

HSEPDF**PURPOSE**

Compute the hyperbolic secant probability density function.

DESCRIPTION

The hyperbolic secant distribution has the following probability density function:

$$f(x) = \frac{\operatorname{sech}(x)}{\pi} \quad (\text{EQ Aux-207})$$

where SECH is the hyperbolic secant function. The documentation for the SECH function describes this function in detail.

SYNTAX

LET <y> = HSEPDF(<x>) <SUBSET/EXCEPT/FOR qualification>

where <x> is a number, parameter, or variable;

<y> is a variable or a parameter (depending on what <x> is) where the computed hyperbolic secant pdf 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.
HSEPPF	=	Compute the hyperbolic secant percent point 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

```
XILABEL X  
YILABEL PROBABILITY  
TITLE AUTOMATIC  
PLOT HSEPDF(X) FOR X = -5 0.01 5
```

