HSEPPF

PURPOSE

Compute the hyperbolic secant percent point function.

DESCRIPTION

The hyperbolic secant distribution has the following probability density function:

f(x) = SECH(x)/PI

where SECH is the hyperbolic secant function. The documentation for the SECH function describes this function in detail. The percent point function has the formula:

G(p) = LOG(1 + TAN(PI*(p-0.5)/2))/(1 - TAN(PI*(p-0.5)/2))

SYNTAX

LET <y> = HSEPPF(<p>) <SUBSET/EXCEPT/FOR qualification>

where <p> is a number, parameter, or variable in the range 0 to 1;

<y> is a variable or a parameter (depending on what <p> is) where the computed hyperbolic secant ppf value is stored;

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES

LET A = HSEPDF(3)

LET X2 = HSEPDF(X1)

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

HSECDF	=	Compute the hyperbolic secant cumulative distribution function.
HSEPDF	=	Compute the hyperbolic secant probability density function.
LOGCDF	=	Compute the logistic cumulative distribution function.
LOGPDF	=	Compute the logistic probability density function.
LOGPPF	=	Compute the logistic percent point function.

REFERENCE

“Continuous Univariate Distributions - Vol. 2,” 2nd. Ed., Johnson, Kotz, and Balakrishnan, John Wiley and Sons, 1994 (page 147).

APPLICATIONS

Lifetime Analysis

IMPLEMENTATION DATE

95/10

PROGRAM

```
X1LABEL PROBABILITY
Y1LABEL X
TITLE AUTOMATIC
PLOT HSEPPF(P) FOR P = 0.01 0.01 0.99
```