

Excel provides an extensive range of Statistical Functions, that perform calculations from basic mean, median & mode to the more complex statistical distribution and probability tests.

The Excel Statistical functions are all listed in the tables below, grouped into categories, to help you to easily find the function you need. Selecting a function name will take you to a full description of the function, with examples of use and advice on common errors.

Note that some of the Statistical functions were introduced in recent versions of Excel, and so are not available in earlier versions.

## Excel Statistical Functions

Count & Frequency		Finding the Largest & Smallest Values	
<a href="#">COUNT</a>	Returns the number of numerical values in a supplied set of cells or values	<a href="#">MAX</a>	Returns the largest value from a list of supplied numbers
<a href="#">COUNTA</a>	Returns the number of non-blanks in a supplied set of cells or values	<a href="#">MAXA</a>	Returns the largest value from a list of supplied values, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1
<a href="#">COUNTBLANK</a>	Returns the number of blank cells in a supplied range	<a href="#">MAXIFS</a>	Returns the largest value from a subset of values in a list that are specified according to one or more criteria. <i>(New in Excel 2016 - not available in Excel 2016 for Mac)</i>
<a href="#">COUNTIF</a>	Returns the number of cells (of a supplied range), that satisfy a given criteria	<a href="#">MIN</a>	Returns the smallest value from a list of supplied numbers
<a href="#">COUNTIFS</a>	Returns the number of cells (of a supplied range), that satisfy a set of given criteria	<a href="#">MINA</a>	Returns the smallest value from a list of supplied values, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1

*(New in Excel 2007)*

## FREQUENCY

Returns an array showing the number of values from a supplied array, which fall into specified ranges

### Permutations

## PERMUT

Returns the number of permutations for a given number of objects

## PERMUTATIONA

Returns the number of permutations for a given number of objects (with repetitions) that can be selected from the total objects *(New in Excel 2013)*

### Percentiles, Quartiles & Rank

## PERCENTILE

Returns the K'th percentile of values in a supplied range, where K is in the range 0 - 1 (inclusive)  
*(Replaced by [Percentile.Inc](#))*

## MINIFS

Returns the smallest value from a subset of values in a list that are specified according to one or more criteria. *(New in Excel 2016 - not available in Excel 2016 for Mac)*

## LARGE

Returns the Kth LARGEST value from a list of supplied numbers, for a given value K

## SMALL

Returns the Kth SMALLEST value from a list of supplied numbers, for a given value K

### Confidence Intervals

## CONFIDENCE

Returns the confidence interval for a population mean, using a normal distribution *(Replaced by [Confidence.Norm](#) function in Excel 2010)*

## CONFIDENCE.NORM

Returns the confidence interval for a population mean, using a normal distribution *(New in Excel 2010 - replaces the Confidence function)*

## CONFIDENCE.T

Returns the confidence interval for a population mean, using a Student's t distribution *(New in Excel 2010)*

### Distribution & Tests of Probability

*function in Excel 2010)*

#### PERCENTILE.INC

Returns the K'th percentile of values in a supplied range, where K is in the range 0 - 1 (inclusive) *(New in Excel 2010 - replaces the Percentile function)*

#### PERCENTILE.EXC

Returns the K'th percentile of values in a supplied range, where K is in the range 0 - 1 (exclusive) *(New in Excel 2010)*

#### QUARTILE

Returns the specified quartile of a set of supplied numbers, based on percentile value 0 - 1 (inclusive) *(Replaced by Quartile.Inc function in Excel 2010)*

#### QUARTILE.INC

Returns the specified quartile of a set of supplied numbers, based on percentile value 0 - 1

#### BETADIST

Returns the cumulative beta probability density function *(Replaced by Beta.Dist function in Excel 2010)*

#### BETA.DIST

Returns the cumulative beta distribution function or the beta probability density function *(New in Excel 2010 - replaces the Betadist function)*

#### BETA.INV

Returns the inverse of the cumulative beta probability density function *(Replaced by Beta.Inv function in Excel 2010)*

#### BETA.INV

Returns the inverse of the cumulative beta probability density function *(New in Excel 2010 - replaces the Betainv function)*

#### BINOMDIST

Returns the individual term binomial distribution probability *(Replaced by Binom.Dist function in Excel 2010)*

#### BINOM.DIST

Returns the individual term binomial distribution probability *(New in Excel 2010 - replaces the Binomdist function)*

#### BINOM.DIST.RANGE

Returns the probability of a trial result using a binomial distribution *(New in Excel 2013)*

#### NEGBINOMDIST

Returns the negative binomial distribution *(Replaced by Negbinom.Dist function in Excel 2010)*

(inclusive) *(New in Excel 2010 - replaces the Quartile function)*

#### [QUARTILE.EXC](#)

Returns the specified quartile of a set of supplied numbers, based on percentile value 0 - 1 (exclusive) *(New in Excel 2010)*

#### [RANK](#)

Returns the statistical rank of a given value, within a supplied array of values *(Replaced by Rank.Eq function in Excel 2010)*

#### [RANK.EQ](#)

Returns the Mode (the most frequently occurring value) of a list of supplied numbers (if more than one value has same rank, the top rank of that set is returned) *(New in Excel 2010 - replaces the Rank function)*

#### [RANK.AVG](#)

Returns the statistical rank of a given value, within a supplied

#### [NEGBINOM.DIST](#)

Returns the negative binomial distribution *(New in Excel 2010 - replaces the Negbinomdist function)*

#### [CRITBINOM](#)

Returns the smallest value for which the cumulative binomial distribution is greater than or equal to a criterion value *(Replaced by Binom.Inv function in Excel 2010)*

#### [BINOM.INV](#)

Returns the smallest value for which the cumulative binomial distribution is greater than or equal to a criterion value *(New in Excel 2010 - replaces the Critbinom function)*

#### [CHIDIST](#)

Returns the right-tailed probability of the chi-squared distribution *(Replaced by Chisq.Dist.Rt function in Excel 2010)*

#### [CHISO.DIST.RT](#)

Returns the right-tailed probability of the chi-squared distribution *(New in Excel 2010 - replaces the Chidist function)*

#### [CHISO.DIST](#)

Returns the chi-squared distribution (probability density or cumulative distribution function) *(New in Excel 2010)*

#### [CHIINV](#)

Returns the inverse of the right-tailed probability of the chi-squared distribution *(Replaced by Chisq.Inv.Rt function in Excel 2010)*

array of values (if more than one value has same rank, the average rank is returned) *(New in Excel 2010)*

#### [PERCENTRANK](#)

Returns the rank of a value in a data set, as a percentage (0 - 1 inclusive) *(Replaced by Percentrank.Inc function in Excel 2010)*

#### [PERCENTRANK.INC](#)

Returns the rank of a value in a data set, as a percentage (0 - 1 inclusive) *(New in Excel 2010 - replaces the Percentrank function)*

#### [PERCENTRANK.EXC](#)

Returns the rank of a value in a data set, as a percentage (0 - 1 exclusive) *(New in Excel 2010)*

### Averages

#### [AVERAGE](#)

Returns the Average of a list of supplied numbers

#### [CHISQ.INV.RT](#)

Returns the inverse of the right-tailed probability of the chi-squared distribution *(New in Excel 2010 - replaces the Chiinv function)*

#### [CHISQ.INV](#)

Returns the inverse of the left-tailed probability of the chi-squared distribution *(New in Excel 2010)*

#### [CHITEST](#)

Returns the chi-squared statistical test for independence *(Replaced by Chisq.Test function in Excel 2010)*

#### [CHISQ.TEST](#)

Returns the chi-squared statistical test for independence *(New in Excel 2010 - replaces the Chitest function)*

#### [CORREL](#)

Returns the correlation coefficient between two sets of values

#### [EXPONDIST](#)

Returns the exponential distribution *(Replaced by Expon.Dist function in Excel 2010)*

#### [EXPON.DIST](#)

Returns the exponential distribution *(New in Excel 2010 - replaces the Expondist function)*

#### [FDIST](#)

Returns the right-tailed F probability distribution for two data sets *(Replaced by F.Dist.Rt function in Excel 2010)*

### [AVERAGEA](#)

Returns the Average of a list of supplied numbers, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1

### [AVERAGEIF](#)

Calculates the Average of the cells in a supplied range, that satisfy a given criteria *(New in Excel 2007)*

### [AVERAGEIFS](#)

Calculates the Average of the cells in a supplied range, that satisfy multiple criteria *(New in Excel 2007)*

### [MEDIAN](#)

Returns the Median (the middle value) of a list of supplied numbers

### [MODE](#)

Returns the Mode (the most frequently occurring value) of a list of supplied numbers *(Replaced by Mode.Sngl)*

### [F.DIST.RT](#)

Returns the right-tailed F probability distribution for two data sets *(New in Excel 2010 - replaces the Fdist function)*

### [F.DIST](#)

Returns the F probability distribution (probability density or cumulative distribution function) *(New in Excel 2010)*

### [FINV](#)

Returns the inverse of the right-tailed F probability distribution for two data sets *(Replaced by F.Inv.Rt function in Excel 2010)*

### [F.INV.RT](#)

Returns the inverse of the right-tailed F probability distribution for two data sets *(New in Excel 2010 - replaces the Finv function)*

### [F.INV](#)

Returns the inverse of the Cumulative F distribution *(New in Excel 2010)*

### [FISHER](#)

Returns the Fisher transformation

### [FISHERINV](#)

Returns the inverse of the Fisher transformation

### [FTEST](#)

Returns the result of an F-Test for 2 supplied data sets *(Replaced by F.Test function in Excel 2010)*

### [F.TEST](#)

Returns the result of an F-Test for 2 supplied data sets *(New in Excel 2010 - replaces the Ftest function)*

*function in Excel 2010)*

#### MODE.SNGL

Returns the Mode (the most frequently occurring value) of a list of supplied numbers (*New in Excel 2010 - replaces the Mode function*)

#### MODE.MULT

Returns a vertical array of the most frequently occurring values in an array or range of data (*New in Excel 2010*)

#### GEOMEAN

Returns the geometric mean of a set of supplied numbers

#### HARMEAN

Returns the harmonic mean of a set of supplied numbers

#### TRIMMEAN

Returns the mean of the interior of a supplied set of values

### Deviation & Variance

#### GAMMADIST

Returns the gamma distribution (*Replaced by Gamma.Dist function in Excel 2010*)

#### GAMMA.DIST

Returns the gamma distribution (*New in Excel 2010 - replaces the Gammadist function*)

#### GAMMAINV

Returns the inverse gamma cumulative distribution (*Replaced by Gamma.Inv function in Excel 2010*)

#### GAMMA.INV

Returns the inverse gamma cumulative distribution (*New in Excel 2010 - replaces the Gammainv function*)

#### GAMMA

Return the gamma function value for a supplied number (*New in Excel 2013*)

#### GAMMALN

Calculates the natural logarithm of the gamma function for a supplied value

#### GAMMALN.PRECISE

Returns the natural logarithm of the gamma function for a supplied value (*New in Excel 2010*)

#### GAUSS

Calculates the probability that a member of a standard normal population will fall between the mean and z standard deviations from the mean (*New in Excel 2013*)

#### HYPGEOMDIST

Returns the hypergeometric distribution (*Replaced by Hypgeom.Dist function in Excel 2010*)

[AVEDEV](#)

Returns the average of the absolute deviations of data points from their mean

[DEVSQ](#)

Returns the sum of the squares of the deviations of a set of data points from their sample mean

[STDEV](#)

Returns the standard deviation of a supplied set of values (which represent a sample of a population) *(Replaced by Stdev.S function in Excel 2010)*

[STDEV.S](#)

Returns the standard deviation of a supplied set of values (which represent a sample of a population) *(New in Excel 2010 - replaces the Stdev function)*

[STDEVA](#)

Returns the standard deviation of a supplied set of values (which represent a

[HYPGEOM.DIST](#)

Returns the hypergeometric distribution *(New in Excel 2010 - replaces the Hypgeomdist function)*

[KURT](#)

Returns the kurtosis of a data set

[LOGNORMDIST](#)

Returns the cumulative log-normal distribution *(Replaced by Lognorm.Dist function in Excel 2010)*

[LOGNORM.DIST](#)

Returns the log-normal probability density function or the cumulative log-normal distribution *(New in Excel 2010 - replaces the Lognormdist function)*

[LOGINV](#)

Returns the inverse of the lognormal distribution *(Replaced by Lognorm.Inv function in Excel 2010)*

[LOGNORM.INV](#)

Returns the inverse of the lognormal distribution *(New in Excel 2010 - replaces the Loginv function)*

[NORMDIST](#)

Returns the normal cumulative distribution *(Replaced by Norm.Dist function in Excel 2010)*

[NORM.DIST](#)

Returns the normal cumulative distribution *(New in Excel 2010 - replaces the Normdist function)*

[NORMINV](#)

Returns the inverse of the normal cumulative distribution *(Replaced by*



sample of a population), counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1

### STDEVP

Returns the standard deviation of a supplied set of values (which represent an entire population) *(Replaced by Stdev.P function in Excel 2010)*

### STDEV.P

Returns the standard deviation of a supplied set of values (which represent an entire population) *(New in Excel 2010 - replaces the Stdevp function)*

### STDEVPA

Returns the standard deviation of a supplied set of values (which represent an entire population), counting text and

*Norm.Inv function in Excel 2010)*

### NORM.INV

Returns the inverse of the normal cumulative distribution *(New in Excel 2010 - replaces the Norminv function)*

### NORMSDIST

Returns the standard normal cumulative distribution *(Replaced by Norm.S.Dist function in Excel 2010)*

### NORM.S.DIST

Returns the standard normal cumulative distribution *(New in Excel 2010 - replaces the Normsdist function)*

### NORMSINV

Returns the inverse of the standard normal cumulative distribution *(Replaced by Norm.S.Inv function in Excel 2010)*

### NORM.S.INV

Returns the inverse of the standard normal cumulative distribution *(New in Excel 2010 - replaces the Normsinv function)*

### PEARSON

Returns the Pearson product moment correlation coefficient

### RSQ

Returns the square of the Pearson product moment correlation coefficient

### PHI

Returns the value of the density function for a standard normal distribution, for a supplied number *(New in Excel 2013)*

the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1

#### VAR

Returns the variance of a supplied set of values (which represent a sample of a population) *(Replaced by Var.S function in Excel 2010)*

#### VAR.S

Returns the variance of a supplied set of values (which represent a sample of a population) *(New in Excel 2010 - replaces the Var function)*

#### VARA

Returns the variance of a supplied set of values (which represent a sample of a population), counting text and the logical value FALSE as the value 0 and counting the logical value

#### POISSON

Returns the Poisson distribution *(Replaced by Poisson.Dist function in Excel 2010)*

#### POISSON.DIST

Returns the Poisson distribution *(New in Excel 2010 - replaces the Poisson function)*

#### PROB

Returns the probability that values in a supplied range are within given limits

#### SKEW

Returns the skewness of a distribution

#### SKEW.P

Returns the skewness of a distribution based on a population *(New in Excel 2013)*

#### STANDARDIZE

Returns a normalized value

#### TDIST

Returns the Student's T-distribution *(Replaced by T.Dist.2t & T.Dist.Rt functions in Excel 2010)*

#### T.DIST.2T

Returns the two-tailed Student's T-distribution *(New in Excel 2010 - replaces the Tdist function)*

#### T.DIST.RT

Returns the right-tailed Student's T-distribution *(New in Excel 2010 - replaces the Tdist function)*

#### T.DIST

Returns the Student's T-distribution (probability density or cumulative distribution function) *(New in Excel 2010)*

<a href="#"><u>VARP</u></a>	<p>TRUE as the value 1</p> <p>Returns the variance of a supplied set of values (which represent an entire population) <i>(Replaced by Var.P function in Excel 2010)</i></p>	<a href="#"><u>TINV</u></a>	Returns the two-tailed inverse of the Student's T-distribution <i>(Replaced by T.Inv.2t function in Excel 2010)</i>
<a href="#"><u>VAR.P</u></a>	<p>Returns the variance of a supplied set of values (which represent an entire population) <i>(New in Excel 2010 - replaces the Varp function)</i></p>	<a href="#"><u>T.INV.2T</u></a>	Returns the two-tailed inverse of the Student's T-distribution <i>(New in Excel 2010 - replaces the Tinv function)</i>
<a href="#"><u>VARPA</u></a>	<p>Returns the variance of a supplied set of values (which represent an entire population), counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1</p>	<a href="#"><u>T.INV</u></a>	Returns the left-tailed inverse of the Student's T-distribution <i>(New in Excel 2010)</i>
<a href="#"><u>COVAR</u></a>	Returns population covariance (i.e.	<a href="#"><u>TTEST</u></a>	Returns the probability associated with a Student's T-Test <i>(Replaced by T.Test function in Excel 2010)</i>
		<a href="#"><u>T.TEST</u></a>	Returns the probability associated with a Student's T-Test <i>(New in Excel 2010 - replaces the Ttest function)</i>
		<a href="#"><u>WEIBULL</u></a>	Returns the Weibull distribution <i>(Replaced by Weibull.Dist function in Excel 2010)</i>
		<a href="#"><u>WEIBULL.DIST</u></a>	Returns the Weibull distribution <i>(New in Excel 2010 - replaces the Weibull function)</i>
		<a href="#"><u>ZTEST</u></a>	Returns the one-tailed probability value of a z-test <i>(Replaced by Z.Test function in Excel 2010)</i>
		<a href="#"><u>Z.TEST</u></a>	Returns the one-tailed probability value of a z-test

the average of the products of deviations for each pair within two supplied data sets)  
*(Replaced by Covariance.P function in Excel 2010)*

*(New in Excel 2010 - replaces the Ztest function)*

#### COVARIANCE.P

Returns population covariance (i.e. the average of the products of deviations for each pair within two supplied data sets) *(New in Excel 2010 - replaces the Covar function)*

#### COVARIANCE.S

Returns sample covariance (i.e. the average of the products of deviations for each pair within two supplied data sets) *(New in Excel 2010)*

### Trend Line Functions

#### FORECAST

Predicts a future point on a linear trend line fitted to a supplied set of x- and y-values *(Replaced*

by  
*Forecast.Linear  
function in Excel  
2016)*

#### FORECAST.ETS

Uses an exponential smoothing algorithm to predict a future value on a timeline, based on a series of existing values  
*(New in Excel 2016 - not available in Excel 2016 for Mac)*

#### FORECAST.ETS.CONFINT

Returns a confidence interval for a forecast value at a specified target date  
*(New in Excel 2016 - not available in Excel 2016 for Mac)*

#### FORECAST.ETS.SEASONALITY

Returns the length of the repetitive pattern Excel detects for a specified time series  
*(New in Excel 2016 - not available in Excel 2016 for Mac)*

#### FORECAST.ETS.STAT

Returns a statistical value relating to a time series forecasting  
*(New in Excel*

*2016 - not available in Excel 2016 for Mac)*

#### FORECAST.LINEAR

Predicts a future point on a linear trend line fitted to a supplied set of x- and y-values (*New in Excel 2016 (not Excel 2016 for Mac) - replaces the Forecast function)*

#### INTERCEPT

Calculates the best fit regression line, through a supplied series of x- and y- values and returns the value at which this line intercepts the y-axis

#### LINEST

Returns statistical information describing the trend of the line of best fit, through a supplied series of x- and y- values

#### SLOPE

Returns the slope of the linear regression line through a

supplied series of  
x- and y- values

#### TREND

Calculates the  
trend line  
through a given  
set of y-values  
and returns  
additional y-  
values for a  
supplied set of  
new x-values

#### GROWTH

Returns numbers  
in a exponential  
growth trend,  
based on a set of  
supplied x- and y-  
values

#### LOGEST

Returns the  
parameters of an  
exponential  
trend for a  
supplied set of x-  
and y- values

#### STEYX

Returns the  
standard error of  
the predicted y-  
value for each x  
in the regression  
line for a set of  
supplied x- and y-  
values

For further details of the Excel Statistical functions, see the [Microsoft Office Website](#).