ANGPPF

PURPOSE

Compute the anglit percent point function.

DESCRIPTION

The anglit distribution has the following probability density function:

$$f(x) = \sin\left(2x + \frac{\pi}{2}\right) \qquad -\frac{\pi}{4} \le x \le \frac{\pi}{4} \qquad \textbf{(EQ Aux-13)}$$

The percent point function is the inverse of the cumulative distribution function. The cumulative distribution sums the probability from 0 to the given x value (i.e., the integral of the above function). The percent point function takes a cumulative probability value and computes the corresponding x value. The anglit distribution has the following percent point function:

$$G(p) = \arcsin(\sqrt{p}) - \frac{\pi}{4} \qquad \textbf{(EQ Aux-14)}$$

SYNTAX

LET <y> = ANGPPF(<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 anglit ppf value is stored;

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

EXAMPLES

LET A = ANGPPF(0.9)

LET A = ANGPPF(A1)

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

ANGCDF	=	Compute the anglit cumulative distribution function.
ANGPDF	=	Compute the anglit probability density function.
COSCDF	=	Compute the cosine cumulative distribution function.
COSPDF	=	Compute the cosine cumulative distribution function.
COSPPF	=	Compute the cosine percent point function.
NORCDF	=	Compute the normal cumulative distribution function.
NORPDF	=	Compute the normal probability density function.
NORPPF	=	Compute the normal percent point function.
UNICDF	=	Compute the uniform cumulative distribution function.
UNIPDF	=	Compute the uniform probability density function.
UNIPPF	=	Compute the uniform percent point function.

REFERENCE

"The Percent Point Function," Filliben, unpublished manuscript, 1970.

IMPLEMENTATION DATE

95/9

PROGRAM

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TITLE AUTOMATIC
PLOT ANGPPF(P) FOR P = 0 0.01 1
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