How can I use the NORM.INV function in Excel to find the inverse of a given normal distribution?

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June 30, 2024

The NORM.INV function in Excel is a mathematical tool that can be used to find the inverse of a given normal distribution. This function takes in the probability associated with a specific value in a normal distribution and returns the corresponding value for that probability. This can be useful in various statistical and financial analysis, as it allows users to determine the cut-off points for a particular probability level. To use the NORM.INV function, simply provide the probability value and the mean and standard deviation of the normal distribution as inputs. The function will then calculate and return the inverse value. This provides a quick and efficient way to find the inverse of a normal distribution in Excel, making it a valuable tool for data analysis.

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

Syntax

NORM.INV(probability,mean,standard_dev)

The NORM.INV 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, NORM.INV returns the #VALUE! error value.

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

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

If mean = 0 and standard_dev = 1, NORM.INV uses the standard normal distribution (see NORMS.INV).

Given a value for probability, NORM.INV seeks that value x such that NORM.DIST(x, mean, standard_dev, TRUE) = probability. Thus, precision of NORM.INV depends on precision of NORM.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**	
0.908789	Probability corresponding to the normal distribution	
40	Arithmetic mean of the distribution	
1.5	Standard deviation of the distribution	
Formula	**Description**	**Result**
=NORM.INV(A2,A3,A4)	Inverse of the normal cumulative distribution for the terms above (42)	42.000002