

BINPPF**PURPOSE**

Compute the binomial percent point function.

DESCRIPTION

The binomial distribution is used when there are exactly two mutually exclusive outcomes of a trial. These outcomes are often called successes and failures. The binomial probability distribution is the probability of obtaining x successes in n trials. It has the following probability density function:

$$b(x;p, n) = \binom{n}{x} p^x (1-p)^{(n-x)} \quad (\text{EQ 8-120})$$

where p is the probability of a success on a single trial and $\binom{n}{x}$ is the combinatorial function of n things taken x at a time. It has the formula:

$$\binom{n}{x} = \frac{n!}{x!(n-x)!} \quad (\text{EQ 8-121})$$

The percent point function is calculated numerically. The input value is a real number between 0 and 1.

SYNTAX

LET <y2> = BINPPF(<y1>,<p>,<n>) <SUBSET/EXCEPT/FOR qualification>

where <y1> is a variable, a number, or a parameter in the range 0 to 1;

<y2> is a variable or a parameter (depending on what <y1> is) where the computed binomial ppf value is stored;

<p> is a number or parameter that is the probability of success on a single trial (it should be between 0 and 1);

<n> is the number of trials;

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

EXAMPLES

LET A = BINPPF(0.9,0.5,50)

LET X2 = BINPPF(X1,0.7,100)

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

BINPDF	=	Compute the binomial probability density function.
BINCDF	=	Compute the binomial cumulative distribution function.
POIPDF	=	Compute the Poisson probability density function.
POICDF	=	Compute the Poisson cumulative distribution function.
POIPPF	=	Compute the Poisson percent point function.
NBCDF	=	Compute the negative binomial cumulative distribution function.
NBPDF	=	Compute the negative binomial probability density function.
NBPPF	=	Compute the negative binomial percent point function.
GEOCDF	=	Compute the geometric cumulative distribution function.
GEOPDF	=	Compute the geometric probability density function.
GEOPPF	=	Compute the geometric percent point function.

REFERENCE

"Discrete Univariate Distributions," Johnson and Kotz, Houghton Mifflin, 1969 (chapter 3).

APPLICATIONS

Data Analysis

IMPLEMENTATION DATE

94/4

PROGRAM

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XLIMITS 0 1
MAJOR XTIC NUMBER 6
MINOR XTIC NUMBER 1
XTIC DECIMAL 1
TITLE AUTOMATIC
XILABEL PROBABILITY
YILABEL NUMBER OF SUCCESSES
PLOT BINPPF(X,0.5,50) FOR X = 0 0.01 1
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