

filename := "C:/LatexOutput/ArcTanGen.tex"

$$\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}$$

"i is", 1,

"-----"
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$$g := t \rightarrow t^2$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow - \frac{a}{\left(2 \arctan(a b) + \pi\right) \left(2 \sqrt{y} a^2 b - a^2 b^2 - y a^2 - 1\right) \sqrt{y}} \right], \right. \\ \left. [0, \infty], ["Continuous", "PDF"] \right]$$

"l and u", 0, ∞

$$\text{"g(x)", } x^2, \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}, \text{"ArcTanRV(a,b)"}$$

$$\text{"f(x)", } - \frac{a}{\left(2 \arctan(a b) + \pi\right) \left(2 \sqrt{x} a^2 b - a^2 b^2 - x a^2 - 1\right) \sqrt{x}}$$

"i is", 2,

"-----"
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$$g := t \rightarrow \sqrt{t}$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \frac{4 a y}{\left(2 \arctan(a b) + \pi\right) \left(a^2 y^4 - 2 a^2 b y^2 + a^2 b^2 + 1\right)} \right], [0, \infty], \right. \\ \left. ["Continuous", "PDF"] \right]$$

"l and u", 0, ∞

$$\text{"g(x)", } \sqrt{x}, \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}, \text{"ArcTanRV(a,b)"}$$

$$\text{"f(x)", } \frac{4 a x}{\left(2 \arctan(a b) + \pi\right) \left(a^2 x^4 - 2 a^2 b x^2 + a^2 b^2 + 1\right)}$$

"i is", 3,

"-----"
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$$g := t \rightarrow \frac{1}{t}$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \frac{2 a}{(2 \arctan(a b) + \pi) (a^2 b^2 y^2 - 2 a^2 b y + a^2 + y^2)} \right], [0, \infty], \right. \\ \left. ["Continuous", "PDF"] \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \frac{1}{x}, "base", \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)}, "ArcTanRV(a,b)"$$

$$"f(x)", \frac{2 a}{(2 \arctan(a b) + \pi) (a^2 b^2 x^2 - 2 a^2 b x + a^2 + x^2)}$$

$$"i \text{ is}", 4,$$

$$"-----"$$

$$g := t \rightarrow \arctan(t)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \frac{2 a (1 + \tan(y)^2)}{(2 \arctan(a b) + \pi) (\tan(y)^2 a^2 - 2 \tan(y) a^2 b + a^2 b^2 + 1)} \right], \right. \\ \left. \left[0, \frac{1}{2} \pi \right], ["Continuous", "PDF"] \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \arctan(x), "base", \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)}, "ArcTanRV(a,b)"$$

$$"f(x)", \frac{2 a (1 + \tan(x)^2)}{(2 \arctan(a b) + \pi) (\tan(x)^2 a^2 - 2 \tan(x) a^2 b + a^2 b^2 + 1)}$$

$$"i \text{ is}", 5,$$

$$"-----"$$

$$g := t \rightarrow e^t$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \frac{2 a}{(2 \arctan(a b) + \pi) (\ln(y)^2 a^2 - 2 \ln(y) a^2 b + a^2 b^2 + 1) y} \right], \right. \\ \left. [1, \infty], ["Continuous", "PDF"] \right]$$

$$"l \text{ and } u", 0, \infty$$

"g(x)", e^x , "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}$, "ArcTanRV(a,b)"

"f(x)", $\frac{2 a}{\left(2 \arctan(a b) + \pi\right) \left(\ln(x)^2 a^2 - 2 \ln(x) a^2 b + a^2 b^2 + 1\right) x}$

"i is", 6,

"-----"

$$g := t \rightarrow \ln(t)$$

$$l := 0$$

$$u := \infty$$

$Temp := \left[\left[y \rightarrow \frac{2 a e^{y^2}}{\left(2 \arctan(a b) + \pi\right) \left(e^{2 y^2} a^2 - 2 e^{y^2} a^2 b + a^2 b^2 + 1\right)} \right], [-\infty, \infty], \right.$
 $\left. ["Continuous", "PDF"] \right]$

"l and u", 0, ∞

"g(x)", $\ln(x)$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}$, "ArcTanRV(a,b)"

"f(x)", $\frac{2 a e^x}{\left(2 \arctan(a b) + \pi\right) \left(e^{2 x} a^2 - 2 e^x a^2 b + a^2 b^2 + 1\right)}$

"i is", 7,

"-----"

$$g := t \rightarrow e^{-t}$$

$$l := 0$$

$$u := \infty$$

$Temp := \left[\left[y \rightarrow \frac{2 a}{\left(2 \arctan(a b) + \pi\right) \left(\ln(y)^2 a^2 + 2 \ln(y) a^2 b + a^2 b^2 + 1\right) y} \right], \right.$
 $\left. [0, 1], ["Continuous", "PDF"] \right]$

"l and u", 0, ∞

"g(x)", e^{-x} , "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) \left(1 + a^2 (x - b)^2\right)}$, "ArcTanRV(a,b)"

"f(x)", $\frac{2 a}{\left(2 \arctan(a b) + \pi\right) \left(\ln(x)^2 a^2 + 2 \ln(x) a^2 b + a^2 b^2 + 1\right) x}$

"i is", 8,

"-----"

$$g := t \rightarrow -\ln(t)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \frac{2 a \tilde{e}^{y \tilde{~}}}{(2 \arctan(a \tilde{~} b \tilde{~}) + \pi) (\tilde{e}^{2 y \tilde{~}} a \tilde{~}^2 b \tilde{~}^2 - 2 \tilde{e}^{y \tilde{~}} a \tilde{~}^2 b \tilde{~} + \tilde{e}^{2 y \tilde{~}} + a \tilde{~}^2)} \right], [-\infty, \infty], ["Continuous", "PDF"] \right]$$

$$\text{"l and u", } 0, \infty$$

$$\text{"g(x)", } -\ln(x), \text{"base", } \frac{a \tilde{~}}{\left(\arctan(a \tilde{~} b \tilde{~}) + \frac{1}{2} \pi \right) (1 + a \tilde{~}^2 (x - b \tilde{~})^2)}, \text{"ArcTanRV(a,b)"}$$

$$\text{"f(x)", } \frac{2 a \tilde{~} e^x}{(2 \arctan(a \tilde{~} b \tilde{~}) + \pi) (\tilde{e}^{2 x} a \tilde{~}^2 b \tilde{~}^2 - 2 \tilde{e}^x a \tilde{~}^2 b \tilde{~} + \tilde{e}^{2 x} + a \tilde{~}^2)}$$

"i is", 9,

"-----"
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$$g := t \rightarrow \ln(t + 1)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow (2 a \tilde{~} e^{y \tilde{~}}) / \left((2 \arctan(a \tilde{~} b \tilde{~}) + \pi) (\tilde{e}^{2 y \tilde{~}} a \tilde{~}^2 - 2 \tilde{e}^{y \tilde{~}} a \tilde{~}^2 b \tilde{~} + a \tilde{~}^2 b \tilde{~}^2 - 2 \tilde{e}^{y \tilde{~}} a \tilde{~}^2 + 2 a \tilde{~}^2 b \tilde{~} + a \tilde{~}^2 + 1) \right) \right], [0, \infty], ["Continuous", "PDF"] \right]$$

$$\text{"l and u", } 0, \infty$$

$$\text{"g(x)", } \ln(x + 1), \text{"base", } \frac{a \tilde{~}}{\left(\arctan(a \tilde{~} b \tilde{~}) + \frac{1}{2} \pi \right) (1 + a \tilde{~}^2 (x - b \tilde{~})^2)}, \text{"ArcTanRV(a,b)"}$$

"f(x)",

$$\frac{2 a \tilde{~} e^x}{(2 \arctan(a \tilde{~} b \tilde{~}) + \pi) (\tilde{e}^{2 x} a \tilde{~}^2 - 2 \tilde{e}^x a \tilde{~}^2 b \tilde{~} + a \tilde{~}^2 b \tilde{~}^2 - 2 \tilde{e}^x a \tilde{~}^2 + 2 a \tilde{~}^2 b \tilde{~} + a \tilde{~}^2 + 1)}$$

"i is", 10,

"-----"
-----"

$$g := t \rightarrow \frac{1}{\ln(t + 2)}$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow \left(2 a \tilde{~} e^{\frac{1}{y \tilde{~}}} \right) / \left((2 \arctan(a \tilde{~} b \tilde{~}) + \pi) \left(\tilde{e}^{\frac{2}{y \tilde{~}}} a \tilde{~}^2 - 2 \tilde{e}^{\frac{1}{y \tilde{~}}} a \tilde{~}^2 b \tilde{~} + a \tilde{~}^2 b \tilde{~}^2 - 4 \tilde{e}^{\frac{1}{y \tilde{~}}} a \tilde{~}^2 + 4 a \tilde{~}^2 b \tilde{~} + 4 a \tilde{~}^2 + 1 \right) y \tilde{~}^2 \right) \right], \left[0, \frac{1}{\ln(2)} \right], ["Continuous", "PDF"] \right]$$

"l and u", 0, ∞

"g(x)", $\frac{1}{\ln(x+2)}$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) (1 + a^2 (x - b)^2)}$, "ArcTanRV(a,b)"

"f(x)", $\left(2 a e^{\frac{1}{x}}\right) / \left(\left(2 \arctan(a b) + \pi\right) \left(e^{\frac{2}{x}} a^2 - 2 e^{\frac{1}{x}} a^2 b + a^2 b^2 - 4 e^{\frac{1}{x}} a^2 + 4 a^2 b + 4 a^2 + 1\right) x^2\right)$

"i is", 11,

"-----"

-----"

$g := t \rightarrow \tanh(t)$

$l := 0$

$u := \infty$

$Temp := \left[\left[y \rightarrow \right. \right.$

$\left. - (2 a) / \left(\left(2 \arctan(a b) + \pi \right) \left(\operatorname{arctanh}(y)^2 a^2 - 2 \operatorname{arctanh}(y) a^2 b + a^2 b^2 + 1 \right) (y^2 - 1) \right) \right], [0, 1], ["Continuous", "PDF"]]$

"l and u", 0, ∞

"g(x)", $\tanh(x)$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) (1 + a^2 (x - b)^2)}$, "ArcTanRV(a,b)"

"f(x)",

$- (2 a) / \left(\left(2 \arctan(a b) + \pi \right) \left(\operatorname{arctanh}(x)^2 a^2 - 2 \operatorname{arctanh}(x) a^2 b + a^2 b^2 + 1 \right) (x^2 - 1) \right)$

"i is", 12,

"-----"

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$g := t \rightarrow \sinh(t)$

$l := 0$

$u := \infty$

$Temp := \left[\left[y \rightarrow \right. \right.$

$\left. \rightarrow (2 a) / \left(\left(2 \arctan(a b) + \pi \right) \left(\operatorname{arcsinh}(y)^2 a^2 - 2 \operatorname{arcsinh}(y) a^2 b + a^2 b^2 + 1 \right) \sqrt{y^2 + 1} \right) \right], [0, \infty], ["Continuous", "PDF"]]$

"l and u", 0, ∞

"g(x)", $\sinh(x)$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) (1 + a^2 (x - b)^2)}$, "ArcTanRV(a,b)"

"f(x)",

$$\frac{2 a \sim}{(2 \arctan(a \sim b \sim) + \pi) (\operatorname{arcsinh}(x)^2 a \sim^2 - 2 \operatorname{arcsinh}(x) a \sim^2 b \sim + a \sim^2 b \sim^2 + 1) \sqrt{x^2 + 1}}$$
 "i is", 13,
 "-----"
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$$g := t \rightarrow \operatorname{arcsinh}(t)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \sim \rightarrow \right. \right. \\
 - \frac{2 a \sim \cosh(y \sim)}{(2 \arctan(a \sim b \sim) + \pi) (2 \sinh(y \sim) a \sim^2 b \sim - a \sim^2 \cosh(y \sim)^2 - a \sim^2 b \sim^2 + a \sim^2 - 1)} \left. \right], [0, \\
 \infty], ["Continuous", "PDF"] \left. \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \operatorname{arcsinh}(x), "base", \frac{a \sim}{\left(\arctan(a \sim b \sim) + \frac{1}{2} \pi \right) (1 + a \sim^2 (x - b \sim)^2)}, "ArcTanRV(a,b)"$$

$$"f(x)", - \frac{2 a \sim \cosh(x)}{(2 \arctan(a \sim b \sim) + \pi) (2 \sinh(x) a \sim^2 b \sim - a \sim^2 \cosh(x)^2 - a \sim^2 b \sim^2 + a \sim^2 - 1)}$$

"i is", 14,
 "-----"
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$$g := t \rightarrow \operatorname{csch}(t + 1)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \sim \rightarrow (2 a \sim) \Big/ \left(\sqrt{y \sim^2 + 1} (2 \arctan(a \sim b \sim) + \pi) (\operatorname{arccsch}(y \sim)^2 a \sim^2 \right. \right. \right. \\
 - 2 \operatorname{arccsch}(y \sim) a \sim^2 b \sim + a \sim^2 b \sim^2 - 2 \operatorname{arccsch}(y \sim) a \sim^2 + 2 a \sim^2 b \sim + a \sim^2 + 1) |y \sim| \Big) \left. \right], \left[0, \right. \\
 \left. \frac{2}{e - e^{-1}} \right], ["Continuous", "PDF"] \left. \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \operatorname{csch}(x + 1), "base", \frac{a \sim}{\left(\arctan(a \sim b \sim) + \frac{1}{2} \pi \right) (1 + a \sim^2 (x - b \sim)^2)}, "ArcTanRV(a,b)"$$

$$"f(x)", (2 a \sim) \Big/ \left(\sqrt{x^2 + 1} (2 \arctan(a \sim b \sim) + \pi) (\operatorname{arccsch}(x)^2 a \sim^2 - 2 \operatorname{arccsch}(x) a \sim^2 b \sim \right. \\
 + a \sim^2 b \sim^2 - 2 \operatorname{arccsch}(x) a \sim^2 + 2 a \sim^2 b \sim + a \sim^2 + 1) |x| \Big)$$

"i is", 15,
 "-----"
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$$g := t \rightarrow \operatorname{arccsch}(t + 1)$$

$$l := 0$$

$$u := \infty$$

$$\begin{aligned} \text{Temp} := & \left[\left[y \rightarrow - (2 a \cosh(y)) \right] / \left((2 \arctan(a b) + \pi) (-a^2 b^2 \cosh(y)^2 \right. \right. \\ & - 2 a^2 b \cosh(y)^2 + 2 \sinh(y) a^2 b - a^2 \cosh(y)^2 + a^2 b^2 + 2 a^2 \sinh(y) \\ & \left. \left. + 2 a^2 b - \cosh(y)^2 + 1) \right) \right], [0, \ln(1 + \sqrt{2})], ["Continuous", "PDF"] \end{aligned}$$

"l and u", 0, ∞

$$\text{"g(x)", } \operatorname{arccsch}(x + 1), \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)},$$

"ArcTanRV(a,b)"

$$\begin{aligned} \text{"f(x)", } & - (2 a \cosh(x)) / \left((2 \arctan(a b) + \pi) (-a^2 b^2 \cosh(x)^2 - 2 a^2 b \cosh(x)^2 \right. \\ & + 2 \sinh(x) a^2 b - a^2 \cosh(x)^2 + a^2 b^2 + 2 \sinh(x) a^2 + 2 a^2 b - \cosh(x)^2 + 1) \\ & \left. \right) \end{aligned}$$

"i is", 16,

"-----"

$$g := t \rightarrow \frac{1}{\tanh(t + 1)}$$

$$l := 0$$

$$u := \infty$$

$$\begin{aligned} \text{Temp} := & \left[\left[y \rightarrow (2 a) \right] / \left((2 \arctan(a b) + \pi) \left(\operatorname{arctanh}\left(\frac{1}{y}\right)^2 a^2 \right. \right. \right. \\ & - 2 \operatorname{arctanh}\left(\frac{1}{y}\right) a^2 b + a^2 b^2 - 2 \operatorname{arctanh}\left(\frac{1}{y}\right) a^2 + 2 a^2 b + a^2 + 1 \left. \right) (y^2 \\ & \left. \left. - 1) \right) \right], \left[1, \frac{e + e^{-1}}{e - e^{-1}} \right], ["Continuous", "PDF"] \end{aligned}$$

"l and u", 0, ∞

$$\text{"g(x)", } \frac{1}{\tanh(x + 1)}, \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)},$$

"ArcTanRV(a,b)"

$$\begin{aligned} \text{"f(x)", } & (2 a) / \left((2 \arctan(a b) + \pi) \left(\operatorname{arctanh}\left(\frac{1}{x}\right)^2 a^2 - 2 \operatorname{arctanh}\left(\frac{1}{x}\right) a^2 b \right. \right. \\ & \left. \left. + a^2 b^2 - 2 \operatorname{arctanh}\left(\frac{1}{x}\right) a^2 + 2 a^2 b + a^2 + 1 \right) (x^2 - 1) \right) \end{aligned}$$

"i is", 17,

"-----"

$$g := t \rightarrow \frac{1}{\sinh(t+1)}$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \leadsto \rightarrow (2 \, a \leadsto) \right] \Big/ \left(\sqrt{y \leadsto^2 + 1} \, (2 \, \arctan(a \leadsto b \leadsto) + \pi) \left(\operatorname{arcsinh}\left(\frac{1}{y \leadsto}\right)^2 a \leadsto^2 \right. \right. \right. \\ \left. \left. \left. - 2 \, \operatorname{arcsinh}\left(\frac{1}{y \leadsto}\right) a \leadsto^2 b \leadsto + a \leadsto^2 b \leadsto^2 - 2 \, \operatorname{arcsinh}\left(\frac{1}{y \leadsto}\right) a \leadsto^2 + 2 \, a \leadsto^2 b \leadsto + a \leadsto^2 + 1 \right) |y \leadsto| \right) \right], \\ \left[0, \frac{2}{e - e^{-1}} \right], ["Continuous", "PDF"] \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \frac{1}{\sinh(x+1)}, "base", \frac{a \leadsto}{\left(\arctan(a \leadsto b \leadsto) + \frac{1}{2} \pi \right) (1 + a \leadsto^2 (x - b \leadsto)^2)},$$

$$"ArcTanRV(a,b)"$$

$$"f(x)", (2 \, a \leadsto) \Big/ \left(\sqrt{x^2 + 1} \, (2 \, \arctan(a \leadsto b \leadsto) + \pi) \left(\operatorname{arcsinh}\left(\frac{1}{x}\right)^2 a \leadsto^2 \right. \right. \\ \left. \left. - 2 \, \operatorname{arcsinh}\left(\frac{1}{x}\right) a \leadsto^2 b \leadsto + a \leadsto^2 b \leadsto^2 - 2 \, \operatorname{arcsinh}\left(\frac{1}{x}\right) a \leadsto^2 + 2 \, a \leadsto^2 b \leadsto + a \leadsto^2 + 1 \right) |x| \right)$$

$$"i \text{ is}", 18,$$

$$"-----"$$

$$g := t \rightarrow \frac{1}{\operatorname{arcsinh}(t+1)}$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \leadsto \rightarrow \left(2 \, a \leadsto \cosh\left(\frac{1}{y \leadsto}\right) \right) \right] \Big/ \left((2 \, \arctan(a \leadsto b \leadsto) + \pi) y \leadsto^2 \left(a \leadsto^2 \cosh\left(\frac{1}{y \leadsto}\right)^2 \right. \right. \right. \\ \left. \left. \left. - 2 \, \sinh\left(\frac{1}{y \leadsto}\right) a \leadsto^2 b \leadsto + a \leadsto^2 b \leadsto^2 - 2 \, \sinh\left(\frac{1}{y \leadsto}\right) a \leadsto^2 + 2 \, a \leadsto^2 b \leadsto + 1 \right) \right) \right], \left[0, \right. \\ \left. \frac{1}{\ln(1 + \sqrt{2})} \right], ["Continuous", "PDF"] \right]$$

$$"l \text{ and } u", 0, \infty$$

$$"g(x)", \frac{1}{\operatorname{arcsinh}(x+1)}, "base", \frac{a \leadsto}{\left(\arctan(a \leadsto b \leadsto) + \frac{1}{2} \pi \right) (1 + a \leadsto^2 (x - b \leadsto)^2)},$$

$$"ArcTanRV(a,b)"$$

$$"f(x)", \left(2 \, a \leadsto \cosh\left(\frac{1}{x}\right) \right) \Big/ \left((2 \, \arctan(a \leadsto b \leadsto) + \pi) x^2 \left(a \leadsto^2 \cosh\left(\frac{1}{x}\right)^2 - 2 \, \sinh\left(\frac{1}{x}\right) a \leadsto^2 b \leadsto \right. \right.$$

$$+ a^2 b^2 - 2 \sinh\left(\frac{1}{x}\right) a^2 + 2 a^2 b + 1 \Bigg) \Bigg)$$

"i is", 19,

"-----"
-----"

$$g := t \rightarrow \frac{1}{\operatorname{csch}(t)} + 1$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow (2 a) \Bigg/ \left(\sqrt{y^2 - 2 y + 2} \left(2 \arctan(a b) + \pi \right) \left(\operatorname{arccsch}\left(\frac{1}{y-1}\right)^2 a^2 \right. \right. \right. \right. \\ \left. \left. \left. - 2 \operatorname{arccsch}\left(\frac{1}{y-1}\right) a^2 b + a^2 b^2 + 1 \right) \right) \right] \right], [1, \infty], ["Continuous", "PDF"] \Bigg]$$

"l and u", 0, ∞

$$\text{"g(x)", } \frac{1}{\operatorname{csch}(x)} + 1, \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)},$$

"ArcTanRV(a,b)"

$$\text{"f(x)", } (2 a) \Bigg/ \left(\sqrt{x^2 - 2 x + 2} \left(2 \arctan(a b) + \pi \right) \left(\operatorname{arccsch}\left(\frac{1}{x-1}\right)^2 a^2 \right. \right. \\ \left. \left. - 2 \operatorname{arccsch}\left(\frac{1}{x-1}\right) a^2 b + a^2 b^2 + 1 \right) \right)$$

"i is", 20,

"-----"
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$$g := t \rightarrow \tanh\left(\frac{1}{t}\right)$$

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y \rightarrow - (2 a) \Bigg/ \left(\left(2 \arctan(a b) + \pi \right) \left(\operatorname{arctanh}(y)^2 a^2 b^2 \right. \right. \right. \right. \\ \left. \left. \left. - 2 \operatorname{arctanh}(y) a^2 b + \operatorname{arctanh}(y)^2 + a^2 \right) (y^2 - 1) \right) \right] \right], [0, 1], ["Continuous", \\ "PDF"] \Bigg]$$

"l and u", 0, ∞

$$\text{"g(x)", } \tanh\left(\frac{1}{x}\right), \text{"base", } \frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi \right) (1 + a^2 (x - b)^2)}, \text{"ArcTanRV(a,b)"}$$

$$\text{"f(x)", } - (2 a) \Bigg/ \left(\left(2 \arctan(a b) + \pi \right) \left(\operatorname{arctanh}(x)^2 a^2 b^2 - 2 \operatorname{arctanh}(x) a^2 b \right. \right. \\ \left. \left. + \operatorname{arctanh}(x)^2 + a^2 \right) (x^2 - 1) \right)$$

"i is", 21,

"-----"
-----"

$$g := t \rightarrow \operatorname{csch}\left(\frac{1}{t}\right)$$

$$l := 0$$

$$u := \infty$$

$$\text{Temp} := \left[\left[y \rightarrow (2 a) / \left(\sqrt{y^2 + 1} (2 \arctan(a b) + \pi) (\operatorname{arccsch}(y)^2 a^2 b^2 - 2 \operatorname{arccsch}(y) a^2 b + \operatorname{arccsch}(y)^2 + a^2) |y| \right) \right], [0, \infty], ["Continuous", "PDF"] \right]$$

"l and u", 0, ∞

"g(x)", $\operatorname{csch}\left(\frac{1}{x}\right)$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) (1 + a^2 (x - b)^2)}$, "ArcTanRV(a,b)"

"f(x)", $(2 a) / \left(\sqrt{x^2 + 1} (2 \arctan(a b) + \pi) (\operatorname{arccsch}(x)^2 a^2 b^2 - 2 \operatorname{arccsch}(x) a^2 b + \operatorname{arccsch}(x)^2 + a^2) |x| \right)$

"i is", 22,

"-----"

-----"

$$g := t \rightarrow \operatorname{arccsch}\left(\frac{1}{t}\right)$$

$$l := 0$$

$$u := \infty$$

$$\text{Temp} := \left[\left[y \rightarrow - \frac{2 a \cosh(y)}{(2 \arctan(a b) + \pi) (2 \sinh(y) a^2 b - a^2 \cosh(y)^2 - a^2 b^2 + a^2 - 1)} \right], [0, \infty], ["Continuous", "PDF"] \right]$$

"l and u", 0, ∞

"g(x)", $\operatorname{arccsch}\left(\frac{1}{x}\right)$, "base", $\frac{a}{\left(\arctan(a b) + \frac{1}{2} \pi\right) (1 + a^2 (x - b)^2)}$,

"ArcTanRV(a,b)"

"f(x)", $- \frac{2 a \cosh(x)}{(2 \arctan(a b) + \pi) (2 \sinh(x) a^2 b - a^2 \cosh(x)^2 - a^2 b^2 + a^2 - 1)}$

(1)