```
> restart;
  read("c:/appl/appl7.txt");
```

*PROCEDURES:*

*AllPermutations(n), AllCombinations(n, k), Benford(X), BootstrapRV(Data), CDF:CHF:HF:IDF:PDF:SF(X, [x])), CoefOfVar(X), Convolution(X, Y), ConvolutionIID(X, n), CriticalPoint(X, prob), Determinant(MATRIX), Difference(X, Y), Display(X), ExpectedValue(X, [g]), KSTest(X, Data, Parameters), Kurtosis(X), Maximum(X, Y), MaximumIID(X, n), Mean(X), MGF(X), Minimum(X, Y), MinimumIID(X, n), Mixture(MixParameters, MixRVs), MLE(X, Data, Parameters, [Rightcensor]), MLENHPP(X, Data, Parameters, obstime), MLEWeibull(Data, [Rightcensor]), MOM(X, Data, Parameters), NextCombination(Previous, size), NextPermutation(Previous), OrderStat(X, n, r, ["wo"]), PlotDist(X, [low], [high]), PlotEmpCDF(Data, [low], [high]), PlotEmpCIF(Data, [low], [high]), PlotEmpSF(Data, Censor), PlotEmpVsFittedCDF(X, Data, Parameters, [low], [high]), PlotEmpVsFittedCDF(X, Data, Parameters, [low], [high]), PlotEmpVsFittedSF(X, Data, Parameters, Censor, low, high), PPPlot(X, Data, Parameters), Product(X, Y), ProductIID(X, n), QQPlot(X, Data, Parameters), RangeStat(X, n, ["wo"]), Skewness(X), Transform(X, g), Truncate(X, low, high), Variance(X), VerifyPDF(X)*

*Procedure Notation:*
*X and Y are random variables*
*Greek letters are numeric or symbolic parameters*
*x is numeric or symbolic*
*n and r are positive integers, n >= r*
*low and high are numeric*
*g is a function*
*Brackets [] denote optional parameters*
*"double quotes" denote character strings*
*MATRIX is a 2 x 2 array of random variables*
*A capitalized parameter indicates that it must be*
*entered as a list --> ex. Data := [1, 12.4, 34, 52.45, 63]*

*Variate Generation:*

*ArcTanVariate(alpha, phi), BinomialVariate(n, p, m), ExponentialVariate(lambda), NormalVariate(mu, sigma), UniformVariate(), WeibullVariate(lambda, kappa, m)*

*DATA SETS:*

*BallBearing, HorseKickFatalities, Hurricane, MP6, RatControl, RatTreatment, USSHalfBeak*

*ArcSinRV(), ArcTanRV(alpha, phi), BetaRV(alpha, beta), CauchyRV(a, alpha), ChiRV(n),* *ChiSquareRV(n), ErlangRV(lambda, n), ErrorRV(mu, alpha, d), ExponentialRV(lambda), ExponentialPowerRV(lambda, kappa), ExtremeValueRV(alpha, beta), FRV(n1, n2), GammaRV(lambda, kappa), GeneralizedParetoRV(gamma, delta, kappa), GompertzRV(delta, kappa), HyperbolicSecantRV(), HyperExponentialRV(p, l), HypoExponentialRV(l), IDBRV(gamma, delta, kappa), InverseGaussianRV(lambda, mu), InvertedGammaRV(alpha, beta), KSRV(n), LaPlaceRV(omega, theta), LogGammaRV(alpha, beta), LogisticRV(kappa, lambda), LogLogisticRV(lambda, kappa), LogNormalRV(mu, sigma), LomaxRV(kappa, lambda), MakehamRV(gamma, delta, kappa), MuthRV(kappa), NormalRV(mu, sigma), ParetoRV(lambda, kappa), RayleighRV(lambda), StandardCauchyRV(), StandardNormalRV(), StandardTriangularRV(m), StandardUniformRV(), TRV(n), TriangularRV(a, m, b), UniformRV(a, b), WeibullRV(lambda, kappa)*

```
Error, attempting to assign to `DataSets` which is protected.
Try declaring `local DataSets`; see ?protect for details.
```

```
> bf := MakehamRV(1,2,2);
  bfname := "MakehamRV(1,2,2)";
```

$$bf := \left[\left[x \to \left(1 + 2\, 2^x\right) e^{-x - \frac{2\left(2^x - 1\right)}{\ln(2)}}\right], [0, \infty], ["\text{Continuous}", "\text{PDF}"]\right]$$

$$bfname := "\text{MakehamRV(1,2,2)}" \quad \textbf{(1)}$$

```
> #plot(1/csch(t)+1, t = 0..0.0010);
  #plot(diff(1/csch(t),t), t=0..0.0010);
  #limit(1/csch(t), t=0);
> solve(exp(-t) = y, t);
```

$$-\ln(y) \quad \textbf{(2)}$$

```
> # discarded  -ln(t + 1),  t-> csch(t),t->arccsch(t),t -> tan(t),
> glist := [t -> t^2 , t -> sqrt(t),  t -> 1/t,  t -> arctan(t),  t
  -> exp(t), t -> ln(t), t -> exp(-t), t -> -ln(t),  t -> ln(t+1),
  t -> 1/(ln(t+2)), t -> tanh(t), t -> sinh(t), t -> arcsinh(t),
  t-> csch(t+1),t->arccsch(t+1), t-> 1/tanh(t+1), t->  1/sinh(t+1),
   t->  1/arcsinh(t+1), t->  1/csch(t)+1, t-> tanh(1/t), t->csch
  (1/t), t-> arccsch(1/t), t-> arctanh(1/t)  ]:
  base := t -> PDF(bf, t):
  print(base(x)):

  for i from 1 to 22(glist) do
     print( "i is", i, "  -----------------------------------------
  ------------------------------------------------------------------
  -------------");
     g := glist[i]:
     l := bf[2][1];
     u := bf[2][2];
     Temp := Transform(bf, [[unapply(g(x), x)],[l,u]]);


    #print( "l and u", l, u );
```

```
    #print("g(x)", g(x), "base", base(x),bfname);
    print("f(x)", PDF(Temp, x));
    #print("F(x)", CDF(Temp, x));
    #print("IDF(x)", IDF(Temp));
    #print("S(x)", SF(Temp, x));
    print("h(x)", HF(Temp, x));
    #print("mean and variance", Mean(Temp), Variance(Temp));
    #assume(r > 0); mf := int(x^r*PDF(Temp, x), x = Temp[2][1] ..
  Temp[2][2]);
    #print("MF", mf);
    #print("MGF", MGF(Temp));
    PlotDist(PDF(Temp), bf[2][1], bf[2][2]);
    PlotDist(HF(Temp), bf[2][1], bf[2][2]);
    latex(PDF(Temp,x));
    #print("transforming with", [[x->g(x)],[0,infinity]]);
    #X2 := Transform(bf, [[x->g(x)],[0,infinity]]);
    #print("pdf of X2 = ", PDF(X2,x));
    #print("pdf of Temp = ", PDF(Temp,x));
  od;
```

$$\left(1+2\,2^{x}\right) \mathrm{e}^{-x-\frac{2\left(2^{x}-1\right)}{\ln(2)}}$$

"i is", 1,

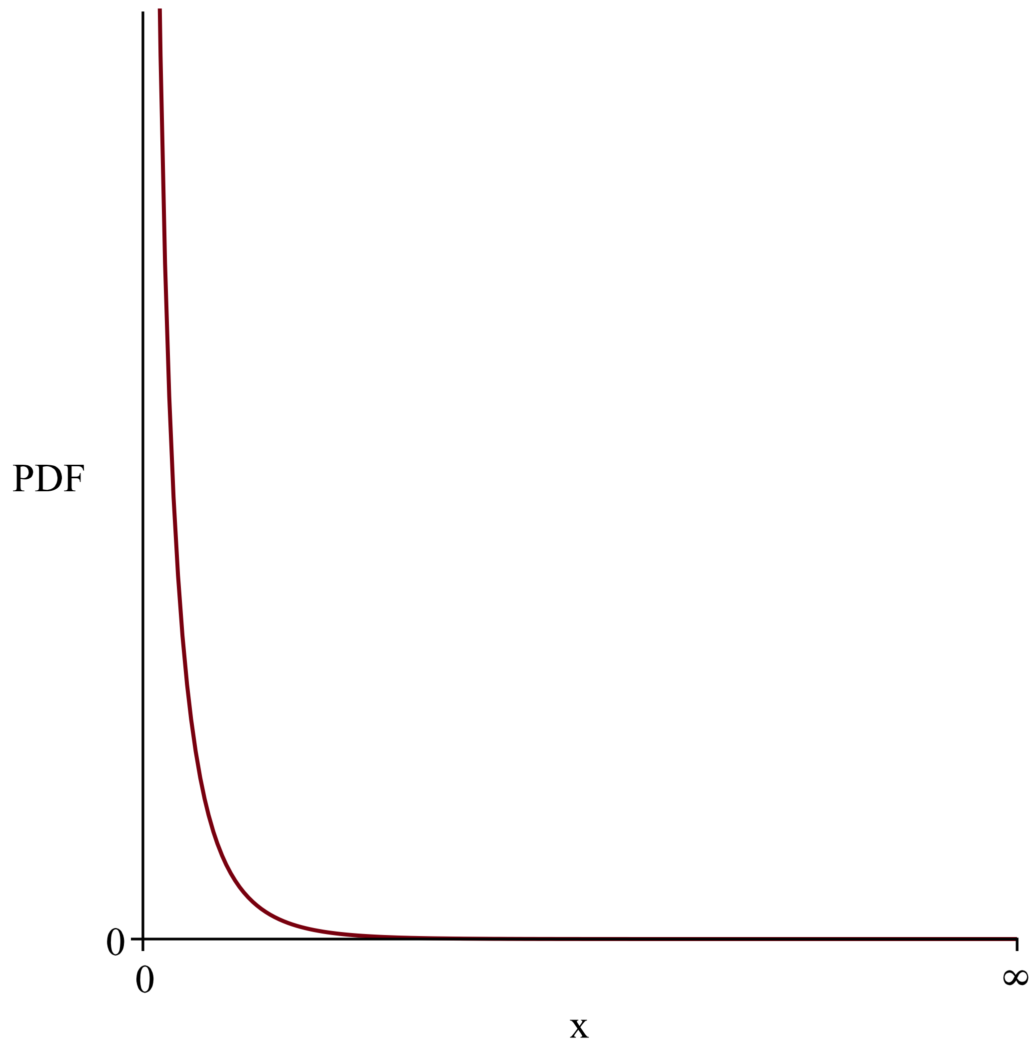
" --------------------------------------------------------------------------------------------------------------"

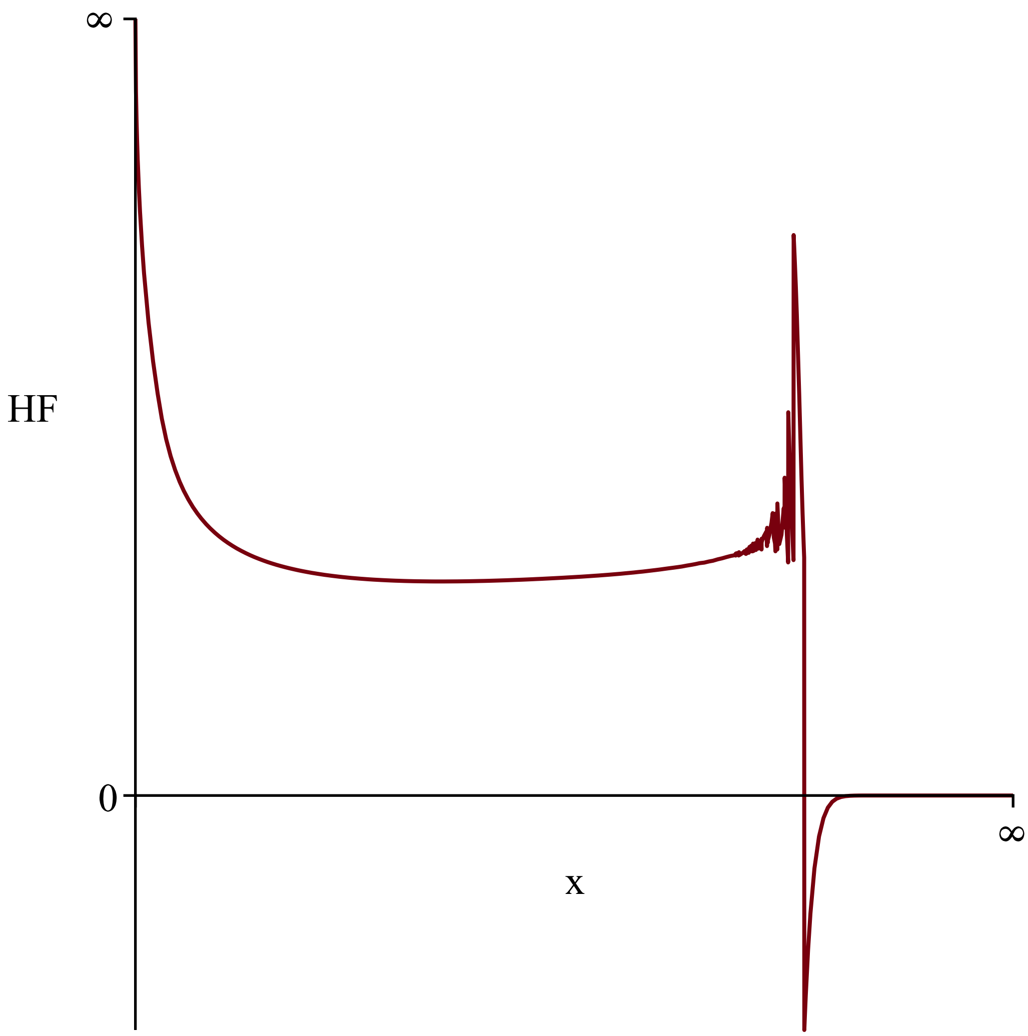
$$g := t \to t^{2}$$
$$l := 0$$
$$u := \infty$$

$$Temp := \left[\left[y\sim \to \frac{1}{2}\,\frac{\left(1+2^{1+\sqrt{y\sim}}\right) \mathrm{e}^{-\frac{\sqrt{y\sim}\,\ln(2)+2^{1+\sqrt{y\sim}}-2}{\ln(2)}}}{\sqrt{y\sim}}\right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, \frac{1}{2}\,\frac{\left(1+2^{1+\sqrt{x}}\right) \mathrm{e}^{-\frac{\sqrt{x}\,\ln(2)+2^{1+\sqrt{x}}-2}{\ln(2)}}}{\sqrt{x}}$$

$$\text{"h(x)"}, -\frac{\mathrm{e}^{-\frac{\sqrt{x}\,\ln(2)+2^{1+\sqrt{x}}-2}{\ln(2)}}\left(1+2^{1+\sqrt{x}}\right)}{\sqrt{x}\left(-2+\mathrm{e}^{\frac{2}{\ln(2)}}\left(\int_{0}^{x}\frac{\left(1+2^{1+\sqrt{t}}\right) \mathrm{e}^{-\frac{\sqrt{t}\,\ln(2)+2^{1+\sqrt{t}}}{\ln(2)}}}{\sqrt{t}}\,\mathrm{d}t\right)\right)}$$


PDF
0
0
∞
x




```
1/2\,{\frac {1+{2}^{1+\sqrt {x}}}{\sqrt {x}}{{\rm e}^{-{\frac
{\sqrt {
x}\ln  \left( 2 \right) +{2}^{1+\sqrt {x}}-2}{\ln  \left( 2
\right) }}
}}}
```

"i is", 2,
" -------------------------------------------------------------------------------------------------------
----------"

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

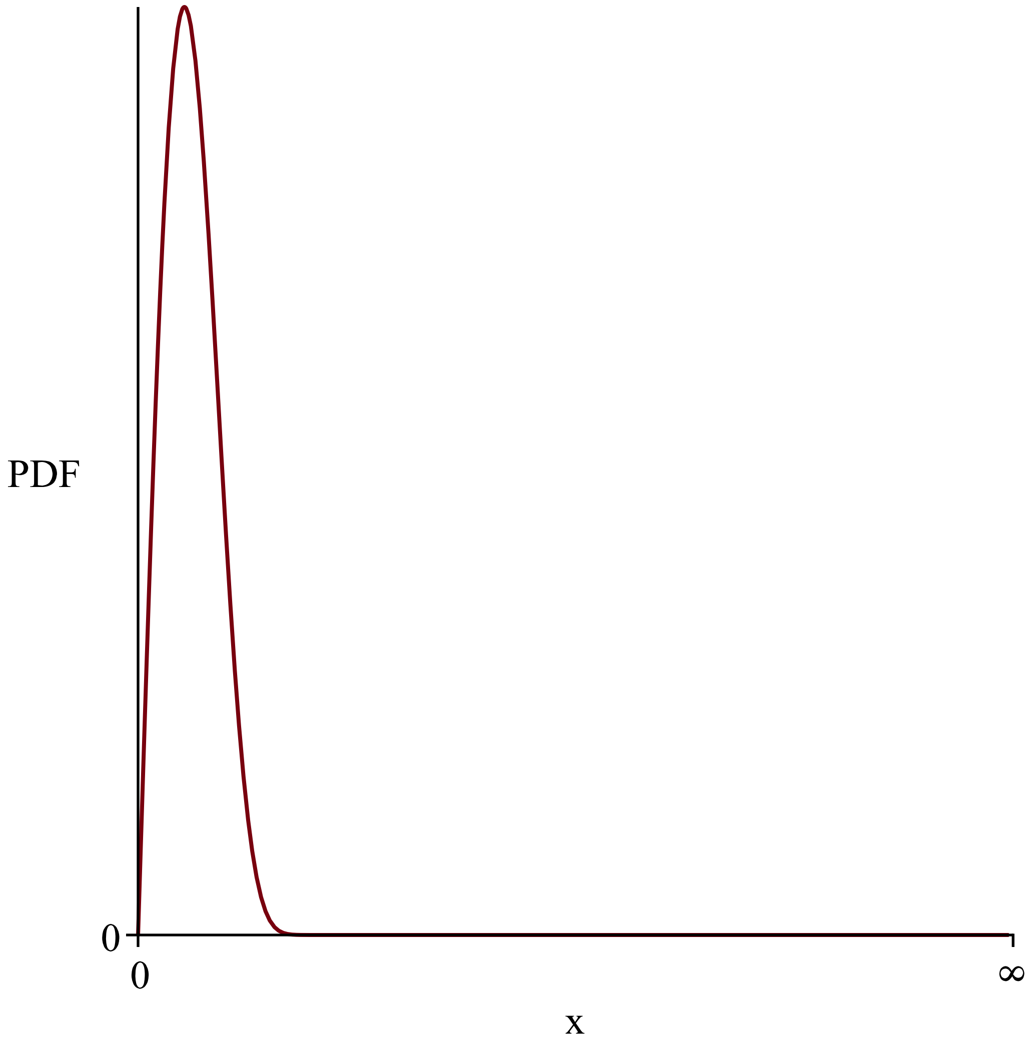
$$l := 0$$

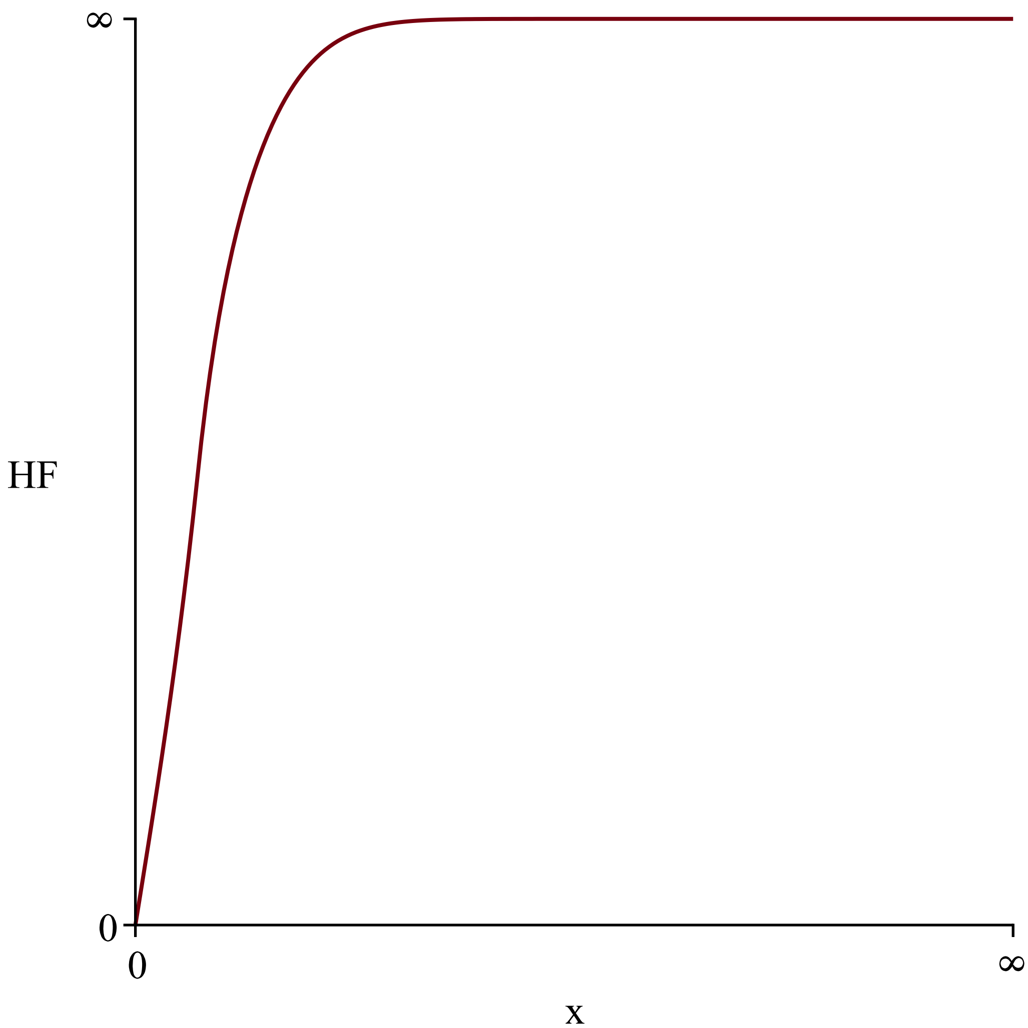
$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow 2\,y\sim\,\mathrm{e}^{-\frac{y\sim^2 \ln(2) + 2^{y\sim^2+1} - 2}{\ln(2)}}\left(1 + 2^{y\sim^2+1}\right)\right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, 2\,x\,\mathrm{e}^{-\frac{x^2 \ln(2) + 2^{x^2+1} - 2}{\ln(2)}}\left(1 + 2^{x^2+1}\right)$$

$$\text{"h(x)"}, 2\,x\left(1 + 2^{x^2+1}\right)$$


PDF
0
0
∞
x




```
2\,x{{\rm e}^{-{\frac {{x}^{2}\ln  \left( 2 \right) +{2}^{{x}^
{2}+1}-2
}{\ln  \left( 2 \right) }}}} \left( 1+{2}^{{x}^{2}+1} \right)
```

"i is", 3,

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

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

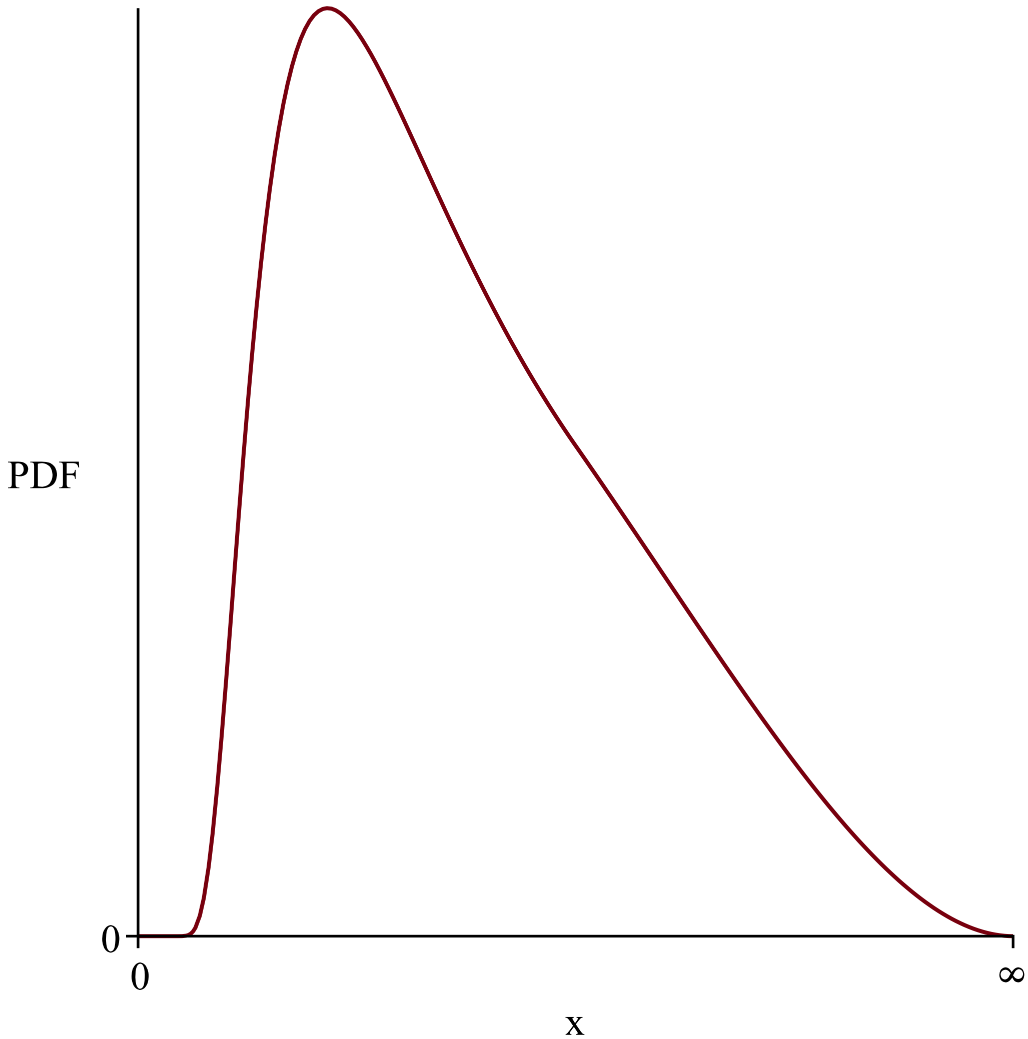
$$l := 0$$

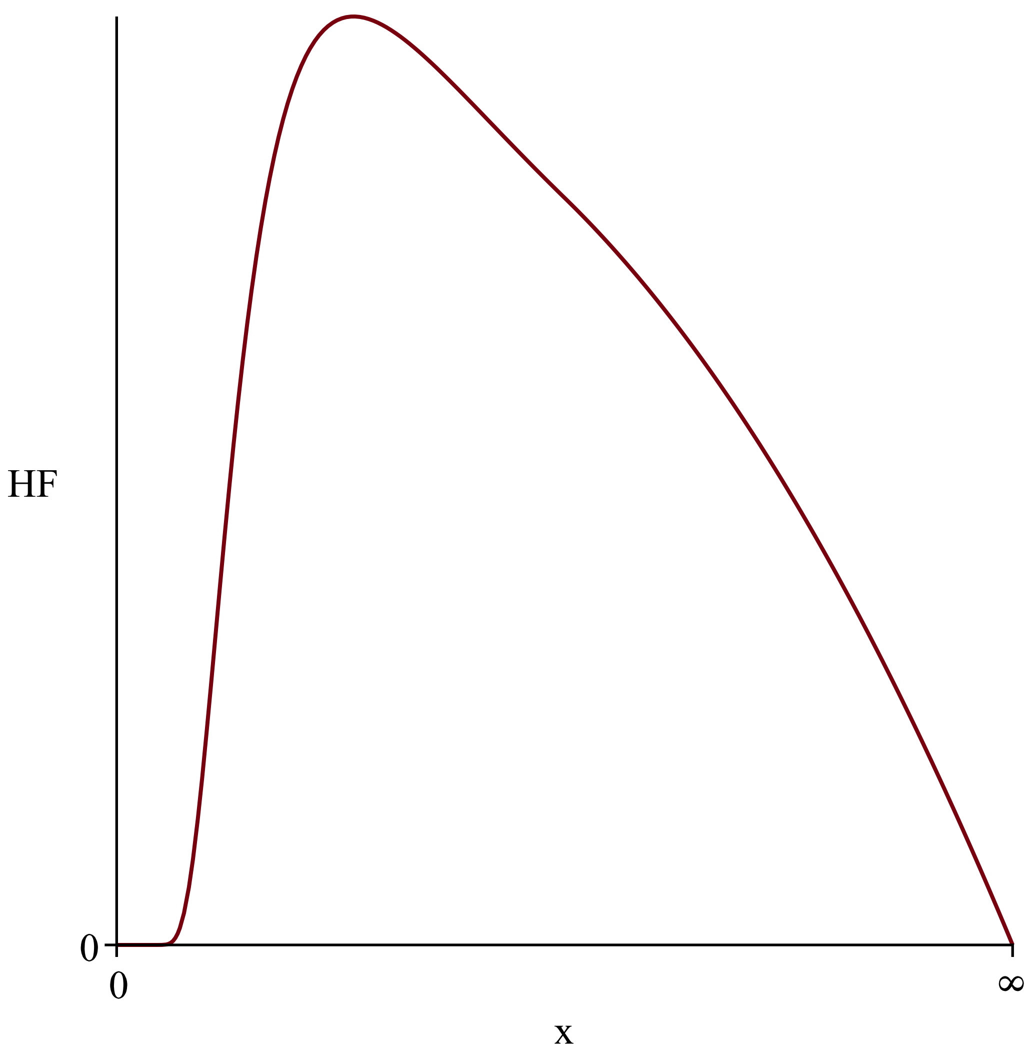
$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow \frac{e^{-\frac{y\sim 2^{\frac{y\sim+1}{y\sim}} + \ln(2) - 2\,y\sim}{y\sim \ln(2)}} \left(1 + 2^{\frac{y\sim+1}{y\sim}}\right)}{y\sim^2}\right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, \frac{e^{-\frac{x\,2^{\frac{x+1}{x}} + \ln(2) - 2\,x}{x \ln(2)}} \left(1 + 2^{\frac{x+1}{x}}\right)}{x^2}$$

$$"h(x)", -\frac{e^{\frac{2}{\ln(2)}}\left(1+2^{\frac{x+1}{x}}\right)}{x^2\left(-e^{\frac{x\,2^{\frac{x+1}{x}}+\ln(2)}{x\ln(2)}}+e^{\frac{2}{\ln(2)}}\right)}$$






```
{\frac {1}{{x}^{2}}{{\rm e}^{-{\frac {1}{x\ln  \left( 2 \right) 
}
 \left( x{2}^{{\frac {x+1}{x}}}+\ln  \left( 2 \right) -2\,x
\right) }}
} \left( 1+{2}^{{\frac {x+1}{x}}} \right) }
```

"i is", 4,

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

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

$$l := 0$$

$$u := \infty$$

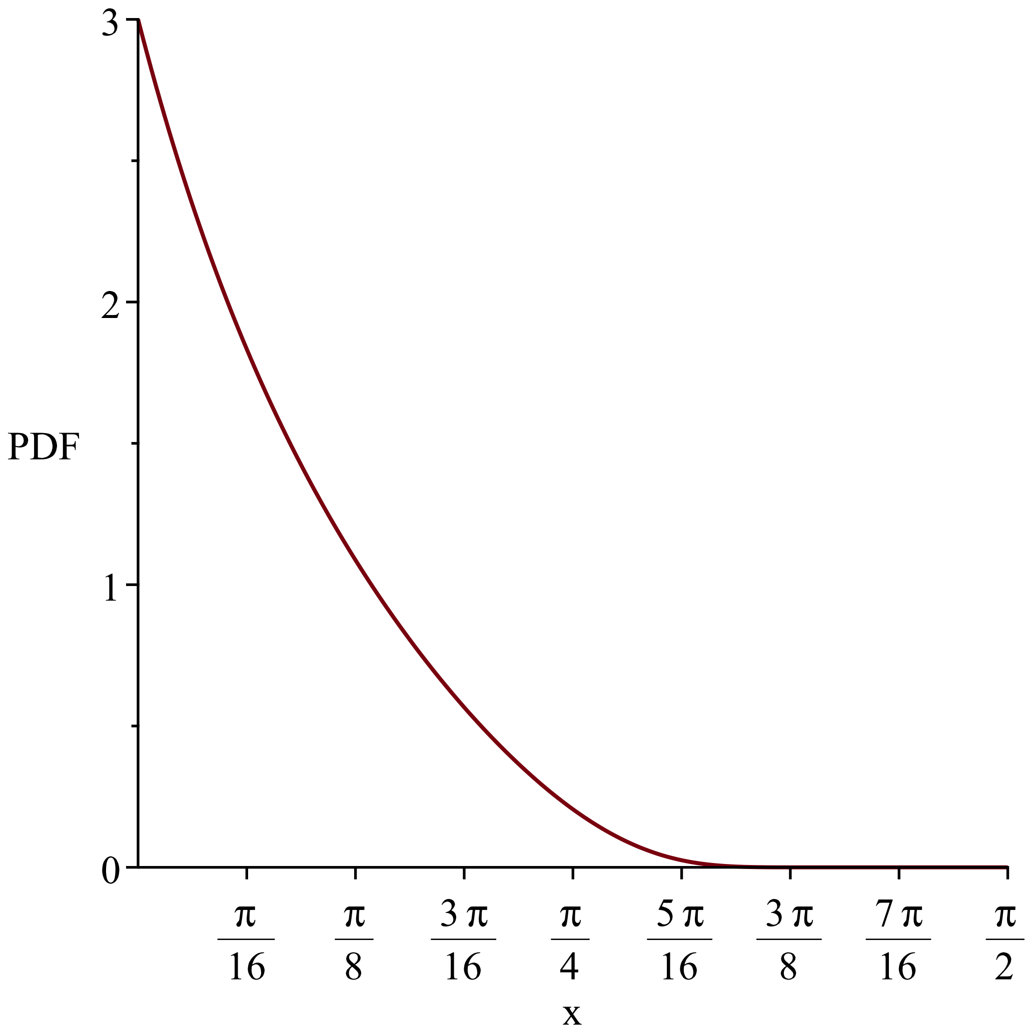
$$Temp := \left[ \left[ \left[ y\sim \rightarrow \left(1 + \tan(y\sim)^2\right) \mathrm{e}^{-\frac{\tan(y\sim)\ln(2) + 2^{1+\tan(y\sim)} - 2}{\ln(2)}} \left(1 + 2^{1+\tan(y\sim)}\right) \right], \left[0, \frac{1}{2}\pi\right], \right.\right.$$
$$\left.\left. ["Continuous", "PDF"] \right]\right]$$

$$"f(x)", \left(1 + \tan(x)^2\right) \mathrm{e}^{-\frac{\tan(x)\ln(2) + 2^{1+\tan(x)} - 2}{\ln(2)}} \left(1 + 2^{1+\tan(x)}\right)$$

$$"h(x)", \begin{cases} \left(1+\tan(x)^2\right)\left(1+2^{1+\tan(x)}\right) & x \le \frac{1}{2}\pi \\ 0 & \frac{1}{2}\pi < x \end{cases}$$

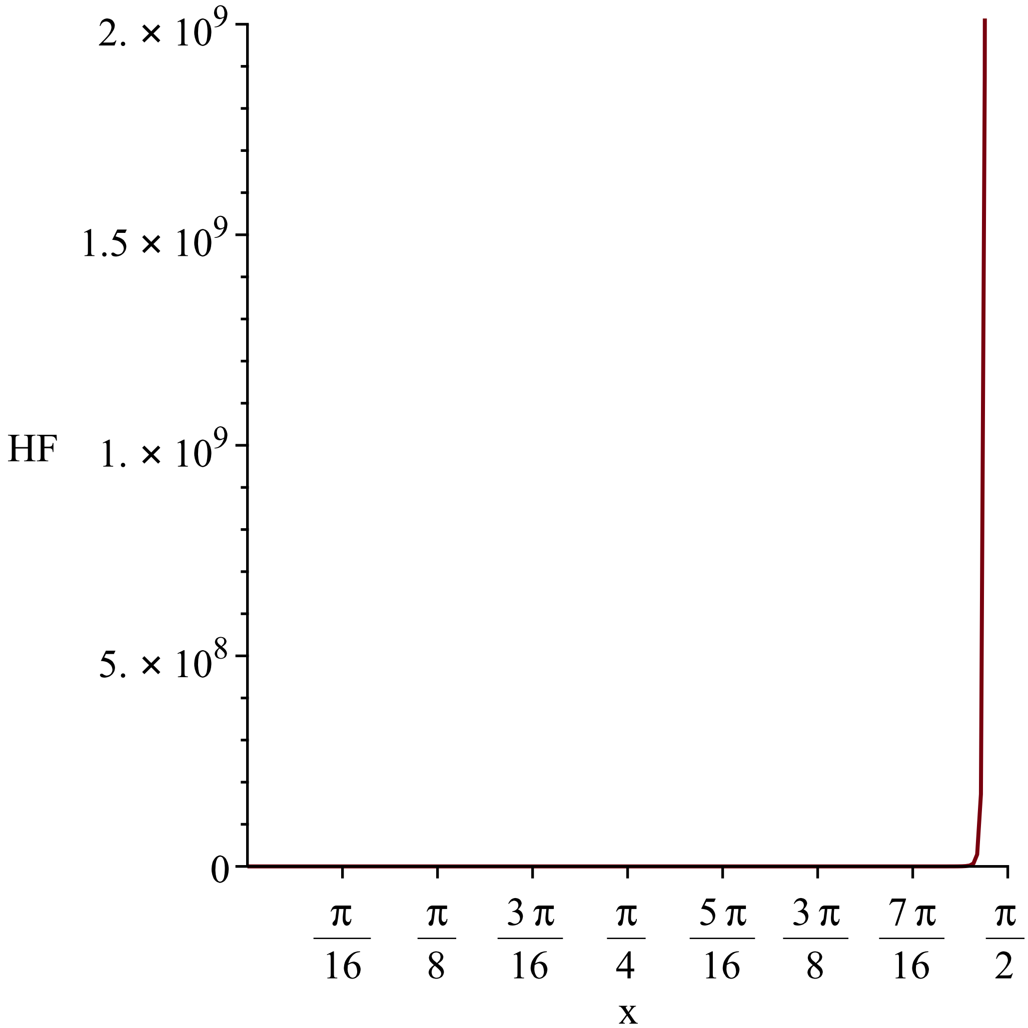
*WARNING(PlotDist): High value provided by user, $\infty$ is greater than maximum support value of the random variable, $\frac{1}{2}\pi$*

*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user, $\infty$ is greater than maximum support value of the random variable, $\frac{1}{2}\pi$*

*Resetting high to RV's maximum support value*




```
\left( 1+ \left( \tan \left( x \right)  \right) ^{2} \right) {
{\rm e}
^{-{\frac {\tan \left( x \right) \ln  \left( 2 \right) +{2}^{1+
\tan
 \left( x \right) }-2}{\ln  \left( 2 \right) }}}} \left( 1+{2}^
{1+\tan
 \left( x \right) } \right)
```

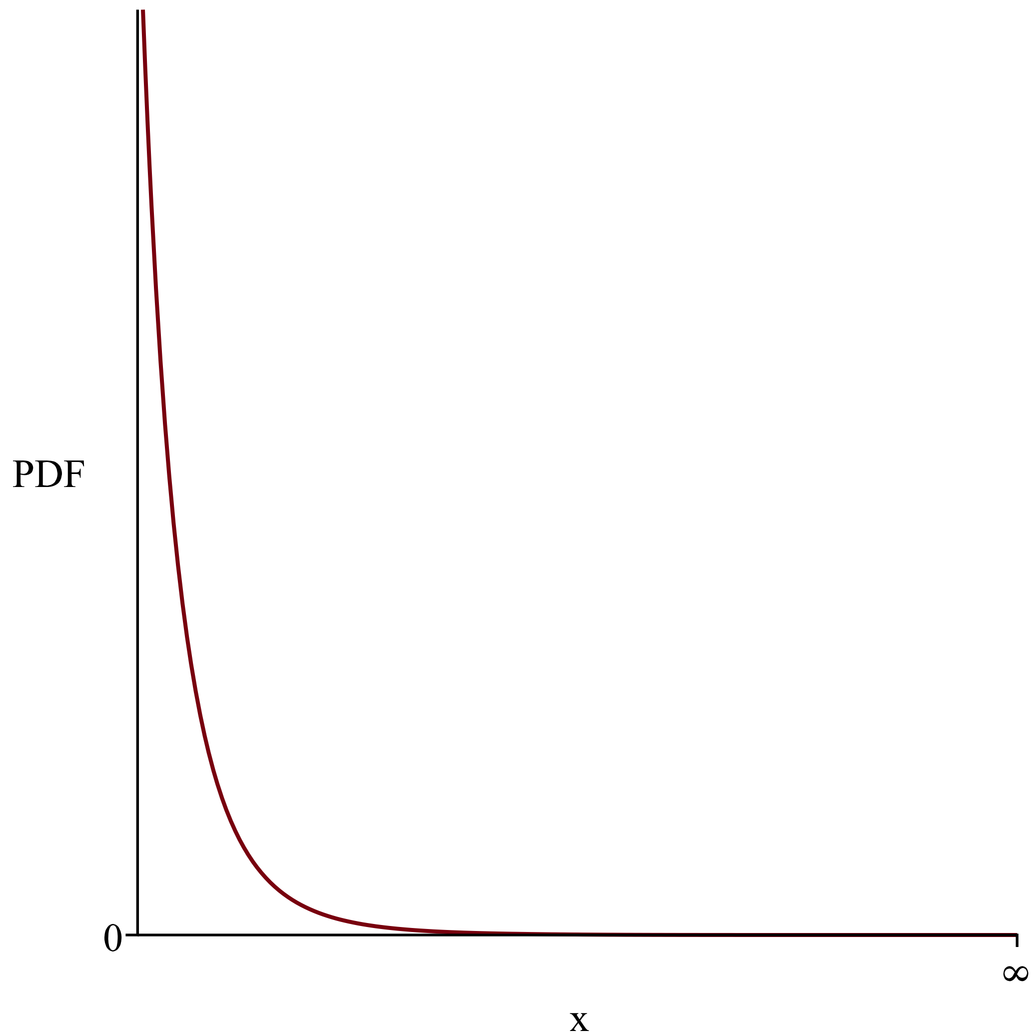
"i is", 5,

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

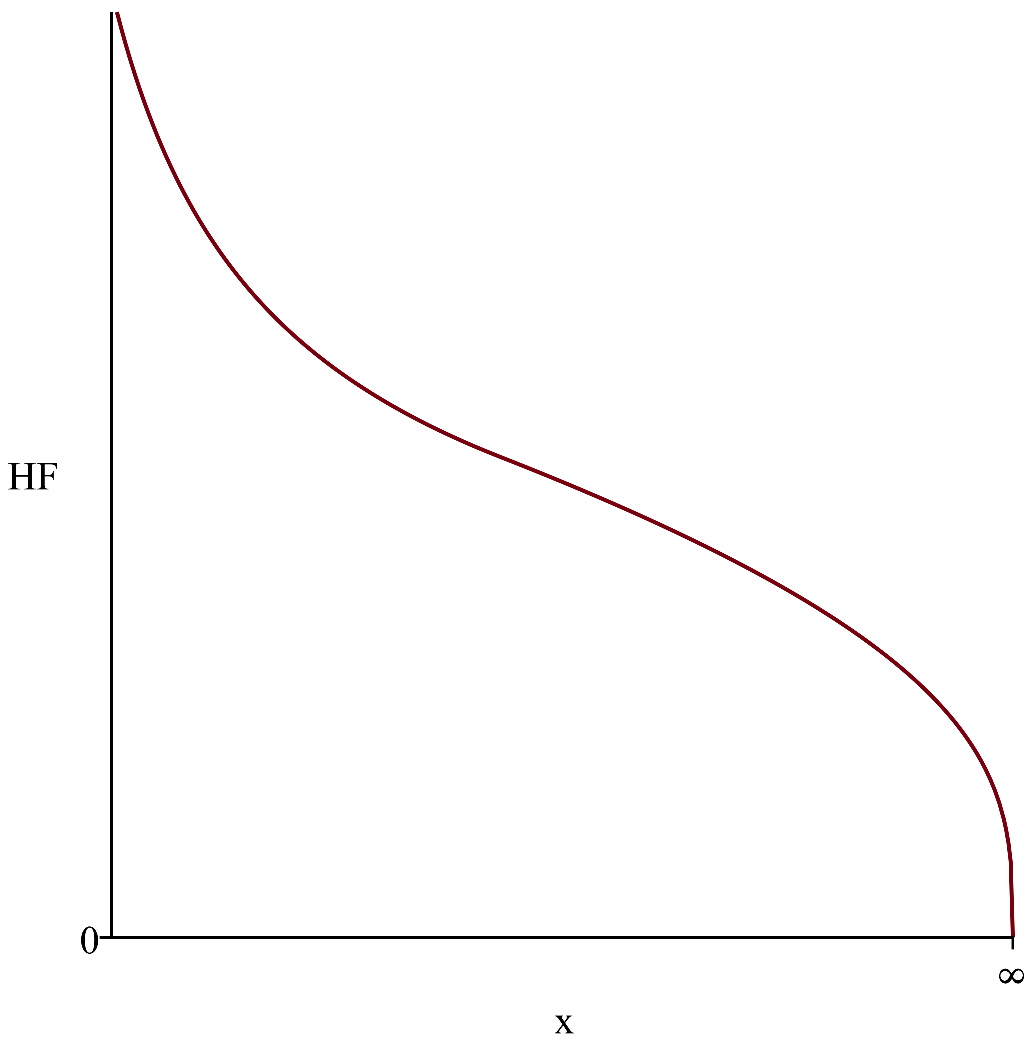
$$g := t \to e^{t}$$
$$l := 0$$
$$u := \infty$$
$$Temp := \left[\left[y\sim \to \frac{e^{-\frac{2\left(y\sim^{\ln(2)}-1\right)}{\ln(2)}}\left(1+2\,y\sim^{\ln(2)}\right)}{y\sim^{2}}\right], [1, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$
$$\text{"f(x)"}, \frac{e^{-\frac{2\left(x^{\ln(2)}-1\right)}{\ln(2)}}\left(1+2\,x^{\ln(2)}\right)}{x^{2}}$$

$$"h(x)", \frac{1 + 2\,x^{\ln(2)}}{x}$$

*WARNING(PlotDist): Low value provided by user,* 0
*is less than minimum support value of random variable*
1
*Resetting low to RV's minimum support value*




*WARNING(PlotDist): Low value provided by user,* 0
*is less than minimum support value of random variable*
1
*Resetting low to RV's minimum support value*




```
{\frac {1+2\,{x}^{\ln  \left( 2 \right) }}{{x}^{2}}{{\rm e}^
{-2\,{
\frac {{x}^{\ln  \left( 2 \right) }-1}{\ln  \left( 2 \right) }}}
}}
```

"i is", 6,
" ------------------------------------------------------------------------------------------------------------------"

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

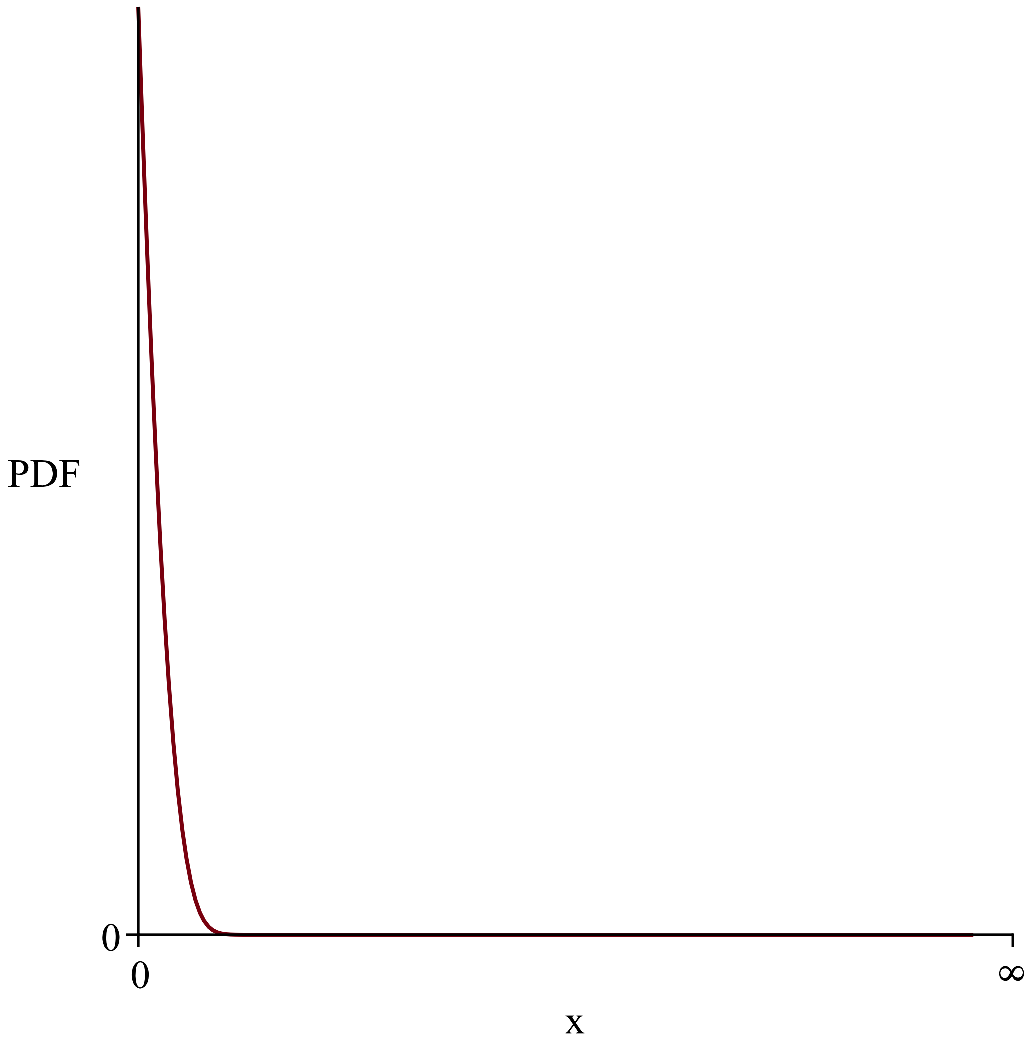
$$l := 0$$

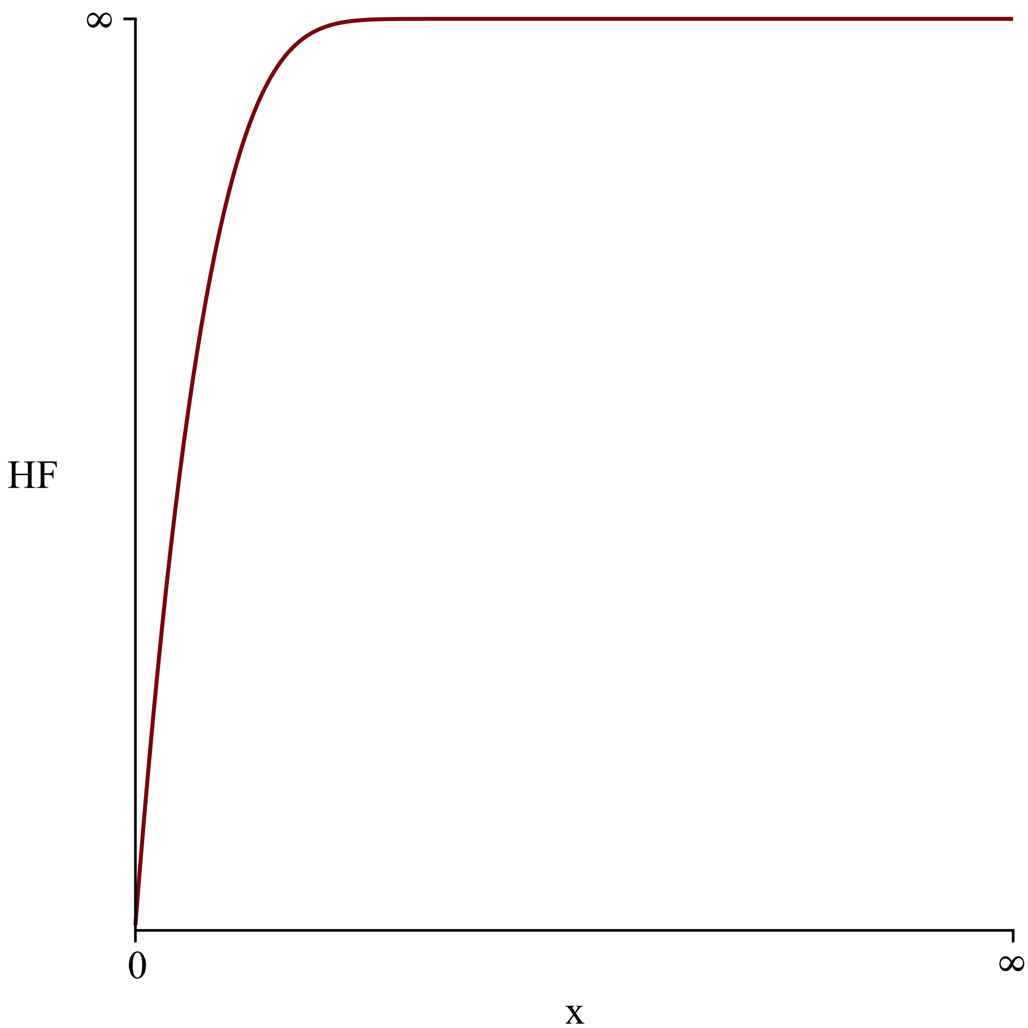
$$u := \infty$$

$$Temp := \left[ \left[ y\sim \rightarrow e^{-\frac{e^{y\sim}\ln(2) - y\sim\ln(2) + 2^{1+e^{y\sim}} - 2}{\ln(2)}} \left(1 + 2^{1+e^{y\sim}}\right) \right], [-\infty, \infty], [\text{"Continuous"}, \text{"PDF"}] \right]$$

$$\text{"f(x)"}, e^{-\frac{e^{x}\ln(2) - x\ln(2) + 2^{1+e^{x}} - 2}{\ln(2)}} \left(1 + 2^{1+e^{x}}\right)$$

$$\text{"h(x)"}, e^{x}\left(1 + 2^{1+e^{x}}\right)$$


PDF
0
0
∞
x




```
{{\rm e}^{-{\frac {{{\rm e}^{x}}\ln  \left( 2 \right) -x\ln
\left( 2
 \right) +{2}^{1+{{\rm e}^{x}}}-2}{\ln  \left( 2 \right) }}}}
\left( 1
+{2}^{1+{{\rm e}^{x}}} \right)
```

"i is", 7,
" -------------------------------------------------------------------------------------------------------
----------"

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

$$l := 0$$

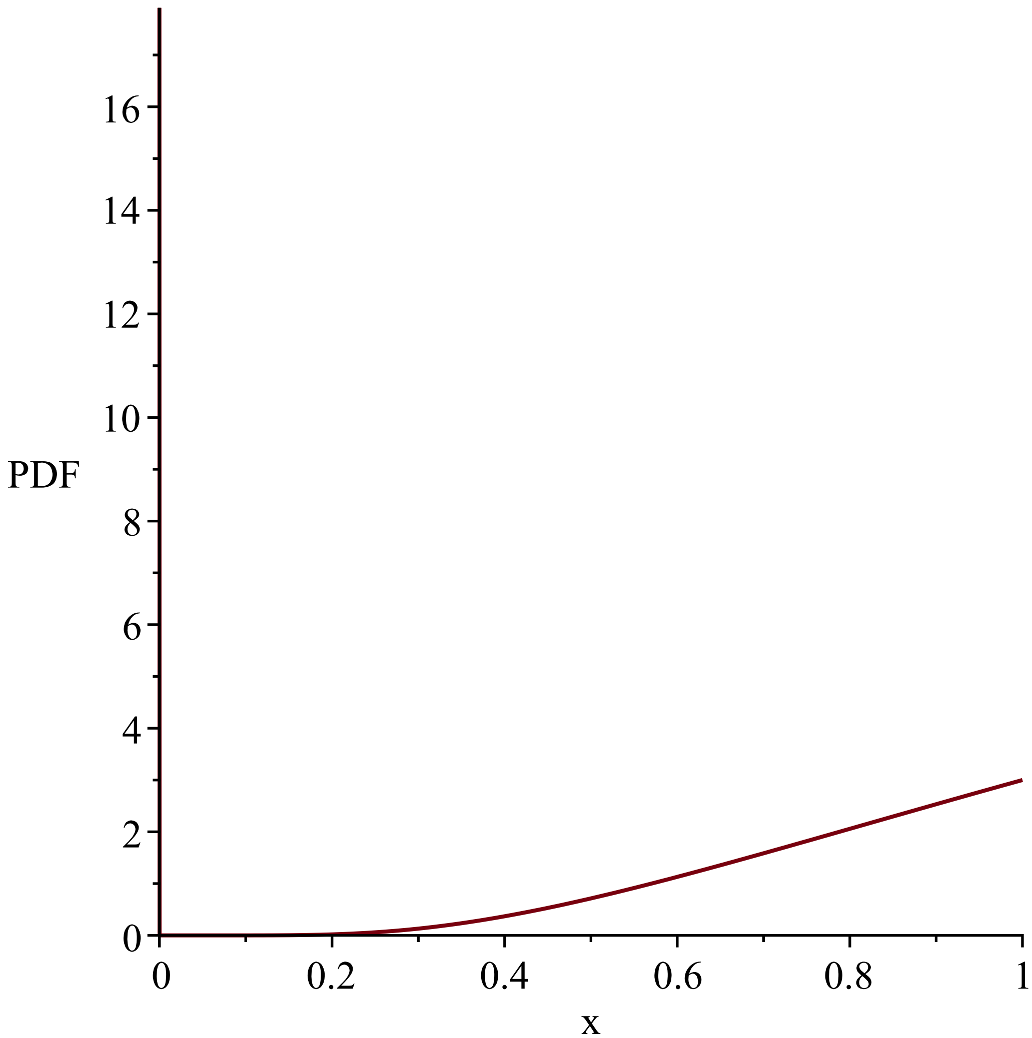
$$u := \infty$$

$$Temp := \left[\left[\left[y\sim \rightarrow e^{-\frac{2\left(y\sim^{-\ln(2)}-1\right)}{\ln(2)}}\left(1+2\,y\sim^{-\ln(2)}\right)\right], [0, 1], [\text{"Continuous"}, \text{"PDF"}]\right]$$

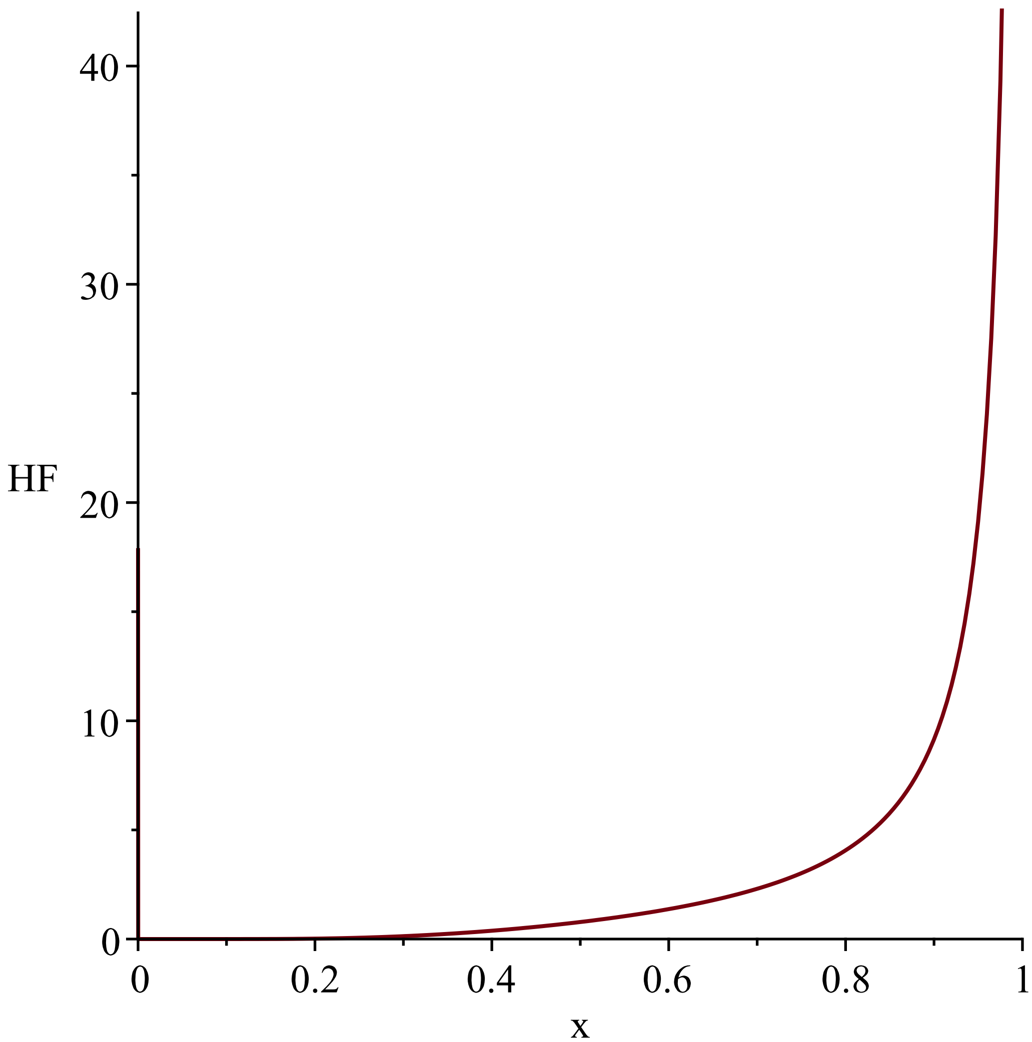
$$\text{"f(x)"}, e^{-\frac{2\left(x^{-\ln(2)}-1\right)}{\ln(2)}}\left(1+2\,x^{-\ln(2)}\right)$$

$$"h(x)", \frac{e^{\frac{2}{\ln(2)}} \left(1 + 2\, x^{-\ln(2)}\right)}{-x\, e^{\frac{2}{\ln(2)}} + e^{\frac{2\, x^{-\ln(2)}}{\ln(2)}}}$$

*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




```
{{\rm e}^{-2\,{\frac {{x}^{-\ln  \left( 2 \right) }-1}{\ln 
\left( 2
 \right) }}}} \left( 1+2\,{x}^{-\ln  \left( 2 \right) } \right)
```

"i is", 8,

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

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

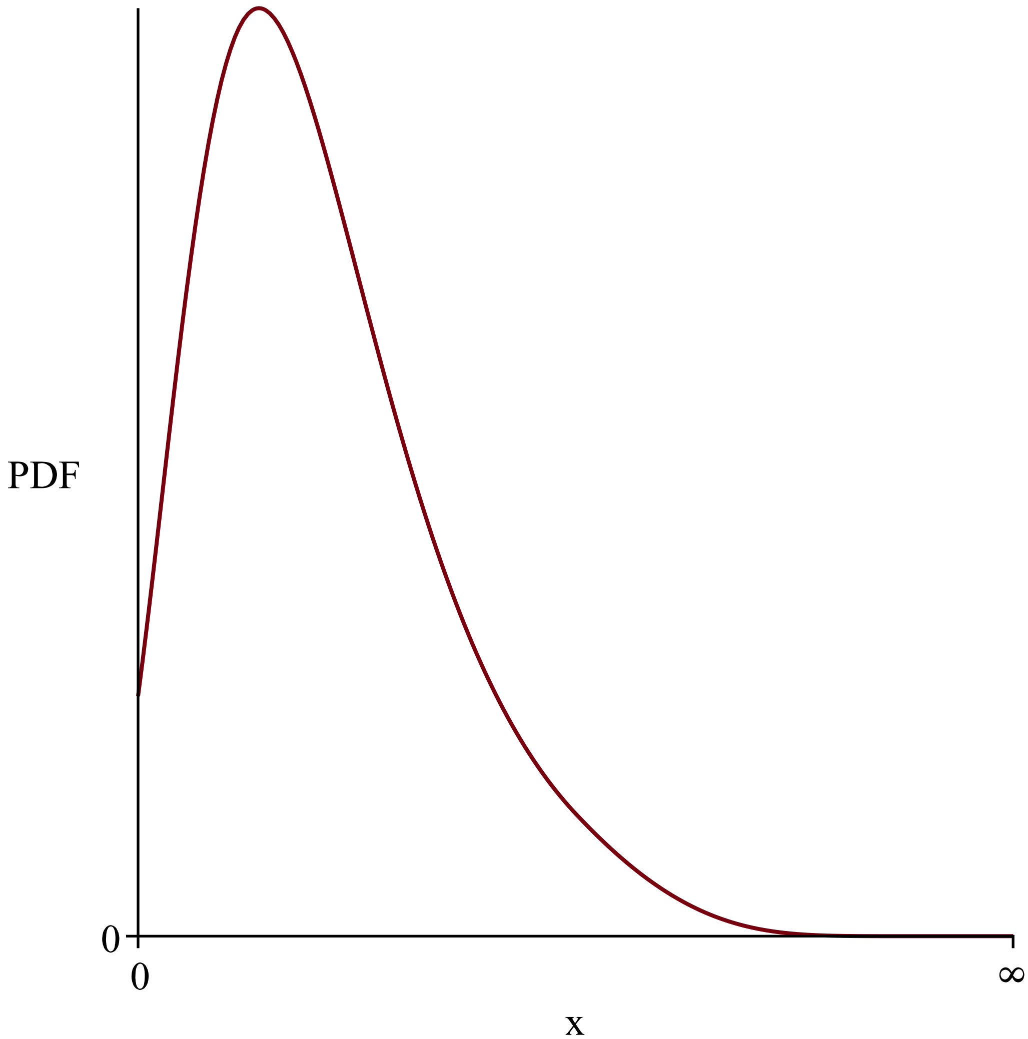
$$l := 0$$

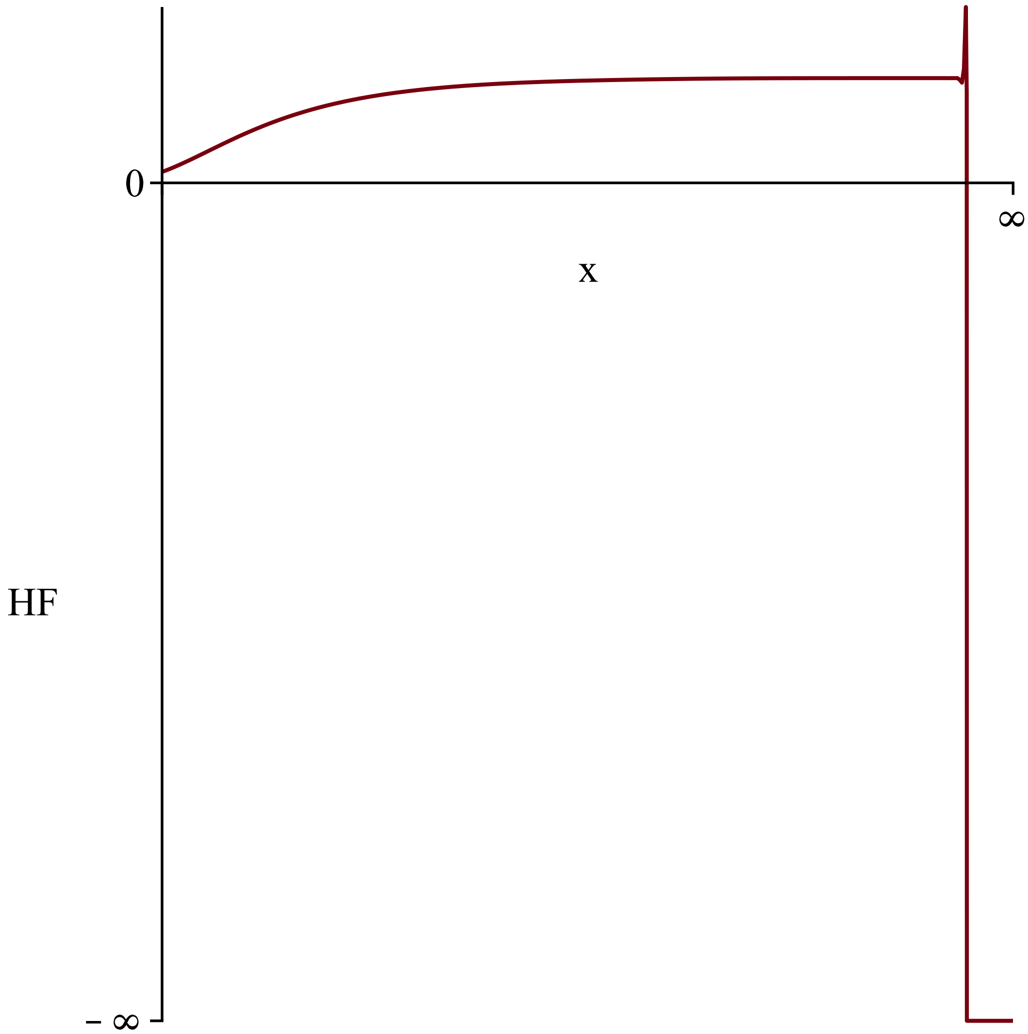
$$u := \infty$$

$$Temp := \left[\left[\left[y\sim \to \mathrm{e}^{-\frac{\mathrm{e}^{-y\sim}\ln(2) + y\sim\ln(2) + 2^{1+\mathrm{e}^{-y\sim}} - 2}{\ln(2)}}\left(1 + 2^{1+\mathrm{e}^{-y\sim}}\right)\right], [-\infty, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]\right]$$

$$\text{"f(x)"}, \mathrm{e}^{-\frac{\mathrm{e}^{-x}\ln(2) + x\ln(2) + 2^{1+\mathrm{e}^{-x}} - 2}{\ln(2)}}\left(1 + 2^{1+\mathrm{e}^{-x}}\right)$$

$$\text{"h(x)"},\ -\frac{\mathrm{e}^{-\frac{x\ln(2)-2}{\ln(2)}}\left(1+2^{1+\mathrm{e}^{-x}}\right)}{-\mathrm{e}^{\frac{\mathrm{e}^{-x}\ln(2)+2^{1+\mathrm{e}^{-x}}}{\ln(2)}}+\mathrm{e}^{\frac{2}{\ln(2)}}}$$






```
{{\rm e}^{-{\frac {{{\rm e}^{-x}}\ln  \left( 2 \right) +x\ln
\left( 2
 \right) +{2}^{1+{{\rm e}^{-x}}}-2}{\ln  \left( 2 \right) }}}}
\left(
1+{2}^{1+{{\rm e}^{-x}}} \right)
```

"i is", 9,
" -------------------------------------------------------------------------------------------------------------
----------"

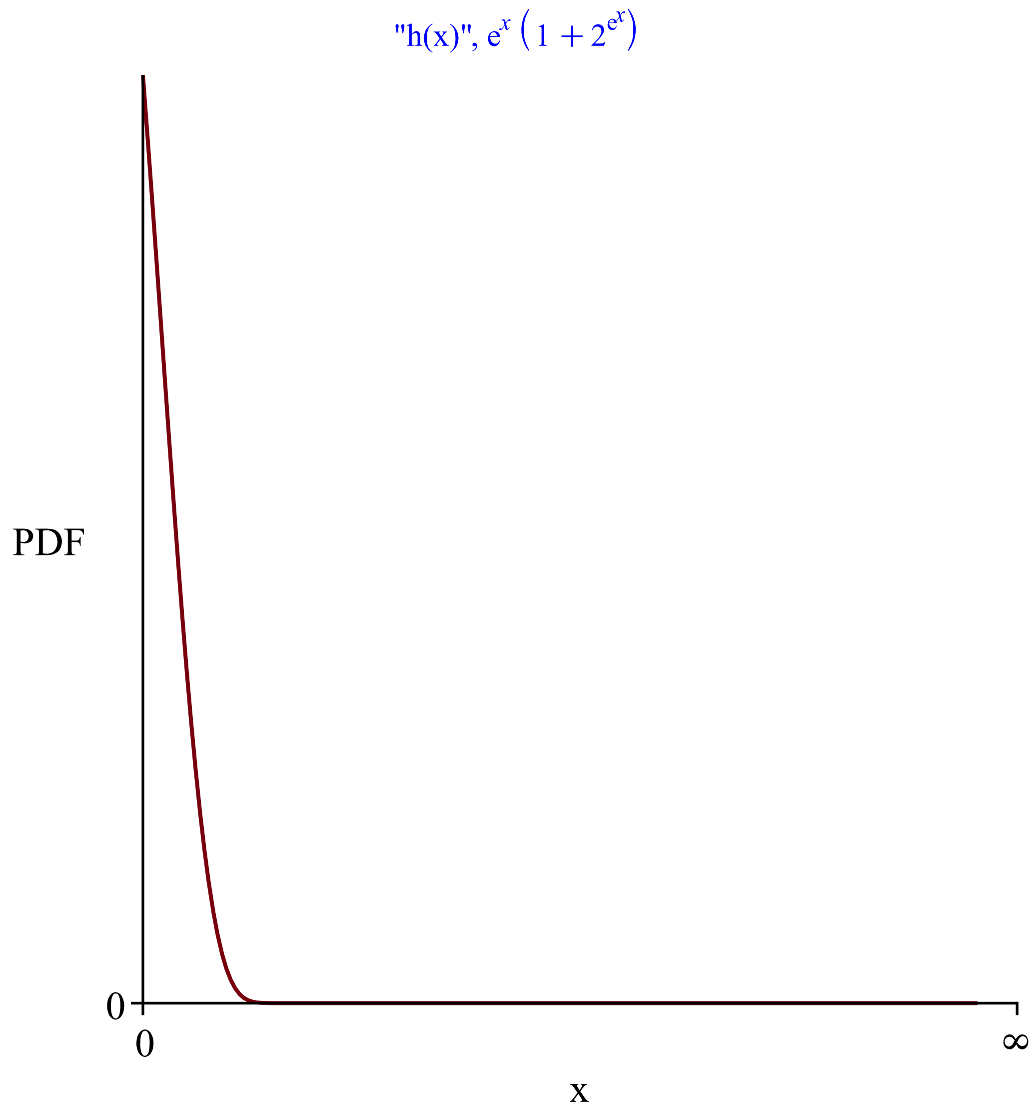
$$g := t \rightarrow \ln(t+1)$$

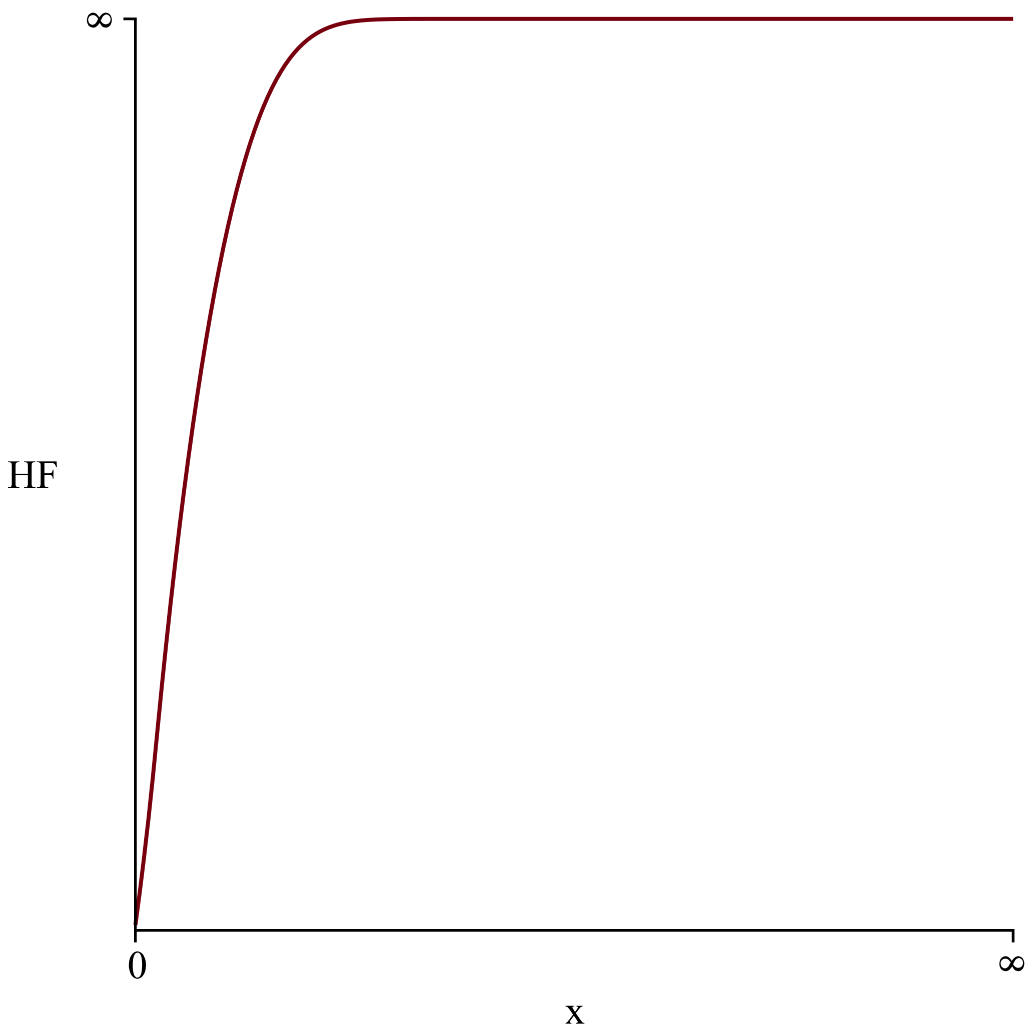
$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow e^{-\frac{e^{y\sim}\ln(2) - y\sim\ln(2) - \ln(2) + 2^{e^{y\sim}} - 2}{\ln(2)}}\left(1+2^{e^{y\sim}}\right)\right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, e^{-\frac{e^{x}\ln(2) - x\ln(2) - \ln(2) + 2^{e^{x}} - 2}{\ln(2)}}\left(1+2^{e^{x}}\right)$$


"h(x)", $e^{x}\left(1+2^{e^{x}}\right)$
PDF
0
0
∞
x




```
{{\rm e}^{-{\frac {{{\rm e}^{x}}\ln  \left( 2 \right) -x\ln
\left( 2
 \right) -\ln  \left( 2 \right) +{2}^{{{\rm e}^{x}}}-2}{\ln
\left( 2
 \right) }}}} \left( 1+{2}^{{{\rm e}^{x}}} \right)
```

"i is", 10,
" -------------------------------------------------------------------------------------------------------------
----------"

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

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y{\sim} \rightarrow \frac{\mathrm{e}^{-\frac{\mathrm{e}^{\frac{1}{y\sim}} \ln(2)\, y{\sim} + 2^{-1+\mathrm{e}^{\frac{1}{y\sim}}}\, y{\sim} - 2\, y{\sim} \ln(2) - \ln(2) - 2\, y{\sim}}{\ln(2)\, y{\sim}}} \left(1 + 2^{-1+\mathrm{e}^{\frac{1}{y\sim}}}\right)}{y{\sim}^2}\right], \left[0,\right.\right.$$

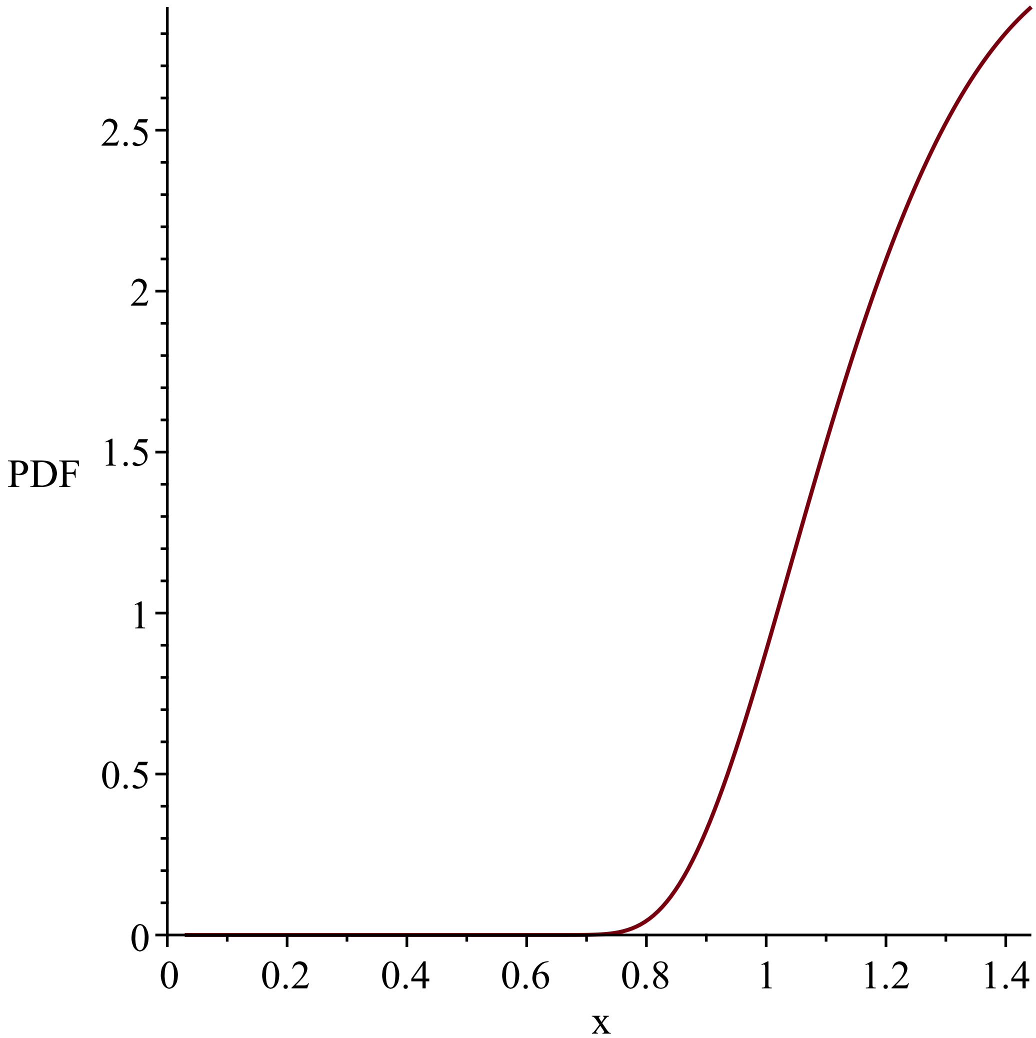
$$\frac{1}{\ln(2)}\Bigg], [\text{"Continuous"}, \text{"PDF"}]\Bigg]$$

$$\text{"f(x)"}, \frac{e^{-\frac{e^{\frac{1}{x}}\ln(2)\,x + 2^{-1+e^{\frac{1}{x}}}x - 2x\ln(2) - \ln(2) - 2x}{\ln(2)\,x}}\left(1 + 2^{-1+e^{\frac{1}{x}}}\right)}{x^2}$$

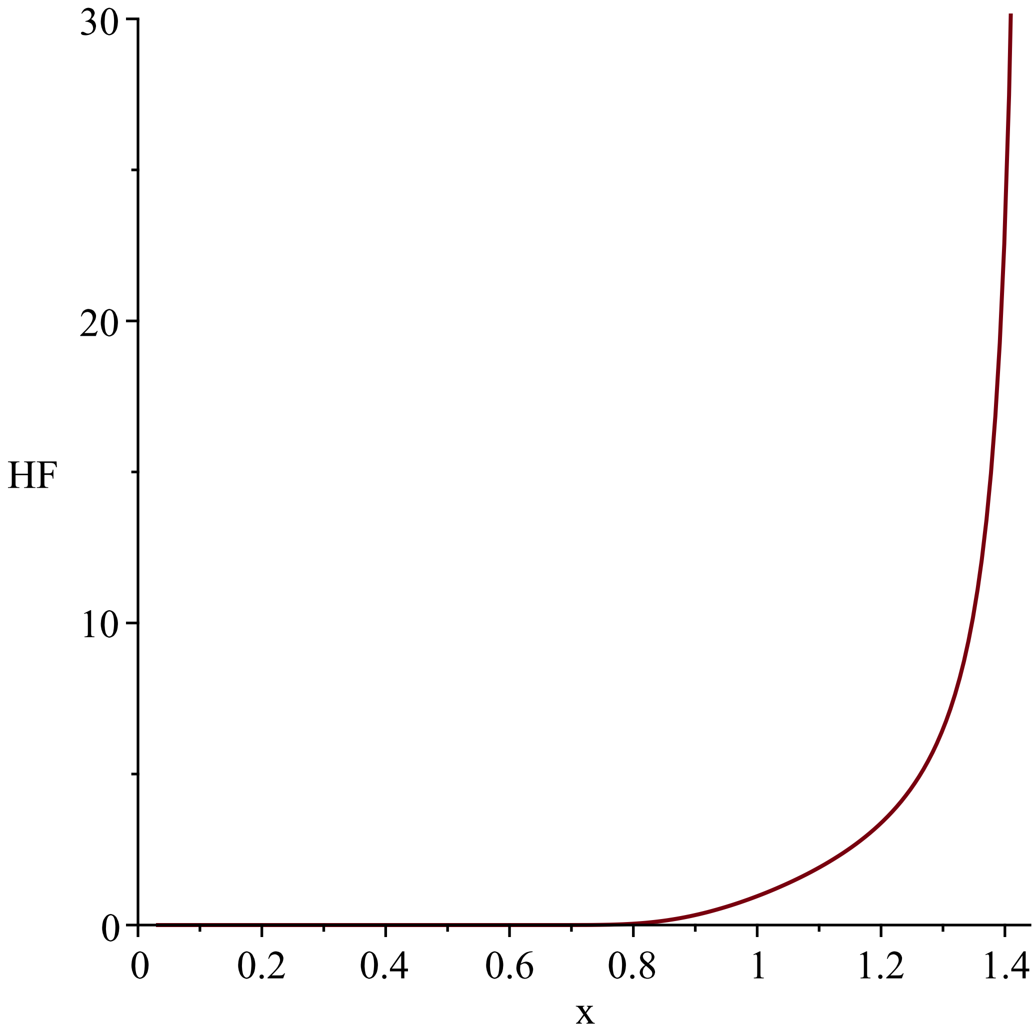
$$\text{"h(x)"}, \frac{e^{\frac{2x\ln(2) - 2^{-1+e^{\frac{1}{x}}}x + \ln(2) + 2x}{x\ln(2)}}\left(1 + 2^{-1+e^{\frac{1}{x}}}\right)}{x^2\left(-e^{\frac{2\ln(2) - 2^{-1+e^{\frac{1}{x}}} + 2}{\ln(2)}} + e^{e^{\frac{1}{x}}}\right)}$$

*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\frac{1}{\ln(2)}$

*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user, ∞ is greater than maximum support value of the random variable,* $\frac{1}{\ln(2)}$
*Resetting high to RV's maximum support value*




```
{\frac {1+{2}^{-1+{{\rm e}^{{x}^{-1}}}}}{{x}^{2}}{{\rm e}^{-
{\frac {{
{\rm e}^{{x}^{-1}}}\ln  \left( 2 \right) x+{2}^{-1+{{\rm e}^{{x}
^{-1}}
}}x-2\,x\ln  \left( 2 \right) -\ln  \left( 2 \right) -2\,x}{x\ln

 \left( 2 \right) }}}}}
```

"i is", 11,
" ------------------------------------------------------------------------------------------------------------
----------"

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

$$l := 0$$

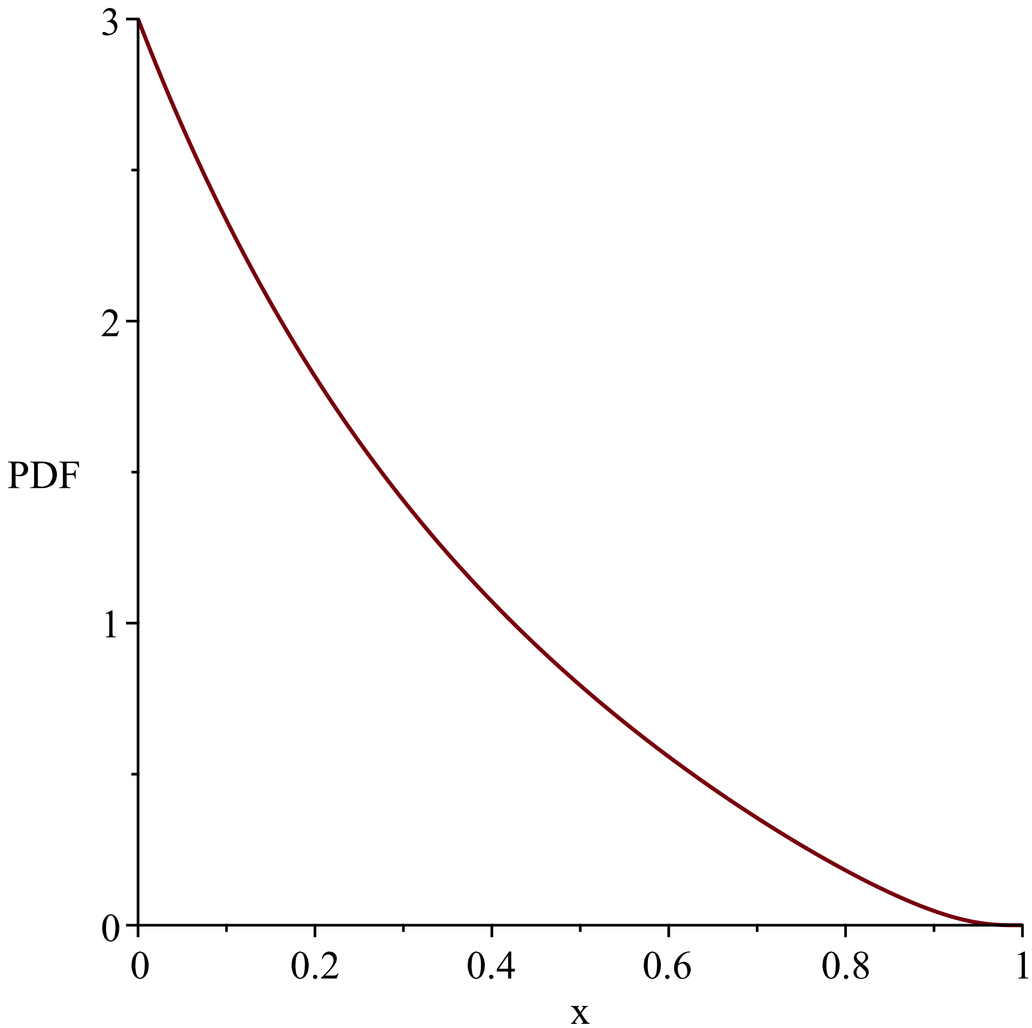
$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow \frac{e^{-\frac{2^{1+\operatorname{arctanh}(y\sim)}-2}{\ln(2)}}\left(1+2^{1+\operatorname{arctanh}(y\sim)}\right)}{\sqrt{-y\sim^2+1}\,(y\sim+1)}\right], [0, 1], ["Continuous", "PDF"]\right]$$

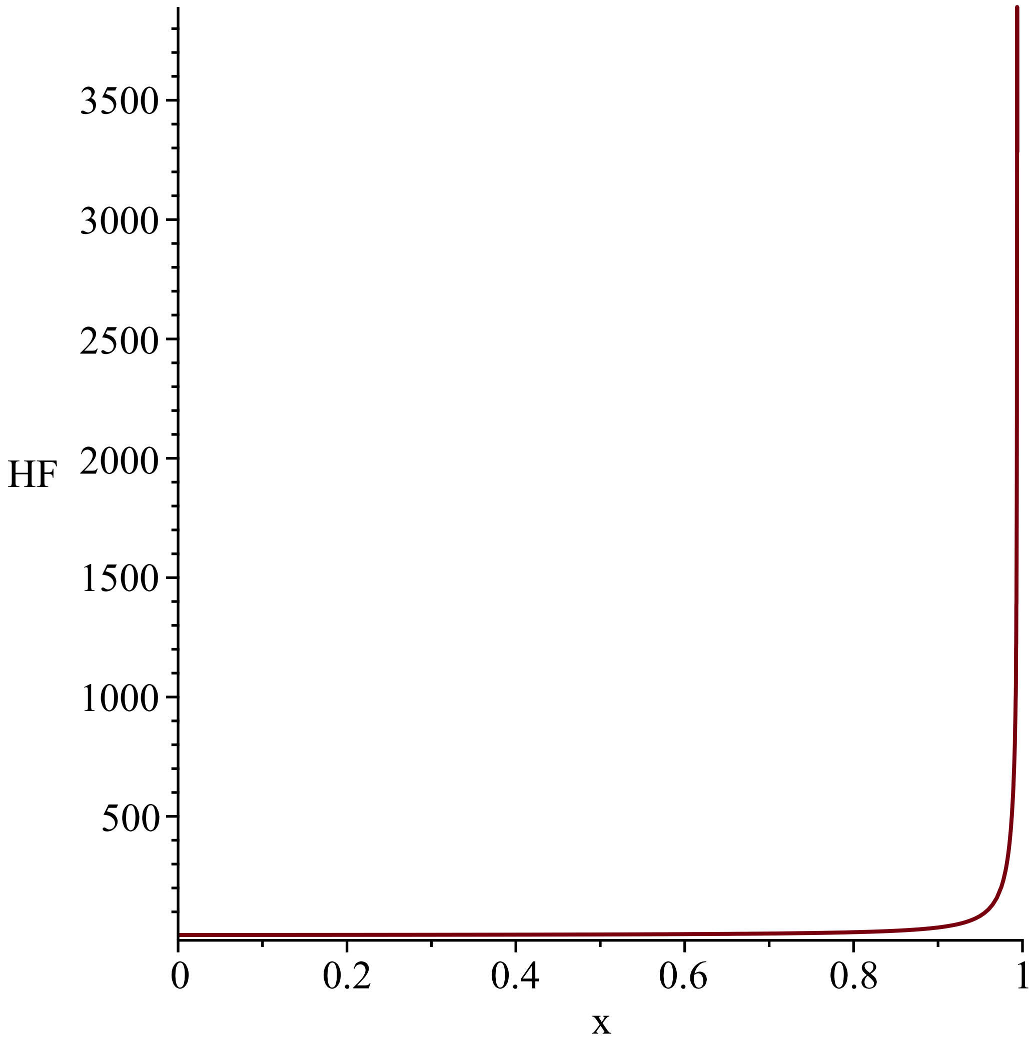
$$\text{"f(x)"},\ \frac{\mathrm{e}^{-\frac{2^{1+\operatorname{arctanh}(x)}-2}{\ln(2)}}\left(1+2^{1+\operatorname{arctanh}(x)}\right)}{\sqrt{-x^2+1}\,(x+1)}$$

$$\text{"h(x)"},\ -\frac{\mathrm{e}^{-\frac{2^{1+\operatorname{arctanh}(x)}-2}{\ln(2)}}\left(1+2^{1+\operatorname{arctanh}(x)}\right)}{\sqrt{-x^2+1}\,(x+1)\left(-1+\mathrm{e}^{\frac{2}{\ln(2)}}\left(\int_0^x \frac{\left(1+2^{1+\operatorname{arctanh}(t)}\right)\mathrm{e}^{-\frac{2^{1+\operatorname{arctanh}(t)}}{\ln(2)}}}{\sqrt{-t^2+1}\,(t+1)}\,\mathrm{d}t\right)\right)}$$

*WARNING(PlotDist): High value provided by user, ∞ is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user, ∞ is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




```
{\frac {1+{2}^{1+{\rm arctanh} \left(x\right)}}{\sqrt {-{x}^{2}
+1}
 \left( x+1 \right) }{{\rm e}^{-{\frac {{2}^{1+{\rm arctanh}
\left(x
\right)}-2}{\ln  \left( 2 \right) }}}}}
```

"i is", 12,

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

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

$$l := 0$$

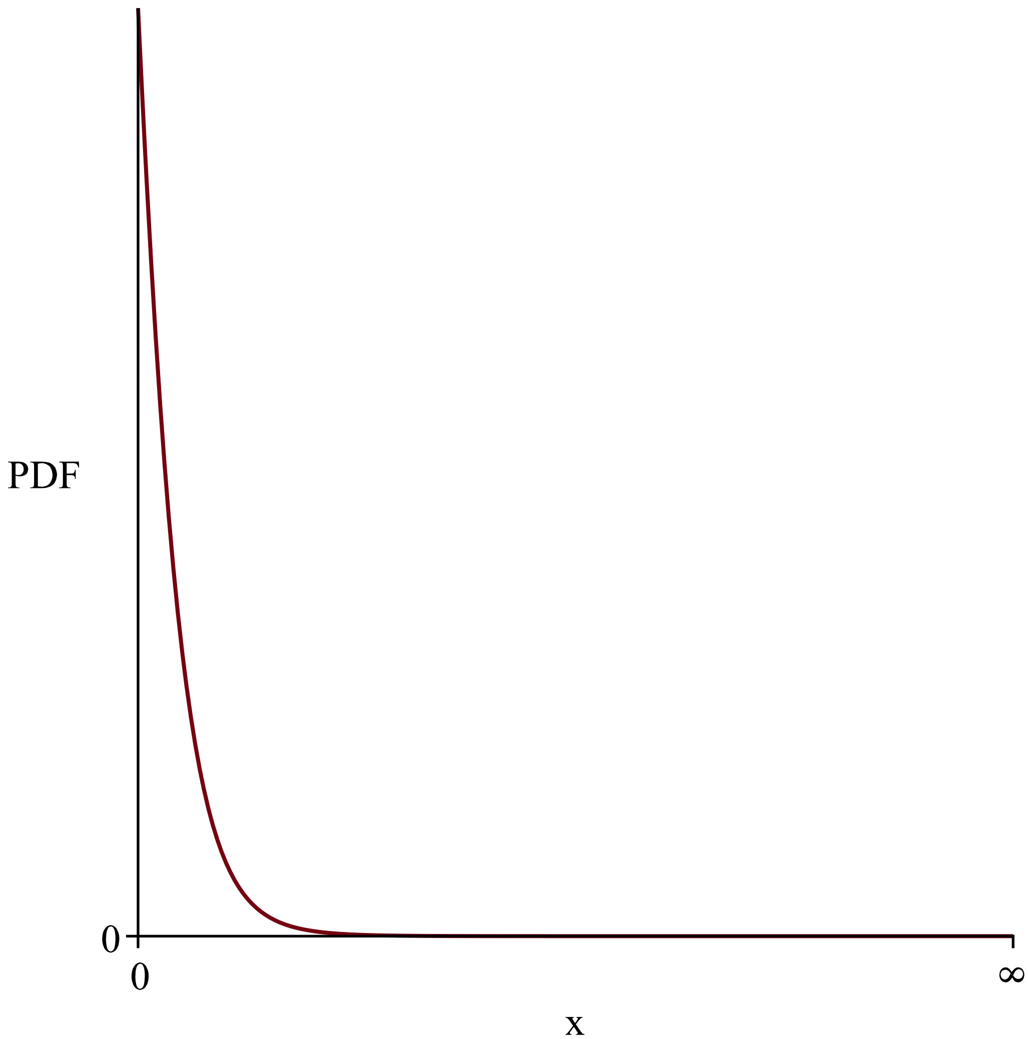
$$u := \infty$$

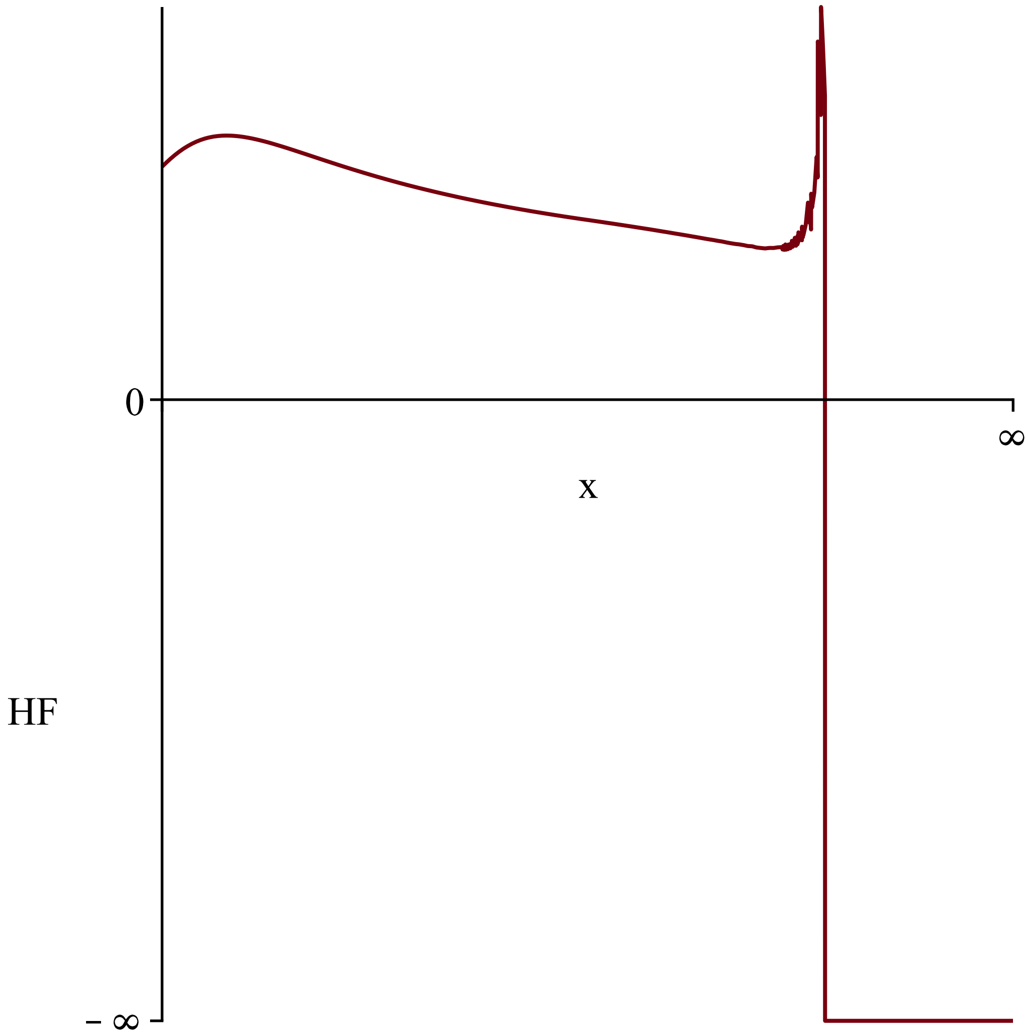
$$Temp := \left[ \left[ y\sim \rightarrow \frac{\mathrm{e}^{-\frac{2^{1+\operatorname{arcsinh}(y\sim)}-2}{\ln(2)}} \left(1+2^{1+\operatorname{arcsinh}(y\sim)}\right)}{\sqrt{y\sim^2+1}\,\left(y\sim+\sqrt{y\sim^2+1}\right)} \right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}] \right]$$

$$\text{"f(x)"}, \frac{\mathrm{e}^{-\frac{2^{1+\operatorname{arcsinh}(x)}-2}{\ln(2)}} \left(1+2^{1+\operatorname{arcsinh}(x)}\right)}{\sqrt{x^2+1}\,\left(x+\sqrt{x^2+1}\right)}$$

"h(x)",

$$-\frac{e^{-\frac{2^{1+\operatorname{arcsinh}(x)}-2}{\ln(2)}}\left(1+2^{1+\operatorname{arcsinh}(x)}\right)}{\sqrt{x^2+1}\left(x+\sqrt{x^2+1}\right)\left(-1+e^{\frac{2}{\ln(2)}}\left(\int_0^x \frac{\left(1+2^{1+\operatorname{arcsinh}(t)}\right)e^{-\frac{2^{1+\operatorname{arcsinh}(t)}}{\ln(2)}}}{\sqrt{t^2+1}\left(t+\sqrt{t^2+1}\right)}\,dt\right)\right)}$$






```
{\frac {1+{2}^{1+{\rm arcsinh} \left(x\right)}}{\sqrt {{x}^{2}
+1}
 \left( x+\sqrt {{x}^{2}+1} \right) }{{\rm e}^{-{\frac {{2}^{1+
{\rm arcsinh} \left(x\right)}-2}{\ln  \left( 2 \right) }}}}}
```

"i is", 13,

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

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

$$l := 0$$

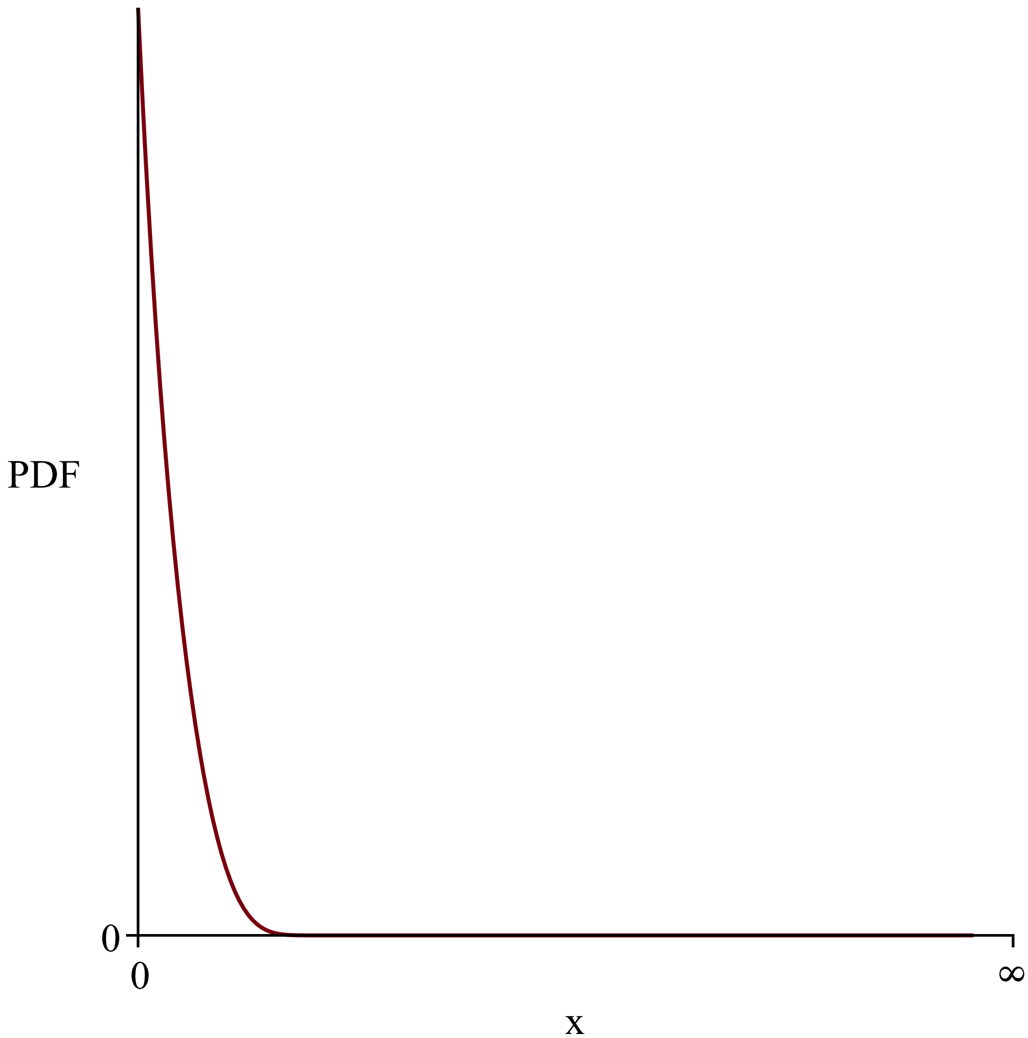
$$u := \infty$$

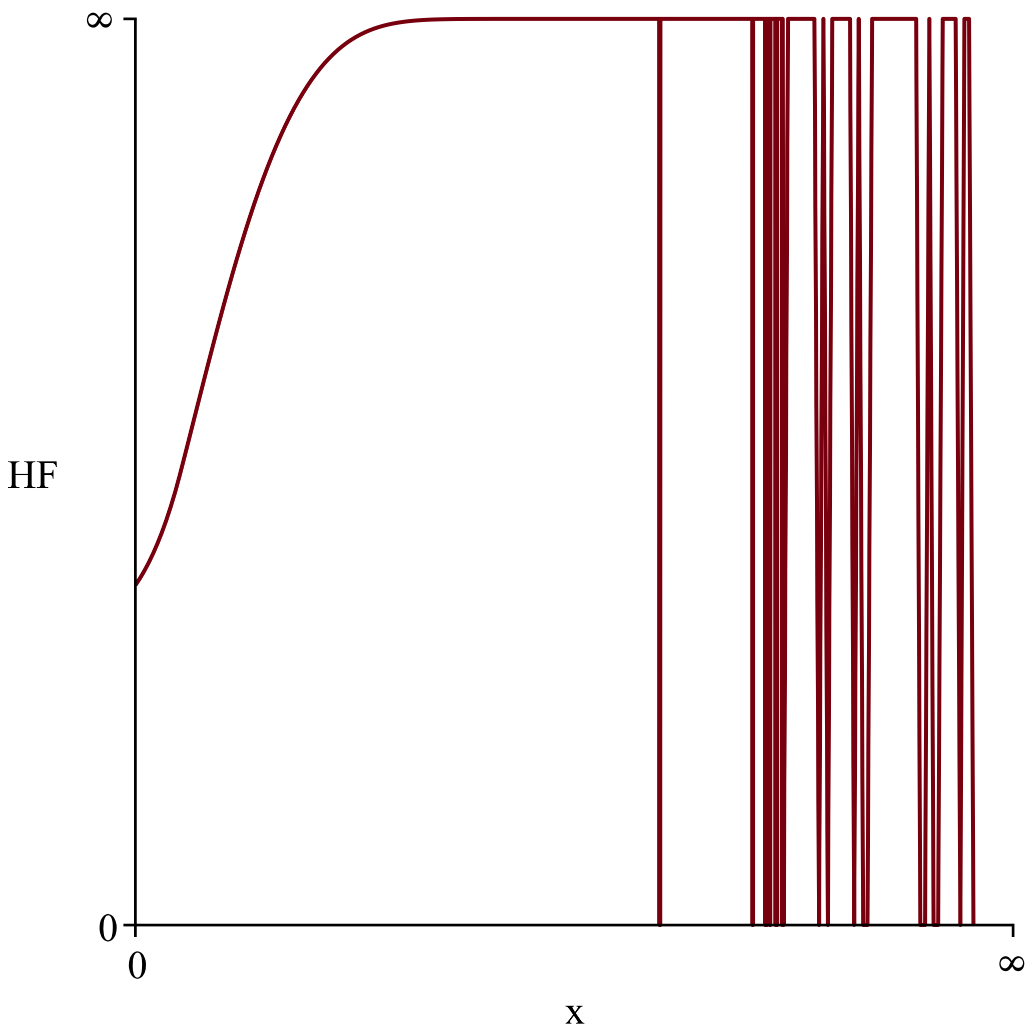
$$Temp := \left[\left[\left[y\sim \rightarrow \left(1+2^{1+\sinh(y\sim)}\right) e^{-\frac{\sinh(y\sim)\ln(2)+2^{1+\sinh(y\sim)}-2}{\ln(2)}} \cosh(y\sim)\right], [0, \infty],\right.\right.$$

$$\left.\left.["\text{Continuous}", "\text{PDF}"]\right]\right]$$

$$"\text{f(x)}", \left(1+2^{1+\sinh(x)}\right) e^{-\frac{\sinh(x)\ln(2)+2^{1+\sinh(x)}-2}{\ln(2)}} \cosh(x)$$

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






```
 \left( 1+{2}^{1+\sinh \left( x \right) } \right) {{\rm e}^{-{\frac {
\sinh \left( x \right) \ln  \left( 2 \right) +{2}^{1+\sinh \left( x
 \right) }-2}{\ln  \left( 2 \right) }}}}\cosh \left( x \right)
```

"i is", 14,

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

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

$$l := 0$$

$$u := \infty$$

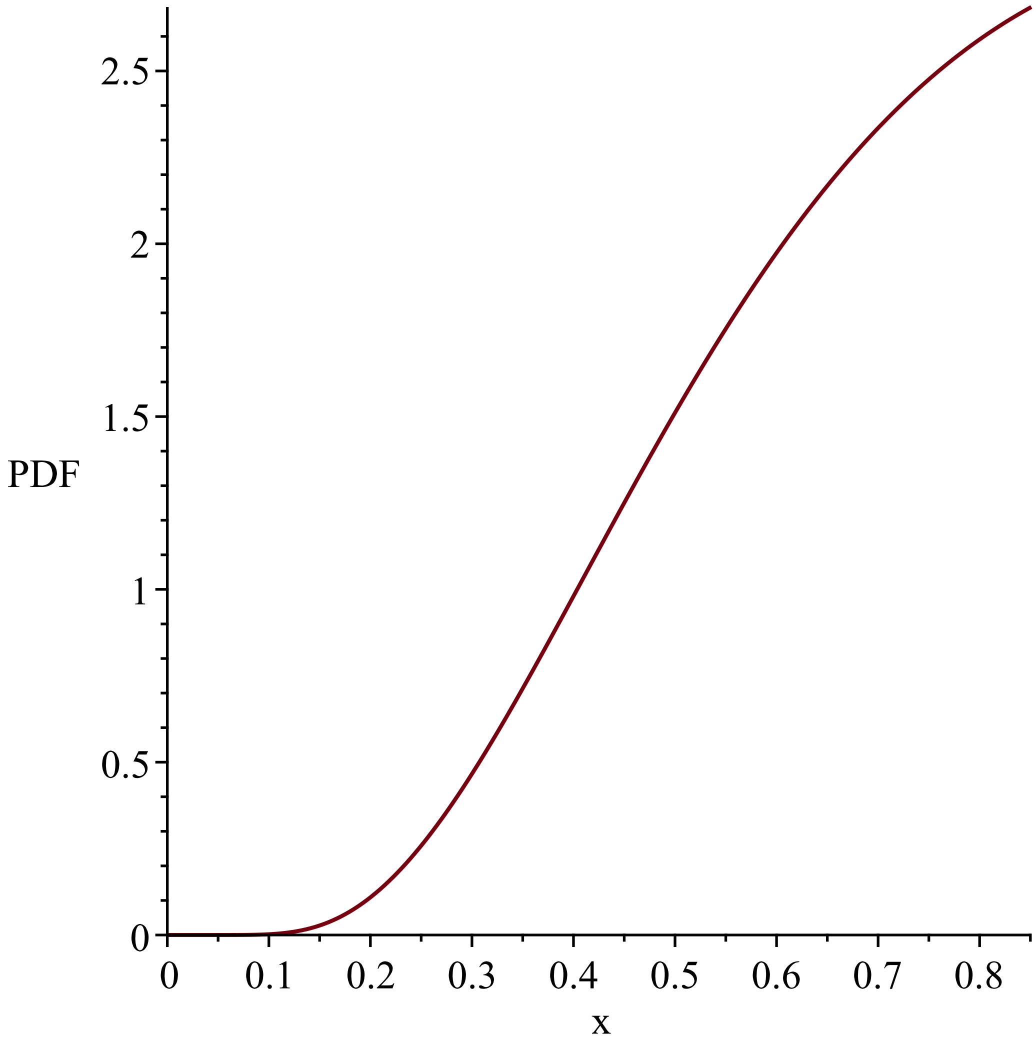
$$Temp := \left[\left[y\sim \to \frac{\operatorname{signum}(y\sim)\, e^{\frac{\ln(2) - 2^{\operatorname{arccsch}(y\sim)} + 2}{\ln(2)}} \left(1 + 2^{\operatorname{arccsch}(y\sim)}\right)}{\sqrt{y\sim^2+1}\,\left(\sqrt{y\sim^2+1}\ \operatorname{signum}(y\sim) + 1\right)}\right], \left[0, \frac{2}{e - e^{-1}}\right], \left["\text{Continuous}", "\text{PDF}"\right]\right]$$

$$"f(x)", \frac{\operatorname{signum}(x)\, e^{\frac{\ln(2) - 2^{\operatorname{arccsch}(x)} + 2}{\ln(2)}} \left(1 + 2^{\operatorname{arccsch}(x)}\right)}{\sqrt{x^2+1}\,\left(\sqrt{x^2+1}\,\operatorname{signum}(x) + 1\right)}$$

$$"h(x)", -\left(\operatorname{signum}(x)\, e^{\frac{\ln(2) - 2^{\operatorname{arccsch}(x)} + 2}{\ln(2)}} \left(1 + 2^{\operatorname{arccsch}(x)}\right)\right) \Bigg/ \left(\sqrt{x^2+1}\,\left(\sqrt{x^2+1}\,\operatorname{signum}(x) + 1\right) \left(-1 + e^{1 + \frac{2}{\ln(2)}} \left(\int_0^x \frac{\operatorname{signum}(t)\,\left(1 + 2^{\operatorname{arccsch}(t)}\right) e^{-\frac{2^{\operatorname{arccsch}(t)}}{\ln(2)}}}{\sqrt{t^2+1}\,\left(\sqrt{t^2+1}\,\operatorname{signum}(t) + 1\right)}\, dt\right)\right)\right)$$

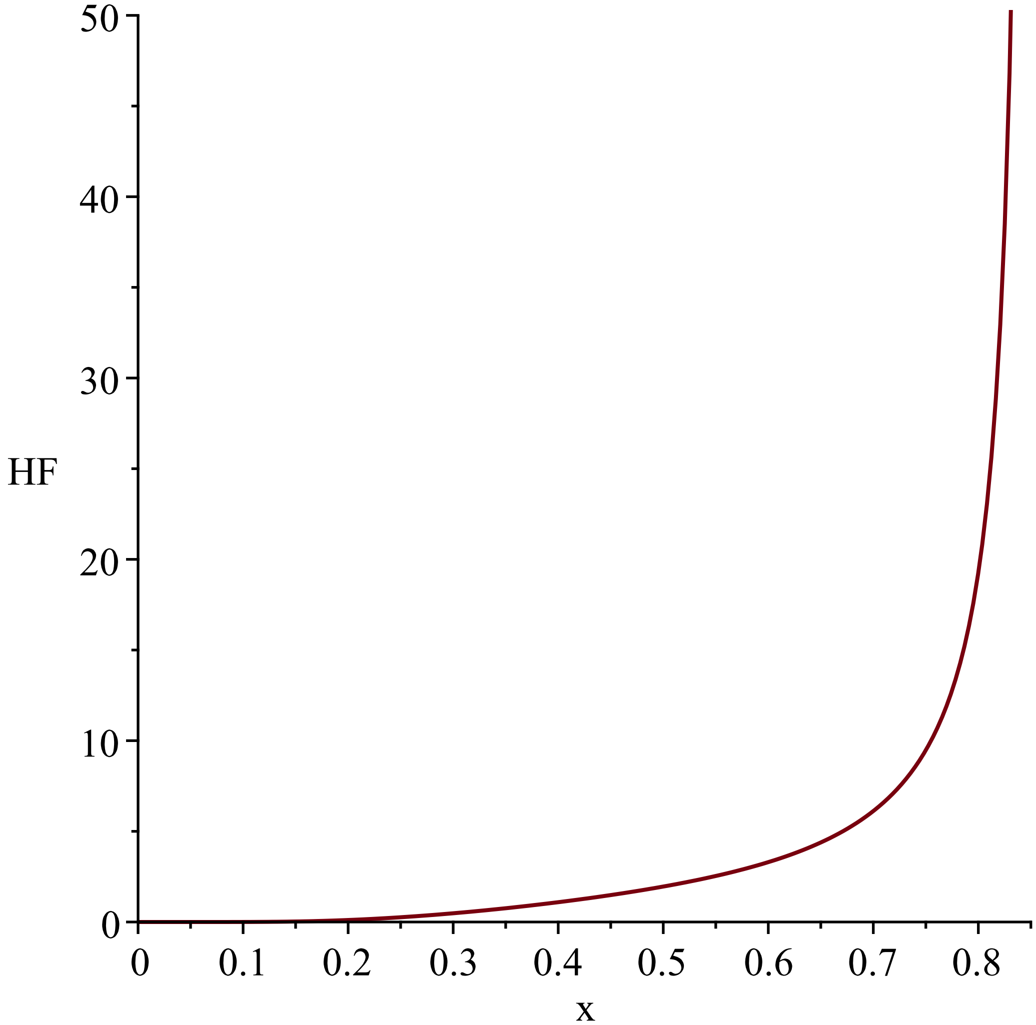
*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\frac{2}{e - e^{-1}}$

*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\frac{2}{e - e^{-1}}$

*Resetting high to RV's maximum support value*




```
{\frac {{\it signum} \left( x \right)  \left( 1+{2}^{{\rm
arccsch}
\left(x\right)} \right) }{\sqrt {{x}^{2}+1} \left( \sqrt {{x}^
{2}+1}{
\it signum} \left( x \right) +1 \right) }{{\rm e}^{{\frac {\ln
 \left( 2 \right) -{2}^{{\rm arccsch} \left(x\right)}+2}{\ln
\left( 2
 \right) }}}}}
```

"i is", 15,
" -------------------------------------------------------------------------------------------------------------
----------"

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

$$l := 0$$

$$u := \infty$$

$Temp := \Big[\Big[ y\sim$

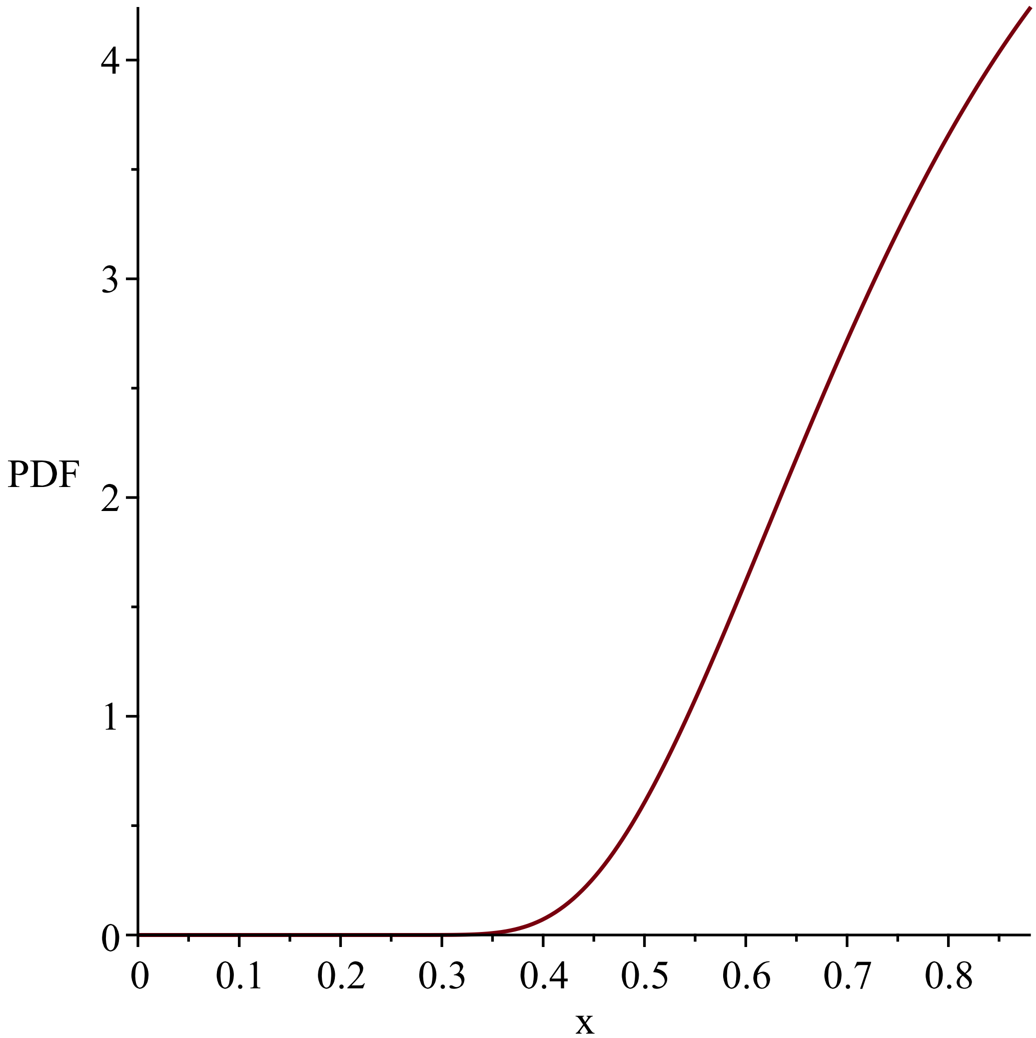
$$\rightarrow \frac{\left(1+2^{\frac{1}{\sinh(y\sim)}}\right) e^{\frac{-\ln(2)+\ln(2)\sinh(y\sim)-2^{\frac{1}{\sinh(y\sim)}}\sinh(y\sim)+2\sinh(y\sim)}{\ln(2)\sinh(y\sim)}}\cosh(y\sim)}{\sinh(y\sim)^2}\Bigg], \left[0, \ln\left(1+\sqrt{2}\right)\right], ["Continuous", "PDF"]\Bigg]$$

$$"f(x)", \frac{\left(1+2^{\frac{1}{\sinh(x)}}\right) e^{\frac{-\ln(2)+\sinh(x)\ln(2)-2^{\frac{1}{\sinh(x)}}\sinh(x)+2\sinh(x)}{\ln(2)\sinh(x)}}\cosh(x)}{\sinh(x)^2}$$

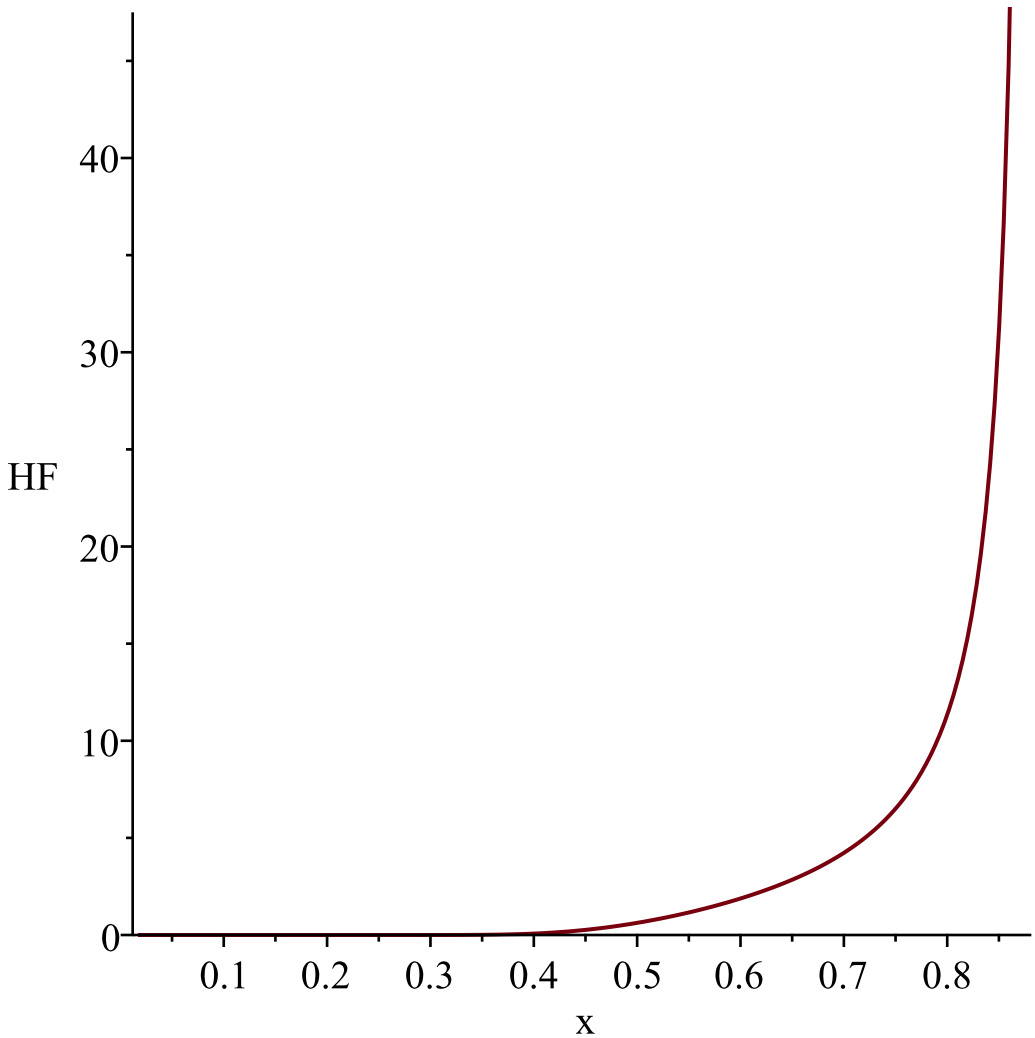
"h(x)",

$$\Bigg(\cosh(x)\, e^{\frac{1}{\left(e^{2x}-1\right)\ln(2)\sinh(x)}\left(2e^{x}\ln(2)\sinh(x)+\sinh(x)\ln(2)e^{2x}-2^{\frac{1}{\sinh(x)}}\sinh(x)e^{2x}+e^{2x}4^{\frac{e^{x}}{e^{2x}-1}}\sinh(x)-e^{2x}\ln(2)+2^{\frac{1}{\sinh(x)}}\sinh(x)+2\sinh(x)e^{2x}+\ln(2)\right)}\left(1+2^{\frac{1}{\sinh(x)}}\right)\Bigg) \Bigg/ \left(\sinh(x)^2\left(e^{\frac{e^{2x}4^{\frac{e^{x}}{e^{2x}-1}}+2e^{x}\ln(2)+\ln(2)+2}{\left(e^{2x}-1\right)\ln(2)}}-e^{\frac{e^{2x}\ln(2)+4^{\frac{e^{x}}{e^{2x}-1}}+2e^{2x}}{\left(e^{2x}-1\right)\ln(2)}}\right)\right)$$

*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\ln\left(1+\sqrt{2}\right)$
*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\ln\left(1+\sqrt{2}\right)$
*Resetting high to RV's maximum support value*




```
{\frac { \left( 1+{2}^{ \left( \sinh \left( x \right)  \right) ^
{-1}}
 \right) \cosh \left( x \right) }{ \left( \sinh \left( x \right)

 \right) ^{2}}{{\rm e}^{{\frac {-\ln  \left( 2 \right) +\sinh
\left( x
 \right) \ln  \left( 2 \right) -{2}^{ \left( \sinh \left( x
\right)
 \right) ^{-1}}\sinh \left( x \right) +2\,\sinh \left( x \right)
}{
\sinh \left( x \right) \ln  \left( 2 \right) }}}}}
```

"i is", 16,

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

----------"

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

$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow \frac{e^{\frac{\ln(2) - 2^{\operatorname{arctanh}\left(\frac{1}{y\sim}\right)} + 2}{\ln(2)}} \operatorname{signum}(y\sim) \left(1 + 2^{\operatorname{arctanh}\left(\frac{1}{y\sim}\right)}\right)}{\sqrt{y\sim^2 - 1}\,(y\sim + 1)}\right], \left[1, \frac{-e - e^{-1}}{e^{-1} - e}\right], \left[\text{"Continuous"}, \text{"PDF"}\right]\right]$$

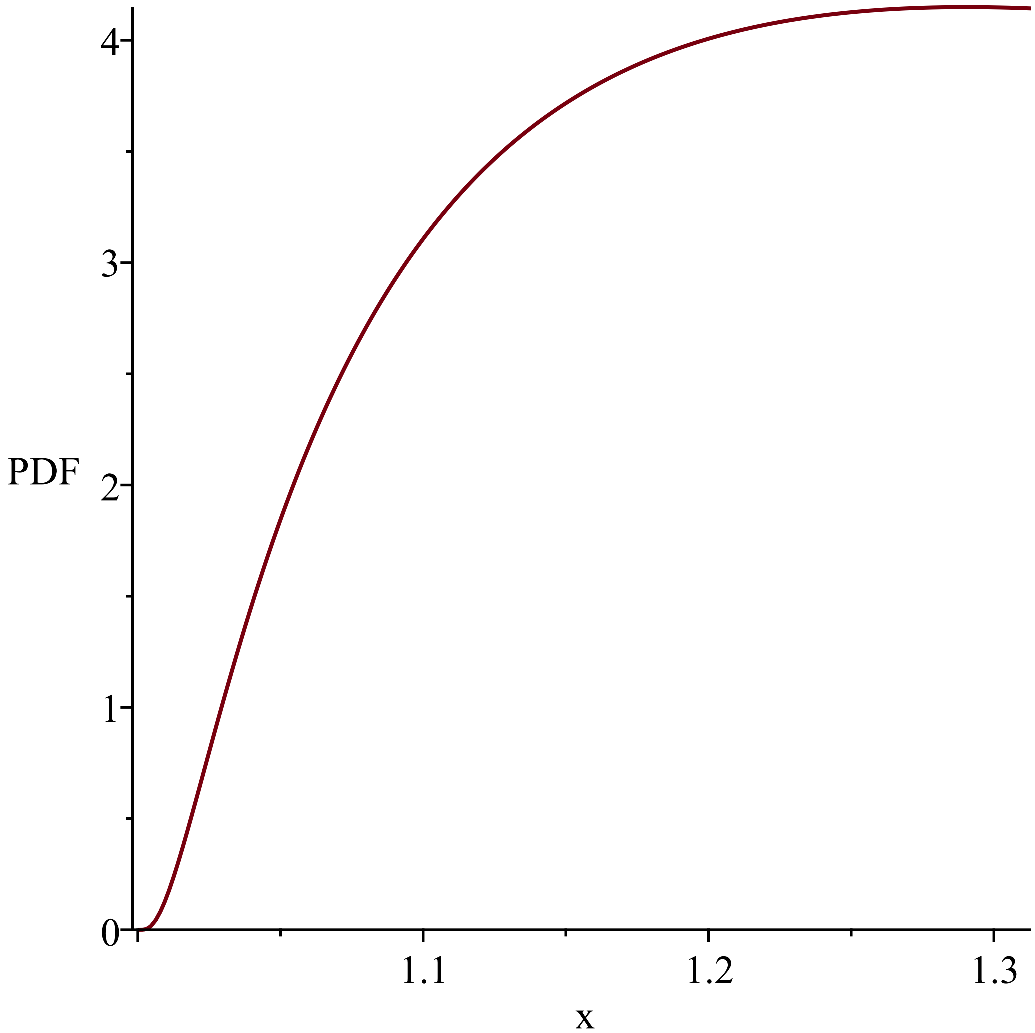
$$\text{"f(x)"}, \frac{e^{\frac{\ln(2) - 2^{\operatorname{arctanh}\left(\frac{1}{x}\right)} + 2}{\ln(2)}} \operatorname{signum}(x) \left(1 + 2^{\operatorname{arctanh}\left(\frac{1}{x}\right)}\right)}{\sqrt{x^2 - 1}\,(x + 1)}$$

"h(x)",

$$-\left(\operatorname{signum}(x)\, e^{\frac{\ln(2) - 2^{\operatorname{arctanh}\left(\frac{1}{x}\right)} + 2}{\ln(2)}} \left(1 + 2^{\operatorname{arctanh}\left(\frac{1}{x}\right)}\right)\right) \Bigg/ \left(\sqrt{x^2 - 1}\,(x + 1) \left(e^{1 + \frac{2}{\ln(2)}} \left(\int_1^x \frac{\operatorname{signum}(t) \left(1 + 2^{\operatorname{arctanh}\left(\frac{1}{t}\right)}\right) e^{-\frac{2^{\operatorname{arctanh}\left(\frac{1}{t}\right)}}{\ln(2)}}}{\sqrt{t^2 - 1}\,(t + 1)}\, dt\right) - 1\right)\right)$$

*WARNING(PlotDist): Low value provided by user,* 0 *is less than minimum support value of random variable* 1 *Resetting low to RV's minimum support value*

*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $\frac{-e - e^{-1}}{e^{-1} - e}$ *Resetting high to RV's maximum support value*




*WARNING(PlotDist): Low value provided by user*, 0 *is less than minimum support value of random variable*

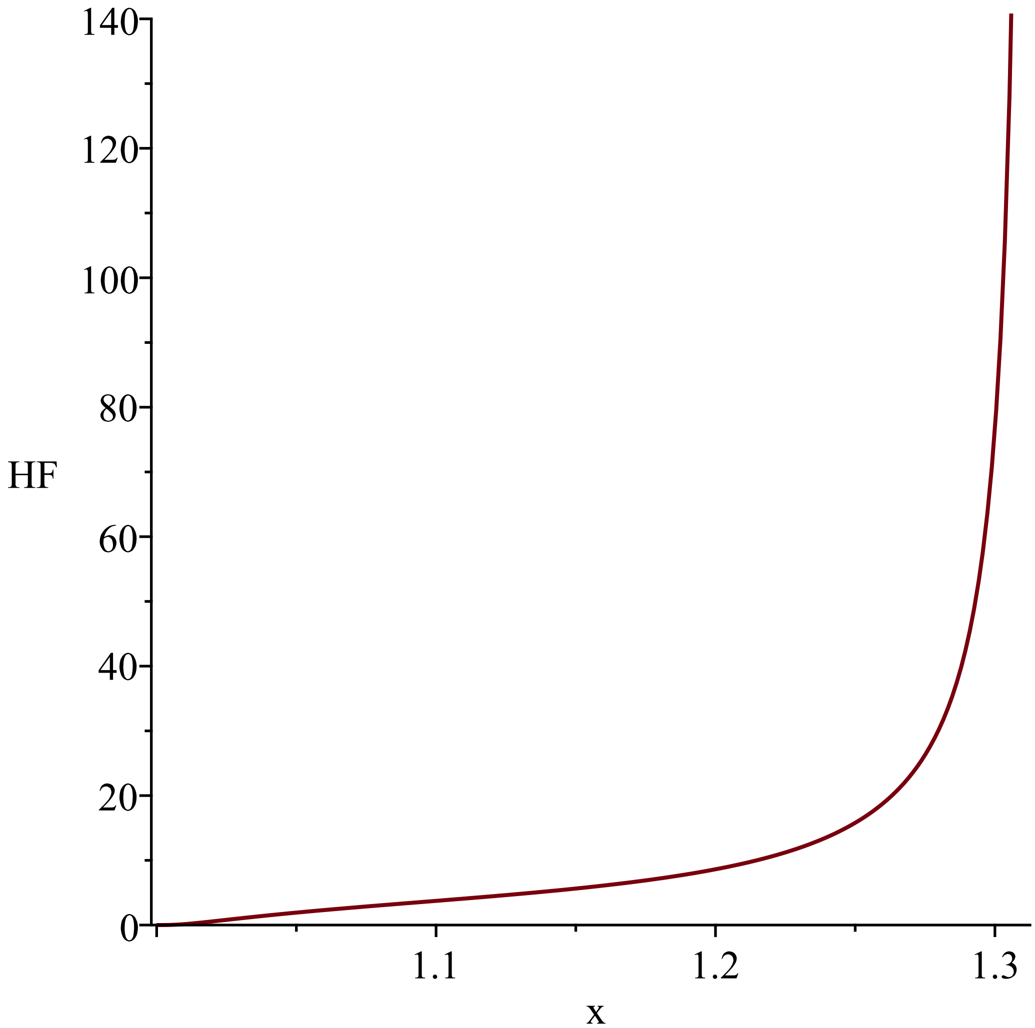
1

*Resetting low to RV's minimum support value*

*WARNING(PlotDist): High value provided by user*, $\infty$ *is greater than maximum support value of the random*

*variable*, $\frac{-e - e^{-1}}{e^{-1} - e}$

*Resetting high to RV's maximum support value*




```
{\frac {{\it signum} \left( x \right)  \left( 1+{2}^{{\rm arctanh}
\left({x}^{-1}\right)} \right) }{\sqrt {{x}^{2}-1} \left( x+1
\right)
}{{\rm e}^{{\frac {\ln  \left( 2 \right) -{2}^{{\rm arctanh}
\left({x}
^{-1}\right)}+2}{\ln  \left( 2 \right) }}}}}
```

"i is", 17,

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

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

$$l := 0$$

$$u := \infty$$

$$Temp := \left[ \left[ y\sim \rightarrow \frac{\operatorname{signum}(y\sim)\, \mathrm{e}^{\frac{\ln(2) - 2^{\operatorname{arcsinh}\left(\frac{1}{y\sim}\right)} + 2}{\ln(2)}} \left(1 + 2^{\operatorname{arcsinh}\left(\frac{1}{y\sim}\right)}\right)}{\sqrt{y\sim^2+1}\, \left(\sqrt{y\sim^2+1}\ \operatorname{signum}(y\sim) + 1\right)} \right], \left[0, -\frac{2}{\mathrm{e}^{-1} - \mathrm{e}}\right],$$

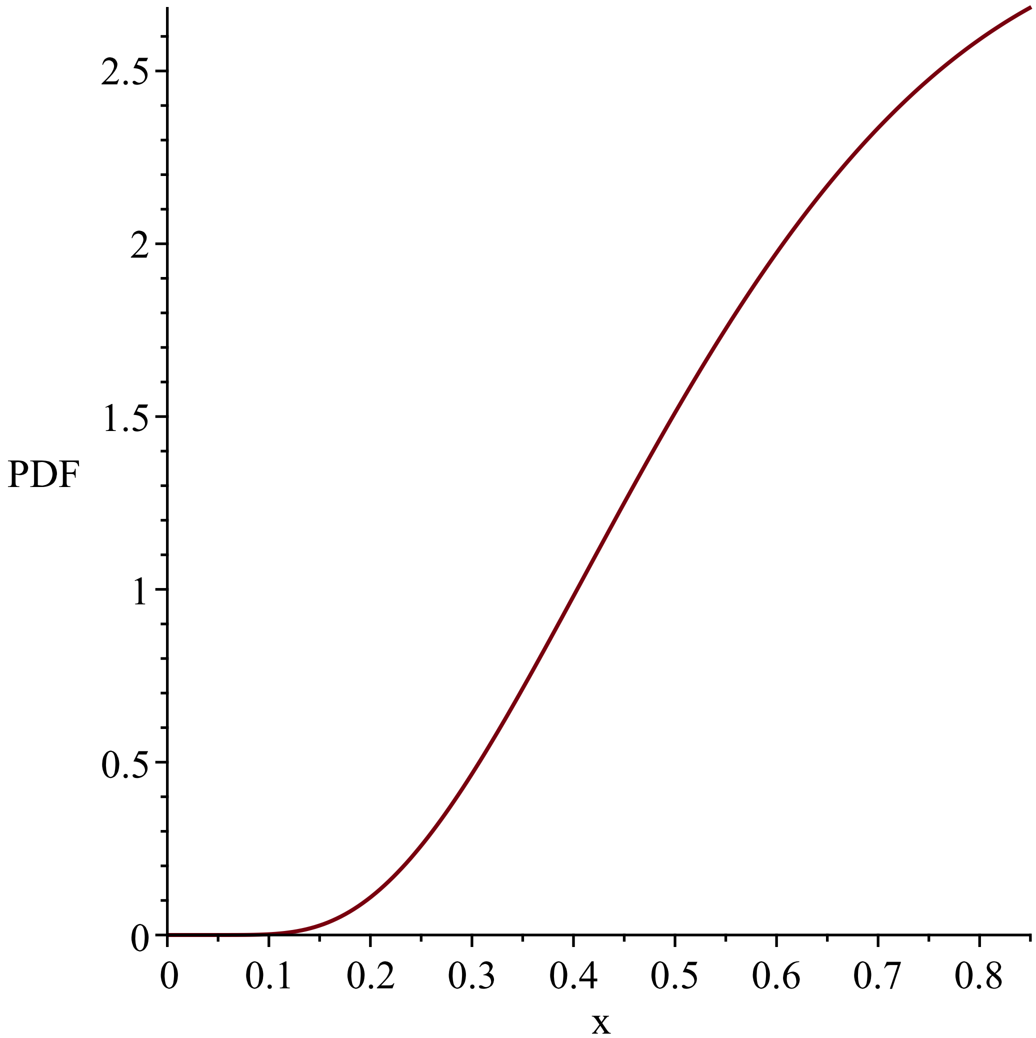
$$["Continuous", "PDF"]$$

$$"f(x)", \frac{\mathrm{signum}(x)\, e^{\frac{\ln(2) - 2^{\mathrm{arcsinh}\left(\frac{1}{x}\right)} + 2}{\ln(2)}} \left(1 + 2^{\mathrm{arcsinh}\left(\frac{1}{x}\right)}\right)}{\sqrt{x^2+1}\left(\sqrt{x^2+1}\ \mathrm{signum}(x) + 1\right)}$$

$$"h(x)", -\left(\mathrm{signum}(x)\, e^{\frac{\ln(2) - 2^{\mathrm{arcsinh}\left(\frac{1}{x}\right)} + 2}{\ln(2)}} \left(1 + 2^{\mathrm{arcsinh}\left(\frac{1}{x}\right)}\right)\right) \Bigg/ \left(\sqrt{x^2+1}\left(\sqrt{x^2+1}\ \mathrm{signum}(x) + 1\right)\left(-1 + e^{1 + \frac{2}{\ln(2)}}\left(\int_0^x \frac{\mathrm{signum}(t)\left(1 + 2^{\mathrm{arcsinh}\left(\frac{1}{t}\right)}\right) e^{-\frac{2^{\mathrm{arcsinh}\left(\frac{1}{t}\right)}}{\ln(2)}}}{\sqrt{t^2+1}\left(\sqrt{t^2+1}\ \mathrm{signum}(t) + 1\right)}\, dt\right)\right)\right)$$

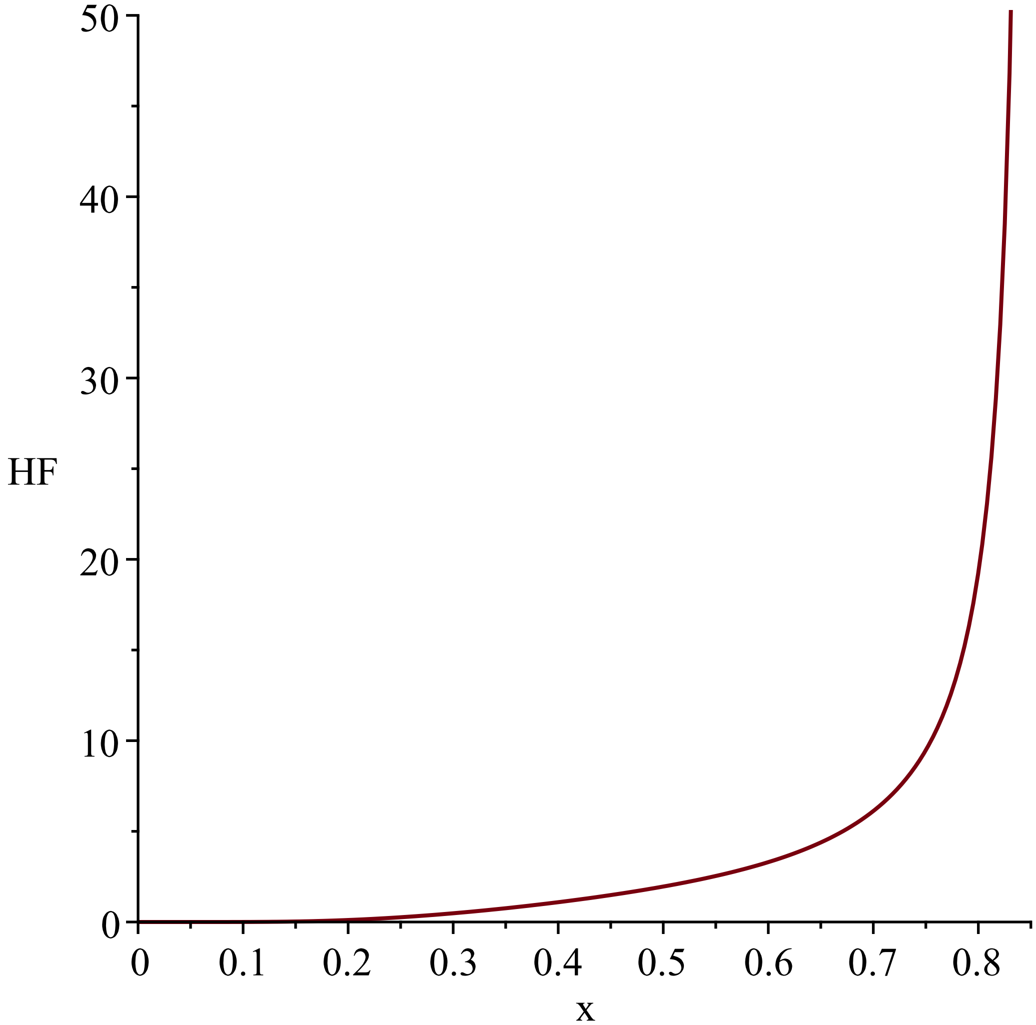
*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* $-\frac{2}{e^{-1} - e}$

*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user, ∞ is greater than maximum support value of the random variable,* $-\frac{2}{e^{-1}-e}$

*Resetting high to RV's maximum support value*




```
{\frac {{\it signum} \left( x \right)  \left( 1+{2}^{{\rm
arcsinh}
\left({x}^{-1}\right)} \right) }{\sqrt {{x}^{2}+1} \left( \sqrt
{{x}^{
2}+1}{\it signum} \left( x \right) +1 \right) }{{\rm e}^{{\frac
{\ln
 \left( 2 \right) -{2}^{{\rm arcsinh} \left({x}^{-1}\right)}+2}
{\ln
 \left( 2 \right) }}}}}
```

"i is", 18,

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

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

$$l := 0$$

$$u := \infty$$

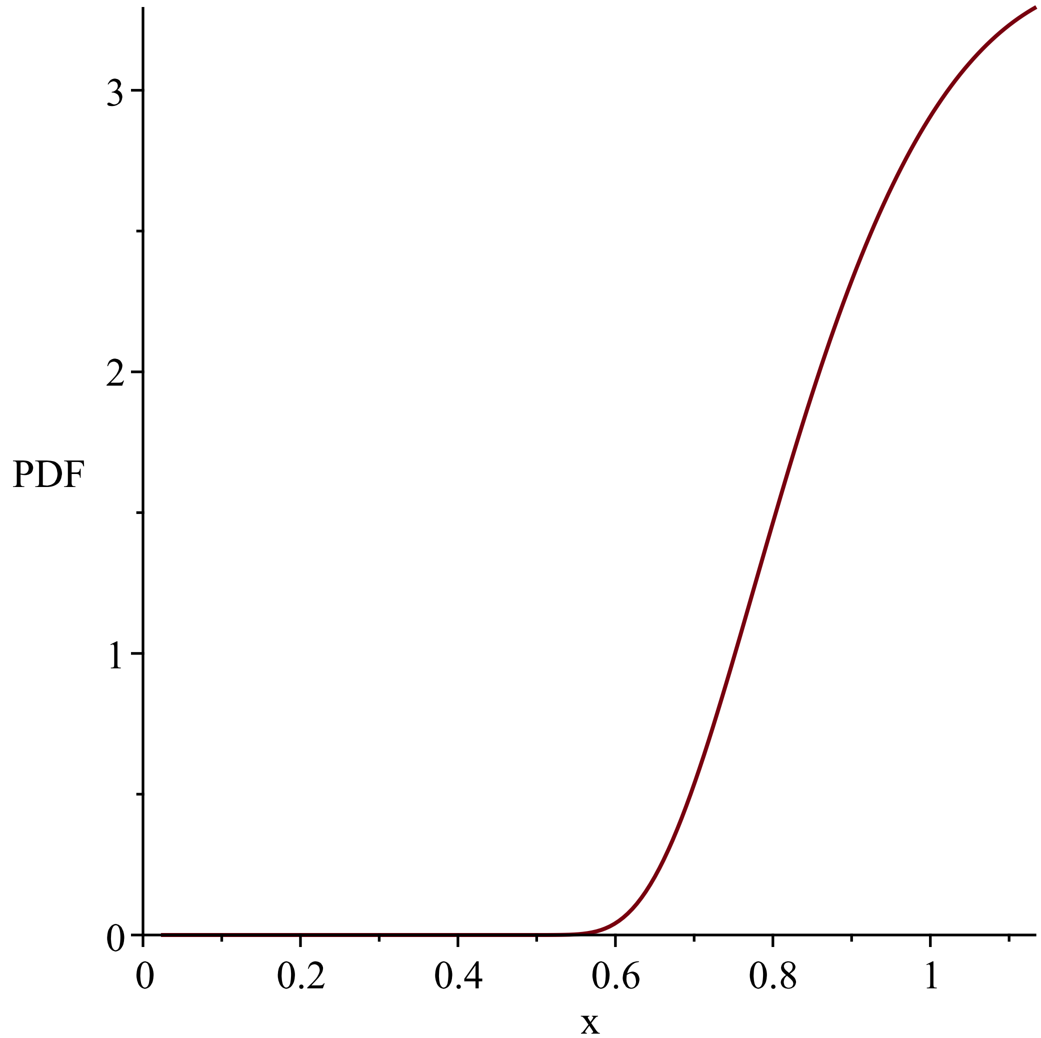
$$Temp := \left[\left[y\sim \rightarrow \frac{\left(1+2^{\sinh\left(\frac{1}{y\sim}\right)}\right) \mathrm{e}^{-\frac{\sinh\left(\frac{1}{y\sim}\right)\ln(2) - \ln(2) + 2^{\sinh\left(\frac{1}{y\sim}\right)} - 2}{\ln(2)}} \cosh\left(\frac{1}{y\sim}\right)}{y\sim^2}\right], \left[0, \frac{1}{\ln\left(1+\sqrt{2}\right)}\right], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, \frac{\left(1+2^{\sinh\left(\frac{1}{x}\right)}\right) \mathrm{e}^{-\frac{\sinh\left(\frac{1}{x}\right)\ln(2) - \ln(2) + 2^{\sinh\left(\frac{1}{x}\right)} - 2}{\ln(2)}} \cosh\left(\frac{1}{x}\right)}{x^2}$$

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

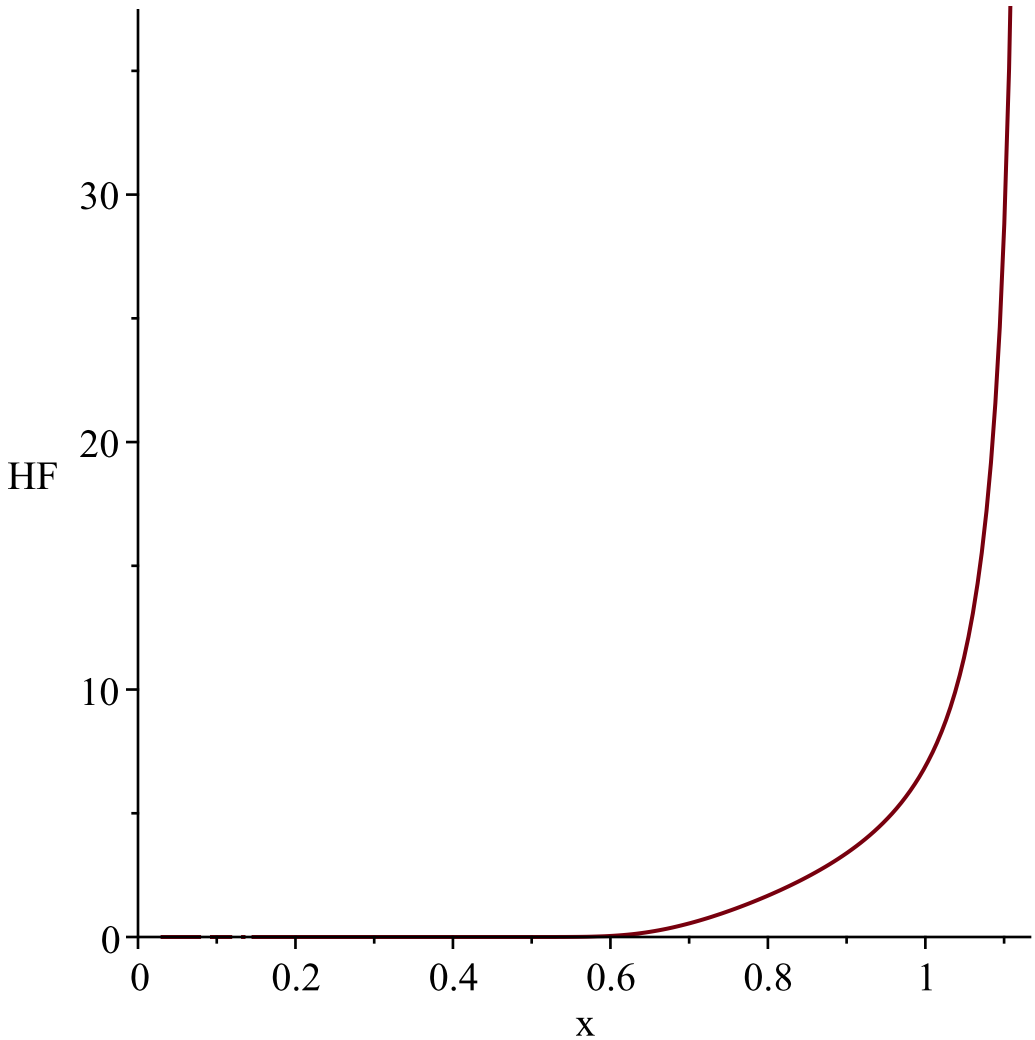
*WARNING(PlotDist): High value provided by user, $\infty$ is greater than maximum support value of the random variable, $\frac{1}{\ln\left(1+\sqrt{2}\right)}$*

*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user, ∞ is greater than maximum support value of the random variable,* $\frac{1}{\ln\left(1+\sqrt{2}\right)}$

*Resetting high to RV's maximum support value*




```
{\frac { \left( 1+{2}^{\sinh \left( {x}^{-1} \right) } \right)
\cosh
 \left( {x}^{-1} \right) }{{x}^{2}}{{\rm e}^{-{\frac {\sinh
\left( {x}
^{-1} \right) \ln  \left( 2 \right) -\ln  \left( 2 \right) +{2}^
{\sinh
 \left( {x}^{-1} \right) }-2}{\ln  \left( 2 \right) }}}}}
```

"i is", 19,

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

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

$$l := 0$$

$$u := \infty$$

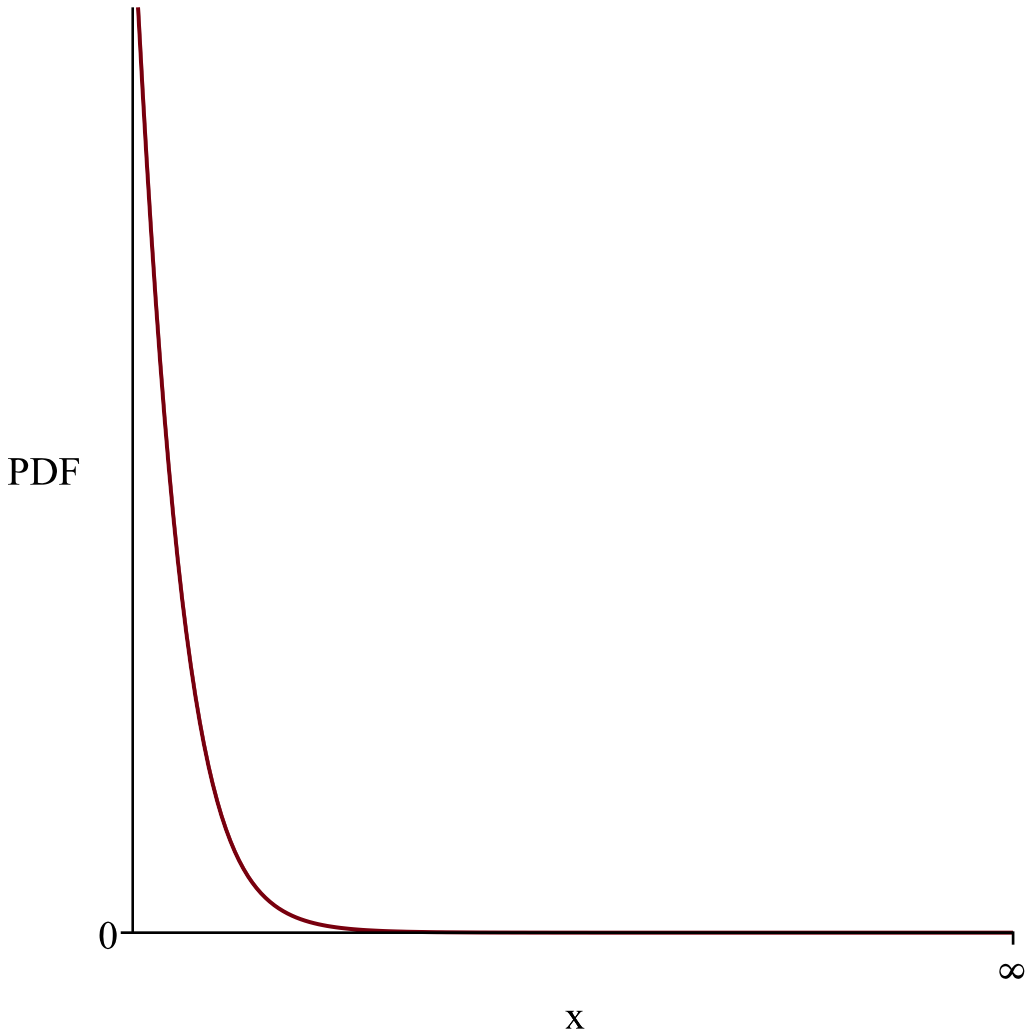
$$Temp := \left[ \left[ y\sim \rightarrow \frac{\mathrm{e}^{-\frac{2^{1 + \operatorname{arccsch}\left(\frac{1}{y\sim - 1}\right)} - 2}{\ln(2)}} \left(1 + 2^{1 + \operatorname{arccsch}\left(\frac{1}{y\sim - 1}\right)}\right)}{\sqrt{y\sim^2 - 2\,y\sim + 2}\,\left(y\sim - 1 + \sqrt{y\sim^2 - 2\,y\sim + 2}\right)} \right], [1, \infty],$$

$$["\text{Continuous}", "\text{PDF}"]$$

$$"\text{f(x)}", \frac{e^{-\frac{2^{1+\operatorname{arccsch}\left(\frac{1}{x-1}\right)}-2}{\ln(2)}} \left(1+2^{1+\operatorname{arccsch}\left(\frac{1}{x-1}\right)}\right)}{\sqrt{x^2-2x+2}\,\left(x-1+\sqrt{x^2-2x+2}\right)}$$

$$"\text{h(x)}", -\left(e^{-\frac{2^{1+\operatorname{arccsch}\left(\frac{1}{x-1}\right)}-2}{\ln(2)}} \left(1+2^{1+\operatorname{arccsch}\left(\frac{1}{x-1}\right)}\right)\right) \Bigg/ \left(\sqrt{x^2-2x+2}\,\left(x-1+\sqrt{x^2-2x+2}\right)\left(-1+e^{\frac{2}{\ln(2)}}\left(\int_1^x \frac{\left(1+2^{1+\operatorname{arccsch}\left(\frac{1}{t-1}\right)}\right) e^{-\frac{2^{1+\operatorname{arccsch}\left(\frac{1}{t-1}\right)}}{\ln(2)}}}{\sqrt{t^2-2t+2}\,\left(t-1+\sqrt{t^2-2t+2}\right)}\,dt\right)\right)\right)$$

*WARNING(PlotDist): Low value provided by user*, 0
*is less than minimum support value of random variable*
1
*Resetting low to RV's minimum support value*




*WARNING(PlotDist): Low value provided by user,* 0
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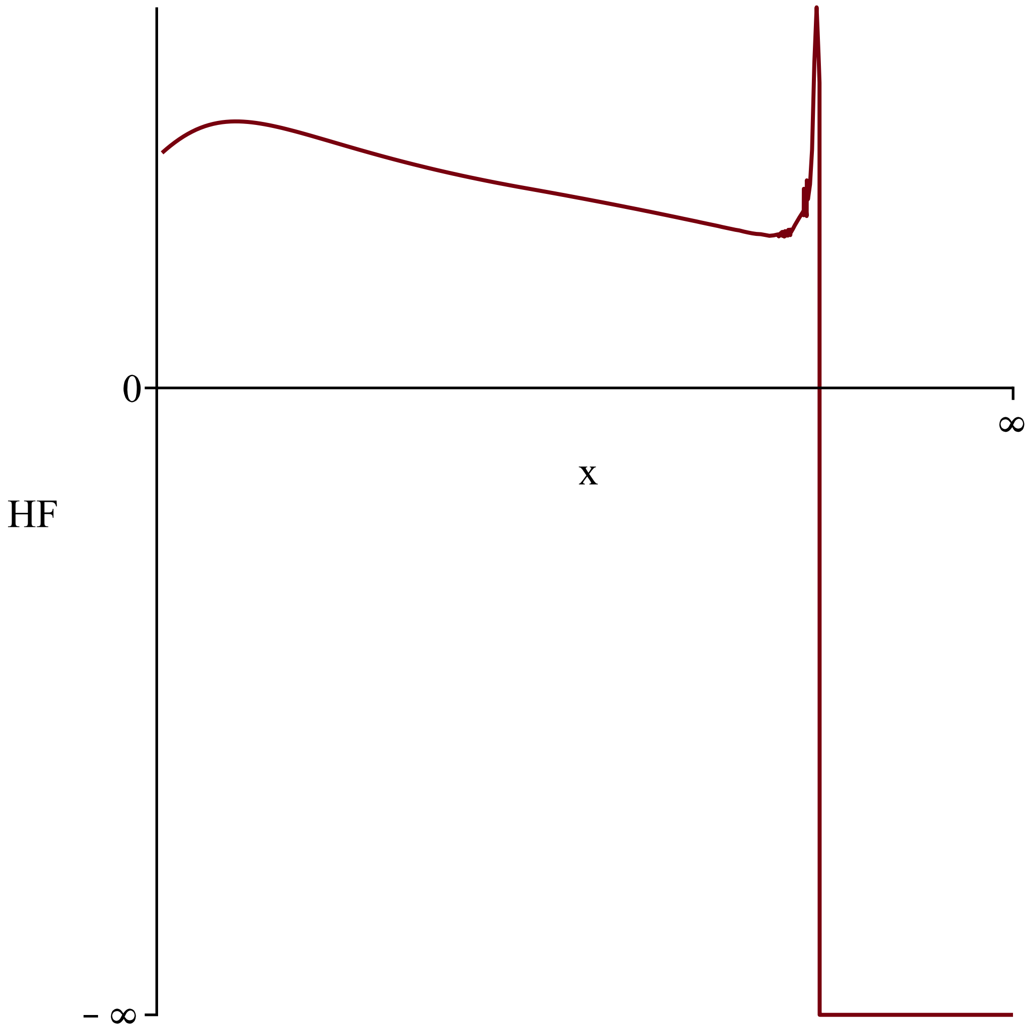
1
*Resetting low to RV's minimum support value*




```
{\frac {1+{2}^{1+{\rm arccsch} \left( \left( x-1 \right) ^{-1}
\right)}
}{\sqrt {{x}^{2}-2\,x+2} \left( x-1+\sqrt {{x}^{2}-2\,x+2}
\right) }{
{\rm e}^{-{\frac {{2}^{1+{\rm arccsch} \left( \left( x-1 \right)
^{-1}
\right)}-2}{\ln  \left( 2 \right) }}}}}
```

"i is", 20,

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

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

$$l := 0$$

$$u := \infty$$

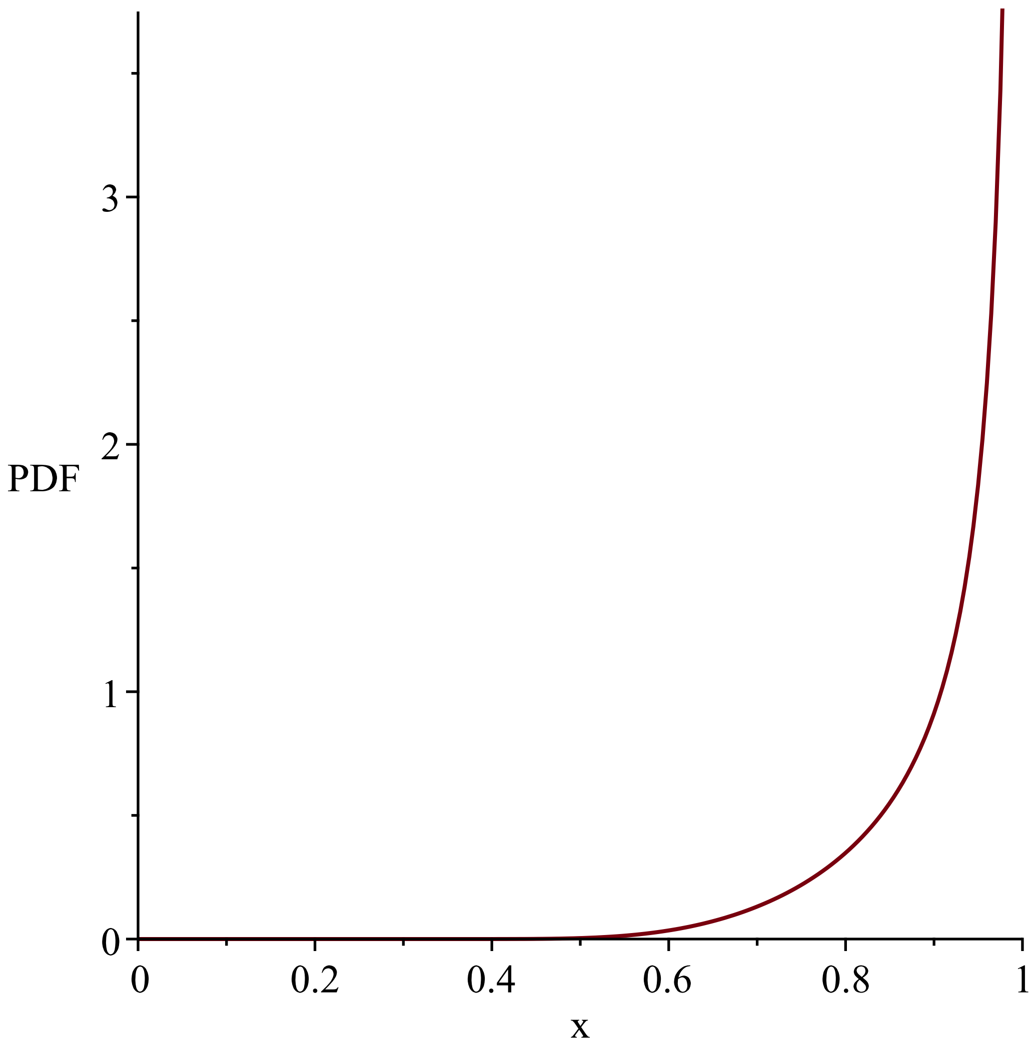
$$Temp := \left[\left[y\sim \rightarrow - \frac{e^{-\frac{\operatorname{arctanh}(y\sim)\, 2^{\frac{\operatorname{arctanh}(y\sim)+1}{\operatorname{arctanh}(y\sim)}} + \ln(2) - 2\operatorname{arctanh}(y\sim)}{\operatorname{arctanh}(y\sim)\ln(2)}} \left(1 + 2^{\frac{\operatorname{arctanh}(y\sim)+1}{\operatorname{arctanh}(y\sim)}}\right)}{\operatorname{arctanh}(y\sim)^2\left(y\sim^2 - 1\right)}\right], [0,\right.\right.$$

1 ], ["Continuous", "PDF"]]

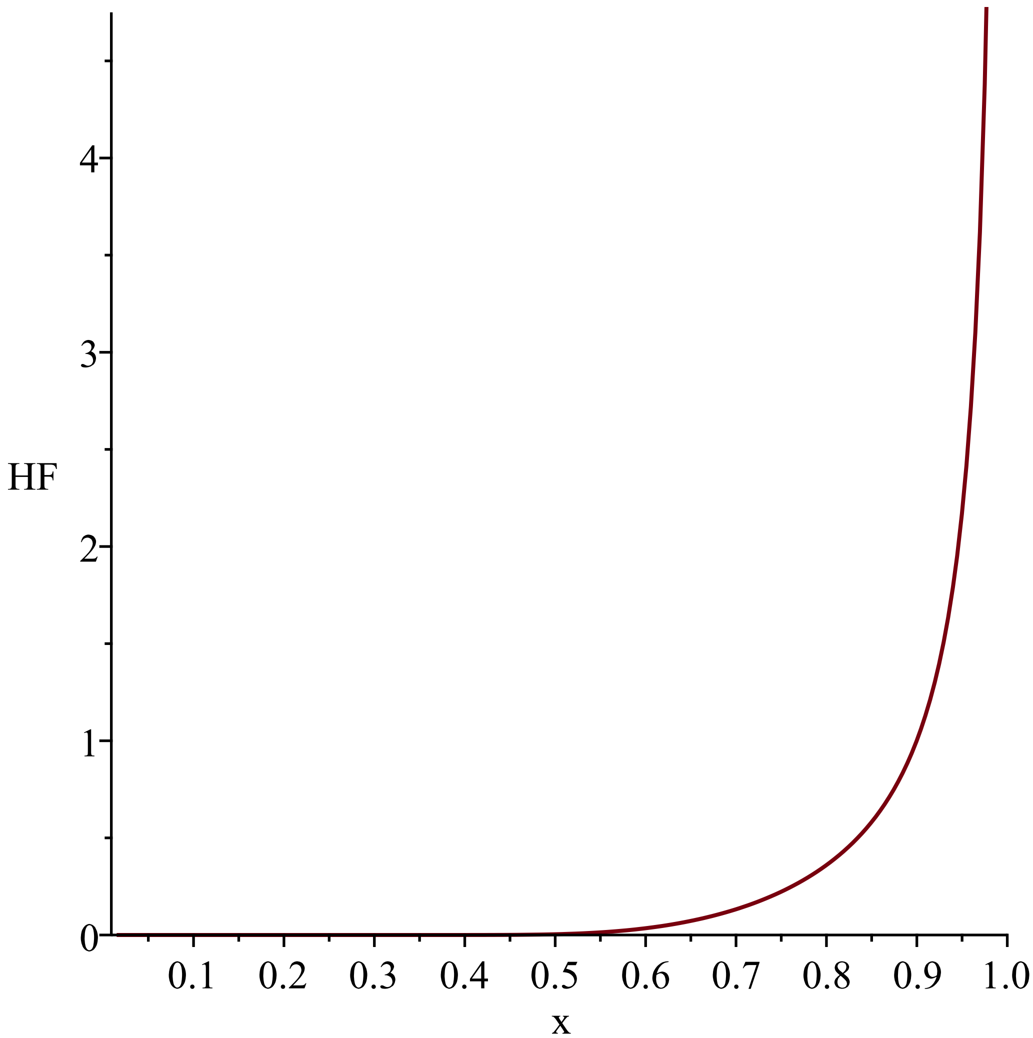
$$\text{"f(x)"}, -\frac{e^{-\frac{\operatorname{arctanh}(x)\, 2^{\frac{1+\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}+\ln(2)-2\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)\ln(2)}}\left(1+2^{\frac{1+\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}\right)}{\operatorname{arctanh}(x)^2\,(x^2-1)}$$

$$\text{"h(x)"}, -\left((x+1)^{-\frac{1}{(\ln(x+1)-\ln(1-x))\ln(2)\operatorname{arctanh}(x)}\left(-(x+1)^{\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}(1-x)^{-\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}4^{\frac{1}{\ln(x+1)-\ln(1-x)}}\operatorname{arctanh}(x)+\operatorname{arctanh}(x)\,2^{\frac{1+\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}+\ln(2)-2\operatorname{arctanh}(x)\right)}(1-x)^{\frac{\operatorname{arctanh}(x)\,2^{\frac{1+\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}+\ln(2)}{(\ln(x+1)-\ln(1-x))\ln(2)\operatorname{arctanh}(x)}}e^{\frac{2}{\ln(x+1)-\ln(1-x)}}\left(1+2^{\frac{1+\operatorname{arctanh}(x)}{\operatorname{arctanh}(x)}}\right)\right)\Bigg/\left(\operatorname{arctanh}(x)^2\,(x^2-1)\left((x+1)^{\frac{(x+1)^{\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}(1-x)^{-\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}4^{\frac{1}{\ln(x+1)-\ln(1-x)}}}{\ln(2)(\ln(x+1)-\ln(1-x))}}(1-x)^{\frac{2}{\ln(2)(\ln(x+1)-\ln(1-x))}}e^{\frac{2}{\ln(x+1)-\ln(1-x)}}-(x+1)^{\frac{2}{\ln(2)(\ln(x+1)-\ln(1-x))}}(1-x)^{\frac{(x+1)^{\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}(1-x)^{-\frac{\ln(2)}{\ln(x+1)-\ln(1-x)}}4^{\frac{1}{\ln(x+1)-\ln(1-x)}}}{\ln(2)(\ln(x+1)-\ln(1-x))}}\right)\right)$$

*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




*WARNING(PlotDist): High value provided by user,* $\infty$ *is greater than maximum support value of the random variable,* 1
*Resetting high to RV's maximum support value*




```
-{\frac {1}{ \left( {\rm arctanh} \left(x\right) \right) ^{2}
\left( {
x}^{2}-1 \right) }{{\rm e}^{-{\frac {1}{{\rm arctanh} \left
(x\right)
\ln  \left( 2 \right) } \left( {\rm arctanh} \left(x\right){2}^{
{
\frac {1+{\rm arctanh} \left(x\right)}{{\rm arctanh} \left
(x\right)}}}
+\ln  \left( 2 \right) -2\,{\rm arctanh} \left(x\right) \right)
}}}
 \left( 1+{2}^{{\frac {1+{\rm arctanh} \left(x\right)}{{\rm
arctanh}
\left(x\right)}}} \right) }
```

"i is", 21,

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

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

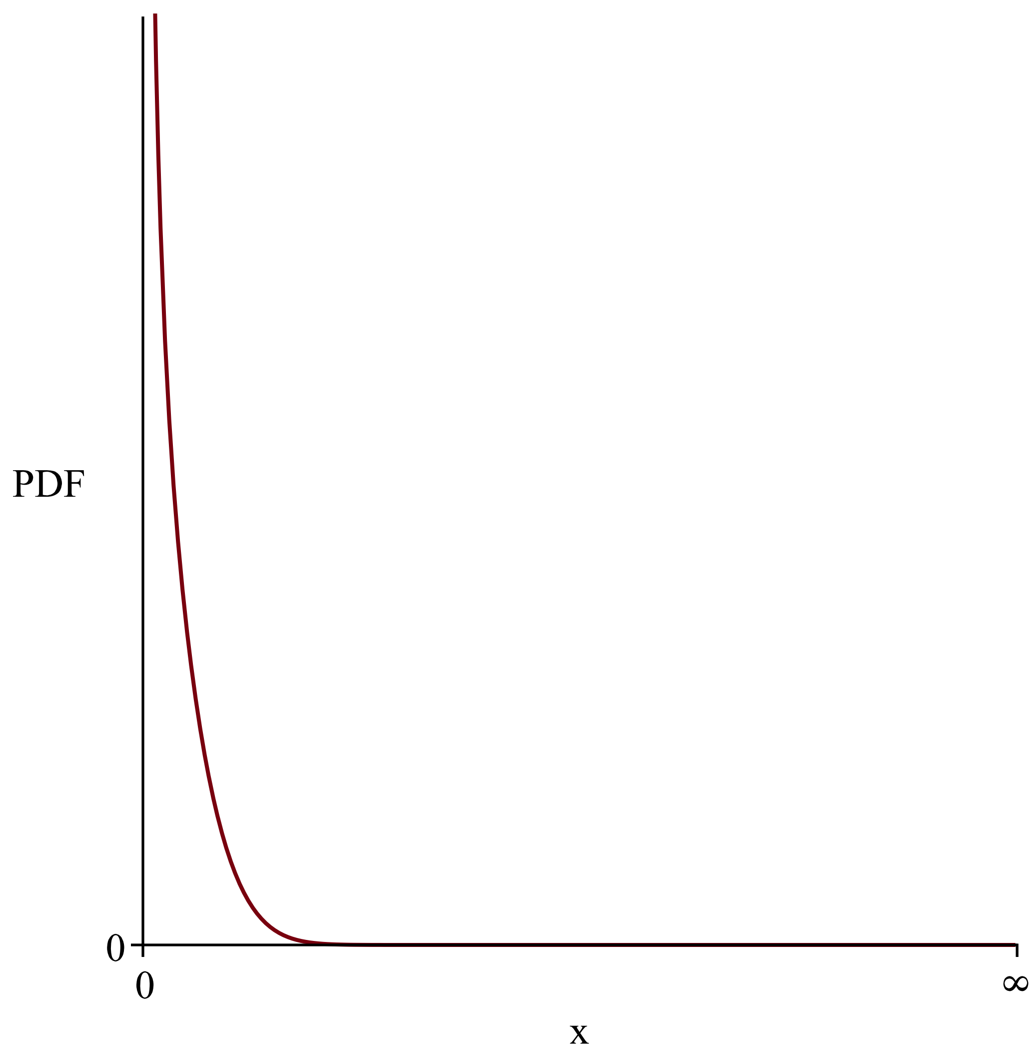
$$l := 0$$

$$u := \infty$$

$$Temp := \left[\left[y\sim \rightarrow \frac{\left(1+2^{\frac{\operatorname{arccsch}(y\sim)+1}{\operatorname{arccsch}(y\sim)}}\right) e^{-\frac{\operatorname{arccsch}(y\sim)\, 2^{\frac{\operatorname{arccsch}(y\sim)+1}{\operatorname{arccsch}(y\sim)}} + \ln(2) - 2\operatorname{arccsch}(y\sim)}{\operatorname{arccsch}(y\sim)\ln(2)}}}{\sqrt{y\sim^2+1}\, \operatorname{arccsch}(y\sim)^2\, |y\sim|}\right], [0, \infty], [\text{"Continuous"}, \text{"PDF"}]\right]$$

$$\text{"f(x)"}, \frac{\left(1+2^{\frac{\operatorname{arccsch}(x)+1}{\operatorname{arccsch}(x)}}\right) e^{-\frac{\operatorname{arccsch}(x)\, 2^{\frac{\operatorname{arccsch}(x)+1}{\operatorname{arccsch}(x)}} + \ln(2) - 2\operatorname{arccsch}(x)}{\operatorname{arccsch}(x)\ln(2)}}}{\sqrt{x^2+1}\, \operatorname{arccsch}(x)^2\, |x|}$$

$$\text{"h(x)"}, -\left(\left(1+2^{\frac{\operatorname{arccsch}(x)+1}{\operatorname{arccsch}(x)}}\right) e^{-\frac{\operatorname{arccsch}(x)\, 2^{\frac{\operatorname{arccsch}(x)+1}{\operatorname{arccsch}(x)}} + \ln(2) - 2\operatorname{arccsch}(x)}{\operatorname{arccsch}(x)\ln(2)}}\right) \Bigg/ \left(\sqrt{x^2+1}\, \operatorname{arccsch}(x)^2\, |x| \left(-1+e^{\frac{2}{\ln(2)}} \left(\int_0^x \frac{1+2\, 2^{\frac{1}{\operatorname{arccsch}(t)}}}{\left(e^{\frac{2^{\frac{1}{\operatorname{arccsch}(t)}}}{\ln(2)}}\right)^2 e^{\frac{1}{\operatorname{arccsch}(t)}} \sqrt{t^2+1}\, \operatorname{arccsch}(t)^2\, |t|}\, dt\right)\right)\right)$$



PDF
0
0
∞
x