

How can I use the GAMMAINV function in Excel?

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The GAMMAINV function in Excel is a mathematical tool that allows users to calculate the inverse of the gamma cumulative distribution function. This function can be used to determine the input value that would result in a desired probability or cumulative probability. To use the GAMMAINV function, users must input the probability, the alpha value, and the beta value. This function is helpful in various statistical and financial analyses, such as risk assessment and modeling. By utilizing the GAMMAINV function, users can efficiently and accurately solve for unknown input values in a gamma distribution.

This article describes the formula syntax and usage of the **GAMMAINV** function in Microsoft Excel.

Returns the inverse of the gamma cumulative distribution. If $p = \text{GAMMADIST}(x, \dots)$, then $\text{GAMMAINV}(p, \dots) = x$. You can use this function to study a variable whose distribution may be skewed.

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 [GAMMA.INV function](#).

Syntax

`GAMMAINV(probability,alpha,beta)`

The GAMMAINV function syntax has the following arguments:

Probability Required. The probability associated with the gamma distribution.

Alpha Required. A parameter to the distribution.

Beta Required. A parameter to the distribution. If beta = 1, GAMMAINV returns the standard gamma distribution.

Remarks

If any argument is text, GAMMAINV returns the #VALUE! error value.

If probability < 0 or probability > 1, GAMMAINV returns the #NUM! error value.

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

Given a value for probability, GAMMAINV seeks that value x such that $\text{GAMMADIST}(x, \text{alpha}, \text{beta}, \text{TRUE}) = \text{probability}$. Thus, precision of GAMMAINV depends on precision of GAMMADIST. GAMMAINV uses an iterative search technique. If the search has not converged after 100 iterations, the function returns the #N/A error value.

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	
0.068094	Probability associated with the gamma distribution	
9	Alpha parameter to the distribution	
2	Beta parameter to the distribution	
Formula	Description	Result
=GAMMAINV(A2,A3,A4)	Inverse of the gamma cumulative distribution for the probability, alpha, and beta arguments in A2, A3, and A4.	10.0000112