

How can I use the BETA.INV function in Excel?

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The BETA.INV function in Excel is a statistical tool that allows users to calculate the inverse of the cumulative beta distribution for a given probability. This can be useful in analyzing data and making predictions. To use this function, one must input the probability value and the alpha and beta parameters, which represent the shape and scale of the distribution curve. The result will be the corresponding value from the beta distribution. This function can be particularly helpful in financial and risk analysis, as well as in other fields where data is subject to uncertainty and variability. By utilizing the BETA.INV function in Excel, users can make more informed decisions and accurately assess the likelihood of different outcomes.

Returns the inverse of the beta cumulative probability density function (BETA.DIST).

If probability = BETA.DIST(x,...TRUE), then BETA.INV(probability,...) = x. The beta distribution can be used in project planning to model probable completion times given an expected completion time and variability.

Syntax

BETA.INV(probability,alpha,beta,,)

The BETA.INV function syntax has the following arguments:

Probability Required. A probability associated with the beta distribution.

Alpha Required. A parameter of the distribution.

Beta Required. A parameter the distribution.

A Optional. A lower bound to the interval of x.

B Optional. An upper bound to the interval of x.

Remarks

If any argument is nonnumeric, BETA.INV returns the #VALUE! error value.

If $\alpha \leq 0$ or $\beta \leq 0$, BETA.INV returns the #NUM! error value.

If probability ≤ 0 or probability > 1 , BETA.INV returns the #NUM! error value.

If you omit values for A and B, BETA.INV uses the standard cumulative beta distribution, so that A = 0 and B = 1.

Given a value for probability, BETA.INV seeks that value x such that $\text{BETA.DIST}(x, \text{alpha}, \text{beta}, \text{TRUE}, A, B) = \text{probability}$. Thus, precision of BETA.INV depends on precision of BETA.DIST.

Example

Copy the example data in the following table, and paste it in cell A1 of a new Excel worksheet. For formulas to show results, select them, press F2, and then press Enter. If you need to, you can adjust the column widths to see all the data.

Data	Description	
0.685470581	Probability associated with the beta distribution	
8	Parameter of the distribution	
10	Parameter of the distribution	
1	Lower bound	
3	Upper bound	
Formula	Description	Result
=BETA.INV(A2,A3,A4,A5,A6)	Inverse of the cumulative beta probability density function for the parameters above.	2