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

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The NORM.S.INV function in Excel is a statistical tool used to calculate the inverse of a normal distribution. By inputting the probability value associated with a specific data point, the function will return the corresponding value on the normal distribution curve. This can be useful in various data analysis and modeling situations, allowing users to determine the probability of a particular value occurring in a normal distribution. The NORM.S.INV function is a simple and efficient way to perform this calculation in Excel, providing accuracy and convenience for statistical analysis.

Returns the inverse of the standard normal cumulative distribution. The distribution has a mean of zero and a standard deviation of one.

Syntax

NORM.S.INV(probability)

The NORM.S.INV function syntax has the following arguments:

Probability Required. A probability corresponding to the normal distribution.

Remarks

If probability is nonnumeric, NORMS.INV returns the #VALUE! error value.

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

Given a value for probability, NORM.S.INV seeks that value z such that NORM.S.DIST(z,TRUE) = probability. Thus, precision of NORM.S.INV depends on precision of NORM.S.DIST. NORM.S.INV uses an iterative search technique.

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.

Formula	Description	Live Result
=NORM.S.INV(0.908789)	Inverse of the standard normal cumulative distribution, with a probability of 0.908789	1.3333347