How can I use the NORMINV function in Excel to calculate the inverse of a normal cumulative distribution?

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The NORMINV function in Excel is a mathematical tool that allows users to calculate the inverse of a normal cumulative distribution. This function takes in three arguments: probability, mean, and standard deviation, and returns the corresponding value from the normal distribution curve. By using this function, users can easily calculate the value at a specific point on the curve, which can be useful in various statistical and financial analyses. It simplifies the process of calculating the inverse of a normal distribution and provides accurate results, making it a valuable tool for users working with data sets.

Returns the inverse of the normal cumulative distribution for the specified mean and standard deviation.

Note: 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 NORM.INV function.

Syntax

NORMINV(probability,mean,standard_dev)

The NORMINV function syntax has the following arguments:

Probability Required. A probability corresponding to the normal distribution.

Mean Required. The arithmetic mean of the distribution.

Standard_dev Required. The standard deviation of the distribution.

Remarks

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

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

If standard_dev ≤ 0, NORMINV returns the #NUM! error value.

If mean = 0 and standard_dev = 1, NORMINV uses the standard normal distribution (see NORMSINV).

Given a value for probability, NORMINV seeks that value x such that NORMDIST(x, mean,

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standard_dev, TRUE) = probability. Thus, precision of NORMINV depends on precision of NORMDIST. NORMINV 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**	
0.908789	Probability corresponding to the normal distribution	
40	Arithmetic mean of the distribution	
1.5	Standard deviation of the distribution	
Formula	**Description**	**Result**
=NORMINV(A2,A3,A4)	Inverse of the normal cumulative distribution for the terms above	42.000002

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