"ExponentialPowerRV(a,b)"

$$[x \mapsto e^{1-e^{a\,x^b}} e^{a\,x^b} a\,b\,x^{b-1}]$$

---

$$t \mapsto t^2$$

Probability Distribution Function

$$f(x) = 1/2\,e^{1-e^{a\,x^{b/2}}+a\,x^{b/2}} a\,b\,x^{b/2-1} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = 2\,\frac{e^{1-e^{a\left(x^2\right)^b}+a\left(x^2\right)^b} a\,b\,\left(x^2\right)^b}{x} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = \frac{e^{1-e^{a\left(x^{-1}\right)^b}+a\left(x^{-1}\right)^b} a\,b\,\left(x^{-1}\right)^b}{x} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = e^{1-e^{a\,(\tan(x))^b}+a\,(\tan(x))^b} a\,b\,(\tan(x))^{b-1}\left(1+(\tan(x))^2\right) \qquad 0 < x < \pi/2$$

---

$$t \mapsto e^t$$

Probability Distribution Function

$$f(x) = \frac{e^{1-e^{a\,(\ln(x))^b}+a\,(\ln(x))^b} a\,b\,\left(\ln(x)\right)^{b-1}}{x} \qquad 1 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = e^{a\,e^{b\,x}+b\,x-e^{a\,e^{b\,x}}+1} a\,b \qquad -\infty < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = \frac{e^{1-e^{a\,(-\ln(x))^b}+a\,(-\ln(x))^b} a\,b\,\left(-\ln(x)\right)^{b-1}}{x} \qquad 0 < x < 1$$

---

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

Probability Distribution Function

$$f(x) = e^{a\,e^{-b\,x}-b\,x-e^{a\,e^{-b\,x}}+1} a\,b \qquad -\infty < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = e^{1-e^{a\,(e^x-1)^b}+a\,(e^x-1)^b+x} a\,b\,\left(e^x-1\right)^{b-1} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = \frac{a\, b\, \left({\rm e}^{x^{-1}} - 2\right)^{b-1}}{x^2} {\rm e}^{-\frac{-a\, \left({\rm e}^{x^{-1}}-2\right)^{b} x + {\rm e}^{a\, \left({\rm e}^{x^{-1}}-2\right)^{b}} x - x - 1}{x}} \qquad 0 < x < \left(\ln(2)\right)^{-1}$$

---

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

Probability Distribution Function

$$f(x) = -\frac{{\rm e}^{1-{\rm e}^{a\, (\operatorname{arctanh}(x))^{b}} + a\, (\operatorname{arctanh}(x))^{b}} a\, b\, \left(\operatorname{arctanh}(x)\right)^{b-1}}{x^2 - 1} \qquad 0 < x < 1$$

---

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

Probability Distribution Function

$$f(x) = \frac{{\rm e}^{1-{\rm e}^{a\, (\operatorname{arcsinh}(x))^{b}} + a\, (\operatorname{arcsinh}(x))^{b}} a\, b\, \left(\operatorname{arcsinh}(x)\right)^{b-1}}{\sqrt{x^2 + 1}} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = {\rm e}^{1-{\rm e}^{a\, (\sinh(x))^{b}} + a\, (\sinh(x))^{b}} a\, b\, \left(\sinh(x)\right)^{b-1} \cosh(x) \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = \frac{{\rm e}^{1-{\rm e}^{a\, (-1+\operatorname{arccsch}(x))^{b}} + a\, (-1+\operatorname{arccsch}(x))^{b}} a\, b\, \left(-1 + \operatorname{arccsch}(x)\right)^{b-1}}{\sqrt{x^2 + 1}\, |x|} \qquad 0 < x < 2\, \left({\rm e} - {\rm e}^{-1}\right)^{-1}$$

---

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

Probability Distribution Function

$$f(x) = -\frac{a\, b\, \cosh(x)}{(\sinh(x) - 1)\sinh(x)} \mathrm{e}^{1-\mathrm{e}^{a\left(-\frac{\sinh(x)-1}{\sinh(x)}\right)^{b}}+a\left(-\frac{\sinh(x)-1}{\sinh(x)}\right)^{b}} \left(-\frac{\sinh(x) - 1}{\sinh(x)}\right)^{b} \qquad 0 < x < \ln \Big($$

---

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

Probability Distribution Function

$$f(x) = \frac{\mathrm{e}^{1-\mathrm{e}^{a\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^{b}}+a\left(-1+\operatorname{arctanh}\left(x^{-1}\right)\right)^{b}} a\, b\, \left(-1 + \operatorname{arctanh}\left(x^{-1}\right)\right)^{b-1}}{x^2 - 1} \qquad 1 < x < \frac{\mathrm{e} + \mathrm{e}^{-1}}{\mathrm{e} - \mathrm{e}^{-1}}$$

---

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

Probability Distribution Function

$$f(x) = \frac{\mathrm{e}^{1-\mathrm{e}^{a\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^{b}}+a\left(-1+\operatorname{arcsinh}\left(x^{-1}\right)\right)^{b}} a\, b\, \left(-1 + \operatorname{arcsinh}\left(x^{-1}\right)\right)^{b-1}}{\sqrt{x^2+1}\,|x|} \qquad 0 < x < 2\, \big(\mathrm{e} - \mathrm{e}^{-}$$

---

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

Probability Distribution Function

$$f(x) = \frac{\mathrm{e}^{1-\mathrm{e}^{a\left(-1+\sinh\left(x^{-1}\right)\right)^{b}}+a\left(-1+\sinh\left(x^{-1}\right)\right)^{b}} a\, b\, \left(-1 + \sinh\left(x^{-1}\right)\right)^{b-1} \cosh\left(x^{-1}\right)}{x^2} \qquad 0 < x < \Big(\ln \Big(1$$

---

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

Probability Distribution Function

$$f(x) = \frac{\mathrm{e}^{1-\mathrm{e}^{a\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^{b}}+a\left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^{b}} a\, b\, \left(\operatorname{arccsch}\left((x-1)^{-1}\right)\right)^{b-1}}{\sqrt{x^2 - 2\,x + 2}} \qquad 1 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = -\frac{e^{1-e^{a\left((\operatorname{arctanh}(x))^{-1}\right)^{b}}+a\left((\operatorname{arctanh}(x))^{-1}\right)^{b}} a\, b\, \left((\operatorname{arctanh}(x))^{-1}\right)^{b}}{\operatorname{arctanh}(x)\,(x^2-1)} \qquad 0 < x < 1$$

---

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

Probability Distribution Function

$$f(x) = \frac{e^{1-e^{a\,(\operatorname{arccsch}(x))^{-b}}+a\,(\operatorname{arccsch}(x))^{-b}} a\, b\, (\operatorname{arccsch}(x))^{-b-1}}{\sqrt{x^2+1}\,|x|} \qquad 0 < x < \infty$$

---

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

Probability Distribution Function

$$f(x) = e^{1-e^{a\,(\sinh(x))^{b}}+a\,(\sinh(x))^{b}} a\, b\, (\sinh(x))^{b-1} \cosh(x) \qquad 0 < x < \infty$$