$

Mean

$$mu = \frac{idilog\left(\frac{49}{65}+\frac{2\,i}{65}\right)-idilog\left(\frac{49}{65}-\frac{2\,i}{65}\right)+\ln(5)\,\pi+\ln(13)\,\pi-2\,\pi\,\ln(2)-\ln(5)\arctan(1/8)-}{2\,\arctan(6)+\pi}$$

Variance

$$sigma^2 = -\frac{1}{(2\,\arctan(6)+\pi)^2}\left(2\,\pi^2\ln(5)\ln(13)-4\,\pi^2\ln(5)\ln(2)-4\,\pi^2\ln(13)\ln(2)-2\,\pi\,(\mathrm{l}\right.$$

Moment Function

$$m(x) = \int_0^{\infty} 4\,\frac{x^{r}\mathrm{e}^{x}}{(2\,\arctan(6)+\pi)\,(4\,\mathrm{e}^{2\,x}-32\,\mathrm{e}^{x}+65)}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^{\infty} -4 \frac{\mathrm{e}^{x(t+1)}}{(2 \arctan(6) + \pi)(-4 \mathrm{e}^{2x} + 32 \mathrm{e}^{x} - 65)} \mathrm{d}x_1$$

---

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

Probability Distribution Function

$$f(x) = 4 \frac{\mathrm{e}^{x^{-1}}}{(2 \arctan(6) + \pi) x^2} \left(4 \mathrm{e}^{2x^{-1}} - 40 \mathrm{e}^{x^{-1}} + 101\right)^{-1}$$

Cumulative Distribution Function

$$F(x) = \frac{\pi - 2 \arctan\left(-10 + 2 \mathrm{e}^{x^{-1}}\right)}{2 \arctan(6) + \pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto (-\ln(2) + \ln(\cot(1/2\, s\, (2 \arctan(6) + \pi)) + 10))^{-1}]$$

Survivor Function

$$S(x) = 2 \frac{\arctan(6) + \arctan\left(-10 + 2 \mathrm{e}^{x^{-1}}\right)}{2 \arctan(6) + \pi}$$

Hazard Function

$$h(x) = 2 \frac{\mathrm{e}^{x^{-1}}}{x^2 (\arctan(6) + \arctan(-10 + 2 \mathrm{e}^{x^{-1}}))} \left(4 \mathrm{e}^{2x^{-1}} - 40 \mathrm{e}^{x^{-1}} + 101\right)^{-1}$$

Mean

$$mu = -4 \frac{1}{2 \arctan(6) + \pi} \int_0^{(\ln(2))^{-1}} \frac{\mathrm{e}^{x^{-1}}}{x} \left(-4 \mathrm{e}^{2x^{-1}} + 40 \mathrm{e}^{x^{-1}} - 101\right)^{-1} \mathrm{d}x$$

Variance

$$sigma^2 = -4 \frac{1}{(2 \arctan(6) + \pi)^2} \left(2 \int_0^{(\ln(2))^{-1}} \mathrm{e}^{x^{-1}} \left(-4 \mathrm{e}^{2x^{-1}} + 40 \mathrm{e}^{x^{-1}} - 101\right)^{-1} \mathrm{d}x \arctan(6) +$$

Moment Function

$$m(x) = \int_0^{(\ln(2))^{-1}} 4 \frac{x^r \mathrm{e}^{x^{-1}}}{(2 \arctan(6) + \pi) x^2} \left(4 \mathrm{e}^{2x^{-1}} - 40 \mathrm{e}^{x^{-1}} + 101\right)^{-1} \mathrm{d}x$$

Moment Generating Function

$$-4 \frac{1}{2 \arctan(6) + \pi} \int_0^{(\ln(2))^{-1}} \frac{1}{x^2} \mathrm{e}^{\frac{tx^2+1}{x}} \left(-4 \mathrm{e}^{2x^{-1}} + 40 \mathrm{e}^{x^{-1}} - 101\right)^{-1} \mathrm{d}x$$

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

Probability Distribution Function

$$f(x) = -4 \frac{1}{(2 \arctan(6) + \pi) \left(4 (\operatorname{arctanh}(x))^2 - 24 \operatorname{arctanh}(x) + 37\right) (x^2 - 1)}$$

Cumulative Distribution Function

$$F(x) = 2 \frac{\arctan(6) + \arctan(-6 + 2 \operatorname{arctanh}(x))}{2 \arctan(6) + \pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \tanh(3 + 1/2 \tan(s \arctan(6) + 1/2 s\pi - \arctan(6)))]$$

Survivor Function

$$S(x) = \frac{\pi - 2 \arctan(-6 + 2 \operatorname{arctanh}(x))}{2 \arctan(6) + \pi}$$

Hazard Function

$$h(x) = 4 \frac{1}{\left(4 (\operatorname{arctanh}(x))^2 - 24 \operatorname{arctanh}(x) + 37\right) (x^2 - 1) (-\pi + 2 \arctan(-6 + 2 \operatorname{arctanh}(x)))}$$

Mean

$$mu = -4 \frac{1}{2 \arctan(6) + \pi} \int_0^1 \frac{x}{\left(4 (\operatorname{arctanh}(x))^2 - 24 \operatorname{arctanh}(x) + 37\right) (x^2 - 1)} \mathrm{d}x$$

Variance

$$sigma^2 = -4\,\frac{1}{\left(2\,\arctan\left(6\right)+\pi\right)^2}\left(2\int_0^1 \frac{x^2}{\left(4\,\left(\operatorname{arctanh}\left(x\right)\right)^2-24\operatorname{arctanh}\left(x\right)+37\right)\left(x^2-1\right)}\,\mathrm{d}x\,\mathrm{arc}\right.$$

Moment Function

$$m(x) = \int_0^1 -4\,\frac{x^r}{\left(2\,\arctan\left(6\right)+\pi\right)\left(4\,\left(\operatorname{arctanh}\left(x\right)\right)^2-24\operatorname{arctanh}\left(x\right)+37\right)\left(x^2-1\right)}\,\mathrm{d}x$$

Moment Generating Function

$$-4\,\frac{1}{2\,\arctan\left(6\right)+\pi}\int_0^1 \frac{\mathrm{e}^{tx}}{\left(4\,\left(\operatorname{arctanh}\left(x\right)\right)^2-24\operatorname{arctanh}\left(x\right)+37\right)\left(x^2-1\right)}\,\mathrm{d}x$$

$_1$

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{\left(2\,\arctan\left(6\right)+\pi\right)\left(4\,\left(\operatorname{arcsinh}\left(x\right)\right)^2-24\operatorname{arcsinh}\left(x\right)+37\right)\sqrt{x^2+1}}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{\arctan\left(6\right)-\arctan\left(6+2\,\ln\left(-x+\sqrt{x^2+1}\right)\right)}{2\,\arctan\left(6\right)+\pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = \left[s \mapsto -1/2\,\left(\mathrm{e}^{-\tan(1/2\,s\pi+s\arctan(6)-\arctan(6))-6}-1\right)\mathrm{e}^{1/2\,\tan(1/2\,s\pi+s\arctan(6)-\arctan(6))+3}\right]$$

Survivor Function

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

Hazard Function

$$h(x) = 4\,\frac{1}{\left(4\,\left(\operatorname{arcsinh}\left(x\right)\right)^2-24\operatorname{arcsinh}\left(x\right)+37\right)\sqrt{x^2+1}\left(\pi+2\,\arctan\left(6+2\,\ln\left(-x+\sqrt{x^2+1}\right)\right)\right.}$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_0^{\infty} 4 \frac{\mathrm{e}^{tx}}{(2 \arctan(6) + \pi) \left(4 (\operatorname{arcsinh}(x))^2 - 24 \operatorname{arcsinh}(x) + 37\right) \sqrt{x^2 + 1}} \mathrm{d}x_1$$

---

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

Probability Distribution Function

$$f(x) = -4 \frac{\cosh(x)}{(2 \arctan(6) + \pi) \left(-4 (\cosh(x))^2 + 24 \sinh(x) - 33\right)}$$

Cumulative Distribution Function

$$F(x) = \frac{1}{2 \arctan(6) + \pi} \left( i \ln \left( \frac{(6+i) \left(i\mathrm{e}^x + \mathrm{e}^{2x} - 6\,\mathrm{e}^x - 1\right)}{\sqrt{\mathrm{e}^{4x} - 12\,\mathrm{e}^{3x} + 35\,\mathrm{e}^{2x} + 12\,\mathrm{e}^x + 1}} \right) - i \ln \left( \frac{(-6+i) \left(i\mathrm{e}^x - \mathrm{e}^{2}\right.\right.\right.$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = -\frac{1}{2 \arctan(6) + \pi} \left( i \ln \left( \frac{(6+i) \left(i\mathrm{e}^x + \mathrm{e}^{2x} - 6\,\mathrm{e}^x - 1\right)}{\sqrt{\mathrm{e}^{4x} - 12\,\mathrm{e}^{3x} + 35\,\mathrm{e}^{2x} + 12\,\mathrm{e}^x + 1}} \right) - i \ln \left( \frac{(-6+i) \left(i\mathrm{e}^x - \right.\right.\right.$$

Hazard Function

$$h(x) = -4 \frac{\cosh(x)}{4 (\cosh(x))^2 - 24 \sinh(x) + 33} \left( i \ln \left( \frac{(6+i) \left(i\mathrm{e}^x + \mathrm{e}^{2x} - 6\,\mathrm{e}^x - 1\right)}{\sqrt{\mathrm{e}^{4x} - 12\,\mathrm{e}^{3x} + 35\,\mathrm{e}^{2x} + 12\,\mathrm{e}^x + 1}} \right) - i \ln \left( \right.\right.\right.$$

Moment Function

$$m(x) = \int_0^{\infty} -4 \frac{x^r \cosh(x)}{(2 \arctan(6) + \pi) \left(-4 (\cosh(x))^2 + 24 \sinh(x) - 33\right)} \mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 4 \frac{\mathrm{e}^{tx} \cosh\left(x\right)}{\left(2 \arctan\left(6\right) + \pi\right) \left(4 \left(\cosh\left(x\right)\right)^2 - 24 \sinh\left(x\right) + 33\right)} \mathrm{d}x_1$$

---

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

Probability Distribution Function

$$f(x) = 4 \frac{1}{\sqrt{x^2 + 1} \left(2 \arctan\left(6\right) + \pi\right) \left(4 \left(\operatorname{arccsch}\left(x\right)\right)^2 - 32 \operatorname{arccsch}\left(x\right) + 65\right) |x|}$$

---

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

Probability Distribution Function

$$f(x) = 4 \frac{1}{\left(2 \arctan\left(6\right) + \pi\right) \left(4 \left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2 - 32 \operatorname{arctanh}\left(x^{-1}\right) + 65\right) \left(x^2 - 1\right)}$$

Cumulative Distribution Function

$$F(x) = \frac{\pi - 2 \arctan\left(-8 + 2 \operatorname{arctanh}\left(x^{-1}\right)\right)}{2 \arctan\left(6\right) + \pi}$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \left(\tanh\left(4 + 1/2 \cot\left(1/2 \, s \left(2 \arctan\left(6\right) + \pi\right)\right)\right)\right)^{-1}]$$

Survivor Function

$$S(x) = 1 + \frac{-\pi + 2 \arctan\left(-8 + 2 \operatorname{arctanh}\left(x^{-1}\right)\right)}{2 \arctan\left(6\right) + \pi}$$

Hazard Function

$$h(x) = 2 \frac{1}{\left(4 \left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2 - 32 \operatorname{arctanh}\left(x^{-1}\right) + 65\right) \left(x^2 - 1\right) \left(\arctan\left(-8 + 2 \operatorname{arctanh}\left(x^{-1}\right)\right) +$$

Mean

$$mu = 4 \frac{1}{2 \arctan\left(6\right) + \pi} \int_1^{\frac{\mathrm{e}^2 + 1}{\mathrm{e}^2 - 1}} \frac{x}{\left(4 \left(\operatorname{arctanh}\left(x^{-1}\right)\right)^2 - 32 \operatorname{arctanh}\left(x^{-1}\right) + 65\right) \left(x^2 - 1\right)} \mathrm{d}x$$

Variance

$$sigma^2 = 4\,\frac{1}{(2\,\arctan(6)+\pi)^2}\left(2\int_1^{\frac{e^2+1}{e^2-1}}\frac{x^2}{\left(4\,(\operatorname{arctanh}(x^{-1}))^2-32\operatorname{arctanh}(x^{-1})+65\right)(x^2-1)}$$

Moment Function

$$m(x) = \int_1^{\frac{e+e^{-1}}{e-e^{-1}}} 4\,\frac{x^r}{(2\,\arctan(6)+\pi)\left(4\,(\operatorname{arctanh}(x^{-1}))^2-32\operatorname{arctanh}(x^{-1})+65\right)(x^2-1)}\,dx$$

Moment Generating Function

$$4\,\frac{1}{2\,\arctan(6)+\pi}\int_1^{\frac{e^2+1}{e^2-1}}\frac{e^{tx}}{\left(4\,(\operatorname{arctanh}(x^{-1}))^2-32\operatorname{arctanh}(x^{-1})+65\right)(x^2-1)}\,dx$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{\sqrt{x^2+1}\,(2\,\arctan(6)+\pi)\left(4\,(\operatorname{arcsinh}(x^{-1}))^2-32\operatorname{arcsinh}(x^{-1})+65\right)|x|}$$

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

Probability Distribution Function

$$f(x) = -4\,\frac{\cosh(x^{-1})}{(2\,\arctan(6)+\pi)\,x^2\left(-4\,(\cosh(x^{-1}))^2+32\,\sinh(x^{-1})-61\right)}$$

Cumulative Distribution Function

$$F(x) = -\frac{1}{2\,\arctan(6)+\pi}\left(i\ln\left((8+i)\left(e^{2\,x^{-1}}+ie^{x^{-1}}-8\,e^{x^{-1}}-1\right)\right)-i\ln\left((-8+i)\left(ie^{x^{-1}}-e\right.\right.\right.$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \left(\ln\left(RootOf\left((8-i)\,\_Z^2-65\,\_Z-8+i-e^{RootOf\left((-1+8\,i)\left(2080\,i\,RootOf\left((3713+2016\,i)\left(e^{2}\right.\right.\right.\right.\right.\right.$$

Survivor Function

$$S(x) = \frac{1}{2\,\arctan\left(6\right) + \pi}\left(i\ln\left(8 + i\left(\mathrm{e}^{2\,x^{-1}} + i\mathrm{e}^{x^{-1}} - 8\,\mathrm{e}^{x^{-1}} - 1\right)\frac{1}{\sqrt{\mathrm{e}^{4\,x^{-1}} - 16\,\mathrm{e}^{3\,x^{-1}} + 63\,\mathrm{e}^{2\,x^{-1}} +}\right.\right.$$

Hazard Function

$$h(x) = -4\,\frac{\cosh\left(x^{-1}\right)}{x^2\left(-4\,\left(\cosh\left(x^{-1}\right)\right)^2 + 32\,\sinh\left(x^{-1}\right) - 61\right)}\left(i\ln\left(\left(8+i\right)\left(\mathrm{e}^{2\,x^{-1}} + i\mathrm{e}^{x^{-1}} - 8\,\mathrm{e}^{x^{-1}} - 1\right)\right.\right.$$

Mean

$$mu = 4\,\frac{1}{2\,\arctan\left(6\right) + \pi}\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} \frac{\cosh\left(x^{-1}\right)}{x\left(4\,\left(\cosh\left(x^{-1}\right)\right)^2 - 32\,\sinh\left(x^{-1}\right) + 61\right)}\,\mathrm{d}x$$

Variance

$$sigma^2 = -4\,\frac{1}{\left(2\,\arctan\left(6\right) + \pi\right)^2}\left(4\,\left(\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} \frac{\cosh\left(x^{-1}\right)}{x\left(4\,\left(\cosh\left(x^{-1}\right)\right)^2 - 32\,\sinh\left(x^{-1}\right) + 61\right)}\,\mathrm{d}x\right.\right.$$

Moment Function

$$m(x) = \int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} -4\,\frac{x^r\cosh\left(x^{-1}\right)}{\left(2\,\arctan\left(6\right)+\pi\right)x^2\left(-4\,\left(\cosh\left(x^{-1}\right)\right)^2 + 32\,\sinh\left(x^{-1}\right) - 61\right)}\,\mathrm{d}x$$

Moment Generating Function

$$4\,\frac{1}{2\,\arctan\left(6\right)+\pi}\int_0^{\left(\ln\left(1+\sqrt{2}\right)\right)^{-1}} \frac{\mathrm{e}^{tx}\cosh\left(x^{-1}\right)}{x^2\left(4\,\left(\cosh\left(x^{-1}\right)\right)^2 - 32\,\sinh\left(x^{-1}\right) + 61\right)}\,\mathrm{d}x$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{\sqrt{x^2 - 2\,x + 2}\left(2\,\arctan\left(6\right)+\pi\right)\left(4\,\left(\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)\right)^2 - 24\,\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right) + 3\right.}$$

Cumulative Distribution Function

$$F(x) = 4\,\frac{1}{2\,\arctan\left(6\right)+\pi}\int_1^x \frac{1}{\sqrt{t^2 - 2\,t + 2}\left(4\,\left(\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)\right)^2 - 24\,\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right) + \right.}$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = \frac{1}{2\,\arctan\left(6\right) + \pi}\left(2\,\arctan\left(6\right) + \pi - 4\int_{1}^{x}\frac{1}{\sqrt{t^2 - 2\,t + 2}\left(4\,\left(\operatorname{arccsch}\left(\left(t-1\right)^{-1}\right)\right)^2 - 24\,a\right.}\right.$$

Hazard Function

$$h(x) = -4\,\frac{1}{\sqrt{x^2 - 2\,x + 2}\left(4\,\left(\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)\right)^2 - 24\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right) + 37\right)}\left(-2\,\arctan\right.$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \infty$$

Moment Generating Function

$$\int_{1}^{\infty} 4\,\frac{\mathrm{e}^{tx}}{\sqrt{x^2 - 2\,x + 2}\left(2\,\arctan\left(6\right) + \pi\right)\left(4\,\left(\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right)\right)^2 - 24\operatorname{arccsch}\left(\left(x-1\right)^{-1}\right) + 37\right)}$$

---

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

Probability Distribution Function

$$f(x) = -4\,\frac{1}{\left(2\,\arctan\left(6\right) + \pi\right)\left(37\,\left(\operatorname{arctanh}\left(x\right)\right)^2 - 24\operatorname{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}$$

Cumulative Distribution Function

$$F(x) = 2\,\frac{1}{2\,\arctan\left(6\right) + \pi}\left(\arctan\left(6\right) + \arctan\left(\frac{37\operatorname{arctanh}\left(x\right)}{2} - 6\right)\right)$$

Inverse Cumulative Distribution Function

$$F^{-1} = [s \mapsto \tanh\left(\frac{12}{37} + \frac{2\,\tan\left(s\arctan\left(6\right) + 1/2\,s\pi - \arctan\left(6\right)\right)}{37}\right)]$$

Survivor Function

$$S(x) = \frac{1}{2\,\arctan\left(6\right) + \pi}\left(\pi - 2\,\arctan\left(\frac{37\,\mathrm{arctanh}\left(x\right)}{2} - 6\right)\right)$$

Hazard Function

$$h(x) = -4\,\frac{1}{\left(37\,\left(\mathrm{arctanh}\left(x\right)\right)^2 - 24\,\mathrm{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}\left(\pi - 2\,\arctan\left(\frac{37\,\mathrm{arctanh}\left(x\right)}{2} - 6\right.\right.$$

Mean

$$mu = -4\,\frac{1}{2\,\arctan\left(6\right) + \pi}\int_0^1 \frac{x}{\left(37\,\left(\mathrm{arctanh}\left(x\right)\right)^2 - 24\,\mathrm{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}\,\mathrm{d}x$$

Variance

$$sigma^2 = -4\,\frac{1}{\left(2\,\arctan\left(6\right) + \pi\right)^2}\left(2\int_0^1 \frac{x^2}{\left(37\,\left(\mathrm{arctanh}\left(x\right)\right)^2 - 24\,\mathrm{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}\,\mathrm{d}x\,\mathrm{arc}\right.$$

Moment Function

$$m(x) = \int_0^1 -4\,\frac{x^r}{\left(2\,\arctan\left(6\right) + \pi\right)\left(37\,\left(\mathrm{arctanh}\left(x\right)\right)^2 - 24\,\mathrm{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}\,\mathrm{d}x$$

Moment Generating Function

$$-4\,\frac{1}{2\,\arctan\left(6\right) + \pi}\int_0^1 \frac{\mathrm{e}^{tx}}{\left(37\,\left(\mathrm{arctanh}\left(x\right)\right)^2 - 24\,\mathrm{arctanh}\left(x\right) + 4\right)\left(x^2 - 1\right)}\,\mathrm{d}x\,{}_1$$

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

Probability Distribution Function

$$f(x) = 4\,\frac{1}{\sqrt{x^2 + 1}\left(2\,\arctan\left(6\right) + \pi\right)\left(37\,\left(\mathrm{arccsch}\left(x\right)\right)^2 - 24\,\mathrm{arccsch}\left(x\right) + 4\right)\left|x\right|}$$

Cumulative Distribution Function

$$F(x) = 4\,\frac{1}{2\,\arctan\left(6\right)+\pi}\int_0^x \frac{1}{\sqrt{t^2+1}\left(37\,\left(\operatorname{arccsch}\left(t\right)\right)^2-24\operatorname{arccsch}\left(t\right)+4\right)\left|t\right|}\,\mathrm{d}t$$

Inverse Cumulative Distribution Function

$$F^{-1} =$$

Survivor Function

$$S(x) = \frac{1}{2\,\arctan\left(6\right)+\pi}\left(2\,\arctan\left(6\right)+\pi-4\int_0^x \frac{1}{\sqrt{t^2+1}\left(37\,\left(\operatorname{arccsch}\left(t\right)\right)^2-24\operatorname{arccsch}\left(t\right)+4\right.}\right.$$

Hazard Function

$$h(x) = 4\,\frac{1}{\sqrt{x^2+1}\left(37\,\left(\operatorname{arccsch}\left(x\right)\right)^2-24\operatorname{arccsch}\left(x\right)+4\right)\left|x\right|}\left(2\,\arctan\left(6\right)+\pi-4\int_0^x \frac{}{\sqrt{t^2+1}\,(}\right.$$

Mean

$$mu = \infty$$

Variance

$$sigma^2 = undefined$$

Moment Function

$$m(x) = \int_0^\infty 4\,\frac{x^r}{\sqrt{x^2+1}\left(2\,\arctan\left(6\right)+\pi\right)\left(37\,\left(\operatorname{arccsch}\left(x\right)\right)^2-24\operatorname{arccsch}\left(x\right)+4\right)\left|x\right|}\,\mathrm{d}x$$

Moment Generating Function

$$\int_0^\infty 4\,\frac{\mathrm{e}^{tx}}{\sqrt{x^2+1}\left(2\,\arctan\left(6\right)+\pi\right)\left(37\,\left(\operatorname{arccsch}\left(x\right)\right)^2-24\operatorname{arccsch}\left(x\right)+4\right)x}\,\mathrm{d}x_1$$

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

Probability Distribution Function

$$f(x) = -4\,\frac{\cosh\left(x\right)}{\left(2\,\arctan\left(6\right)+\pi\right)\left(-4\,\left(\cosh\left(x\right)\right)^2+24\,\sinh\left(x\right)-33\right)}$$

Cumulative Distribution Function

$$F(x) = \frac{1}{2\,\arctan\left(6\right) + \pi}\left(i\ln\left(\frac{\left(6+i\right)\left(i\mathrm{e}^{x} + \mathrm{e}^{2\,x} - 6\,\mathrm{e}^{x} - 1\right)}{\sqrt{\mathrm{e}^{4\,x} - 12\,\mathrm{e}^{3\,x} + 35\,\mathrm{e}^{2\,x} + 12\,\mathrm{e}^{x} + 1}}\right) - i\ln\left(\frac{\left(-6+i\right)\left(i\mathrm{e}^{x} - \mathrm{e}^{2}\right.\right.\right.$$

Inverse Cumulative Distribution Function

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

Survivor Function

$$S(x) = \frac{1}{2\,\arctan\left(6\right) + \pi}\left(-i\ln\left(\frac{\left(6+i\right)\left(i\mathrm{e}^{x} + \mathrm{e}^{2\,x} - 6\,\mathrm{e}^{x} - 1\right)}{\sqrt{\mathrm{e}^{4\,x} - 12\,\mathrm{e}^{3\,x} + 35\,\mathrm{e}^{2\,x} + 12\,\mathrm{e}^{x} + 1}}\right) + i\ln\left(\frac{\left(6-i\right)\left(-i\mathrm{e}^{x} + \right.\right.\right.$$

Hazard Function

$$h(x) = -4\,\frac{\cosh\left(x\right)}{4\,\left(\cosh\left(x\right)\right)^{2} - 24\,\sinh\left(x\right) + 33}\left(i\ln\left(\frac{\left(6+i\right)\left(i\mathrm{e}^{x} + \mathrm{e}^{2\,x} - 6\,\mathrm{e}^{x} - 1\right)}{\sqrt{\mathrm{e}^{4\,x} - 12\,\mathrm{e}^{3\,x} + 35\,\mathrm{e}^{2\,x} + 12\,\mathrm{e}^{x} + 1}}\right) - i\ln\left(\right.\right.$$