How do I use the NORM.S.DIST function in Excel?

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The NORM.S.DIST function in Excel is a statistical function that calculates the standard normal cumulative distribution. This function is useful for analyzing data that follows a normal distribution, and can be used to find the probability of a data point falling within a certain range. To use this function, simply enter the formula "=NORM.S.DIST()" into a cell and input the required parameters, such as the data point and the mean and standard deviation of the data set. This will return the probability of that data point occurring within the normal distribution. The NORM.S.DIST function is a valuable tool for analyzing and interpreting data in Excel.

Returns the standard normal distribution (has a mean of zero and a standard deviation of one).

Use this function in place of a table of standard normal curve areas.

Syntax - Standard Normal Distribution

NORM.S.DIST(z,cumulative)

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

Z Required. The value for which you want the distribution.

Cumulative Required. Cumulative is a logical value that determines the form of the function. If cumulative is TRUE, NORMS.DIST returns the cumulative distribution function; if FALSE, it returns the probability mass function.

Remarks

If z is nonnumeric, NORM.S.DIST returns the #VALUE! error value.

The equation for the standard normal density function is:

$$f(z) = \frac{1}{\sqrt{2\pi}} e^{-\frac{z^2}{2}}$$

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	Result
=NORM.S.DIST(1.333333,TRUE)	Normal cumulative distribution function at 1.333333	0.908788726
=NORM.S.DIST(1.333333,FALSE)	Normal probability distribution function at 1.333333	0.164010148