How can I use the BETAINV function in Excel?

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The BETAINV function in Excel is a mathematical tool that allows users to find the inverse of the cumulative distribution function (CDF) for a specific beta distribution. This function can be used to determine the input value needed to achieve a certain probability output, or to calculate the probability of a specific input value. It is particularly useful in statistical analysis and risk assessment. To use the BETAINV function, simply enter the required arguments (probability, alpha, and beta values) into the designated cells in the formula bar. The result will then be displayed in the cell where the function is inserted. This function can help users make informed decisions based on numerical data and is a valuable tool for data analysis in various fields such as finance, economics, and science.

Returns the inverse of the cumulative beta probability density function for a specified beta distribution. That is, if probability = BETADIST(x,...), then BETAINV(probability,...) = x. The beta distribution can be used in project planning to model probable completion times given an expected completion time and variability.

Important: This function has been replaced with one or more new functions that may provide improved accuracy and whose names better reflect their usage. Although this function is still available for backward compatibility, you should consider using the new functions from now on, because this function may not be available in future versions of Excel.

For more information about the new function, see BETA.INV function.

Syntax

BETAINV(probability,alpha,beta,,)

The BETAINV 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, BETAINV returns the #VALUE! error value.

If alpha ≤ 0 or beta ≤ 0, BETAINV returns the #NUM! error value.

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

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

Given a value for probability, BETAINV seeks that value x such that BETADIST(x, alpha, beta, A, B) = probability. Thus, precision of BETAINV depends on precision of BETADIST.

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**
=BETAINV(A2,A3,A4,A5,A6)	Inverse of the cumulative beta probability density function for the parameters above	2