



Database and List Management Functions	
DAVERAGE	Indicates the average of the values that meet the specified criteria.
DCOUNT	Counts the number of cells containing numbers that meet the specified criteria.
DCOUNTA	Counts nonblank cells containing numbers or text that meet the specified criteria.
DGET	Returns a single value that meets the specified criteria.
DMAX	Extracts the highest value that meets the specified criteria.
DMIN	Extracts the lowest value that meets the specified criteria.
DPRODUCT	Returns the product of the values that meet the specified criteria.
DSTDEV	Estimates the standard deviation of a population, based on a sample of selected entries from the database.
DSTDEVP	Returns the calculation of the standard deviation of a population, based on the sum of the whole population.
DSUM	Returns the total of the values that meet the specified criteria.
DVAR	Estimates the variance of a sample population based on the values that meet the specified criteria.
DVARP	Returns the calculation of the true variance of an entire population based on the values that meet the specified criteria.
Date and Time Functions	
DATE	Returns the serial number that represents a date.
DATEDIF	Returns the difference of two dates in years, months or days.
DATEVALUE	Converts date text to a DATEVALUE serial number.
DAY	Returns the corresponding day of the month serial number or date text from 1 to 31.
DAYS360	Returns the number of days between two set dates based on a 360-day year.
HOUR	Returns the hour as a serial number integer between 0 and 23.
MINUTE	Returns the serial number that corresponds to the minute.
MONTH	Returns the corresponding serial number of the month of a date between 1 and 12.
NOW	Returns the current date and time in the form of a serial number.
SECOND	Returns the seconds portion of a serial time value.
TIME	Returns the decimal value of a given time.
TIMEVALUE	Returns the decimal number for a given time.
TODAY	Returns the current date as a serial number.
WEEKDAY	Returns the corresponding day of the week as a serial number.
YEAR	Returns the corresponding year as a serial number in the form of an integer.
Financial Functions	
DB	Returns the asset depreciation for a period using the fixed declining balance method.
DDB	Returns the asset depreciation for a period using the double-declining balance method or another specified method.
FV	Returns the future value of an investment that makes payments as a lump sum or as a series of equal periodic payments.
IPMT	Returns the interest for a period of time based on an investment with periodic constant payments and a constant interest rate.
IRR	Returns the internal rate of return for a series of cash flows represented by numbers in the form of values.
ISPMT	Calculates the interest paid during a defined period of an investment.
MIRR	Returns a modified internal rate of return for several periodic cash flows.
NPER	Returns the total number of periods for an investment. This is based on a periodic constant payment and a constant interest rate.
NPV	Calculates the net present value of an investment from the discount rate and several future payments and income.
PMT	Calculates the loan payment for a loan based on constant payments and constant interest rates.
PPMT	Returns the principal payment for a period of an investment based on periodic constant payments and a constant interest rate.
PV	Returns the present value based on an investment.
RATE	Returns per period the interest of an annuity.
SLN	Returns the straight-line depreciation on an asset.
SYD	Based on a specified period, SYD returns the sum-of-years' digits depreciation of an asset.
VDB	For a period you specify, returns the depreciation of an asset.
Information Functions	
ERROR.TYPE	Returns the corresponding number value associated with an error type in Microsoft Excel.
ISBLANK	Returns TRUE if the cell is empty, FALSE if it contains data.
ISERR	Returns TRUE if value contains any error value except #N/A, FALSE if it does not.
ISERROR	Returns TRUE if value contains any error value (including #N/A), FALSE if it does not.
IFERROR	Returns a value you specify if a formula evaluates to an error; otherwise, returns the result of the formula
ISLOGICAL	Returns TRUE if value is a logical value, FALSE if it is not.
ISNA	Returns TRUE if value is #N/A, FALSE if it is not.
ISNONTEXT	Returns TRUE if value is not text, FALSE if it is.
ISNUMBER	Returns TRUE if value is a number, FALSE if it is not.
ISREF	Returns TRUE if value is a reference, FALSE if it is not.
ISTEXT	Returns TRUE if value is text, FALSE if it is not.
N	Returns a value converted to a number.
NA	An alternative representation of the error value #N/A.
TYPE	Determines the type of value in a cell.
Logical Functions	
AND	Returns TRUE if all the arguments are TRUE in the formula, and FALSE if any one argument is FALSE.
FALSE	Returns the value FALSE. May be typed directly into the cell as "FALSE".
IF	Returns a value if one condition is TRUE and returns another value if the condition is FALSE.
NOT	Returns the reverse value of its arguments; TRUE becomes FALSE and FALSE becomes TRUE.
OR	Returns FALSE if all arguments are FALSE, and TRUE if at least one argument is TRUE.
TRUE	Returns the value TRUE. May be typed directly into the cell as "TRUE".
Lookup and Reference Functions	
ADDRESS	Given specified row and column numbers, creates a cell address as text.
AREAS	Returns the number of areas based on a reference.
CHOOSE	Returns an item from a list of values..
COLUMN	Returns the column number(s) based on a given reference.
COLUMNS	Returns the number of columns based on an array or reference.
HLOOKUP	Searches for a specified value in an array or a table's top row.
HYPERLINK	Creates a shortcut to jump to a document stored on a network server.
INDEX	Returns the value of an element selected by the row number and column letter indexes.
INDIRECT	Returns the contents of a cell using its reference.

LOOKUP	Looks in the first row or column of a range or array, and returns the specified value from the same position in the last row or column of the range or array.
MATCH	Returns the relative position of an item in an array that matches a specified value in a specified order, or the position of an item.
OFFSET	Returns a reference to a range that is a specific number of rows and columns from a cell or range of cells.
ROW	Returns the row number based on a reference.
ROWS	Returns the number of rows in a reference or array.
TRANSPOSE	Returns a horizontal range of cells as vertical or vice versa.
VLOOKUP	Searches for a value in the leftmost column of a table and returns a value from the same row in a column number that you specify.

### Math and Trigonometry Functions

ABS	Returns the absolute value of a number.
ACOS	Returns the arccosine of a number in radians in the range 0 to pi.
ACOSH	Returns the inverse hyperbolic cosine of a number.
ASIN	Returns the arcsine of a number in radians in the range -pi/2 to pi/2.
ASINH	Returns the inverse hyperbolic sine of a number.
ATAN	Returns the arctangent of a number in radians in the range -pi/2 to pi/2
ATAN2	Returns the four-quadrant arctangent of the specified x- and y- coordinates in radians between -pi and pi excluding -pi. A positive result represents a counterclockwise angle from the x-axis, a negative result represents a clockwise angle.
ATANH	Returns the inverse hyperbolic tangent of a number.
CEILING	Returns a number rounded up, away from zero, to the nearest multiple of significance.
COMBIN	Returns the number of combinations for a given number of items.
COS	Returns the cosine of the given angle.
COSH	Returns the hyperbolic cosine of a number.
DEGREES	Converts radians into degrees.
EVEN	Returns a number rounded up to the next even integer for positive integers and rounded down to the next even integer for negative numbers.
EXP	Returns e (2.71828182845804) raised to the power of a specified number.
FACT	Returns the factorial of a number.
FLOOR	Returns a number rounded down, toward zero, to the nearest multiple of significance.
INT	Rounds a number down to the nearest integer.
LN	Returns the natural (base e) logarithm of a number.
LOG	Returns the logarithm of a number of the base you specify.
LOG10	Returns the base-10 logarithm of a number.
MDETERM	Returns the matrix determinant of an array.
MINVERSE	Returns the inverse matrix for the matrix stored in an array.
MMULT	Returns the matrix product of two arrays. The result is an array with the same number of rows as array1 and the same number of columns as array2.
MOD	Returns the remainder of a division operation (modulus).
ODD	Returns a number rounded up away from zero to the nearest odd integer.
PI	Returns the approximate number 3.14159265358979, the mathematical constant pi, accurate to 15 digits.
POWER	Returns the result of a specified number raised to a specified power.
PRODUCT	Multiplies all the numbers given as arguments and returns the product.
RADIANS	Converts degrees to radians.
RAND	Returns an evenly distributed random number greater than or equal to 0 and less than 1. A new random number is returned every time the worksheet is calculated.
ROMAN	Converts an Arabic numeral to Roman, as text.
ROUND	Round a number to a specified number of digits.
ROUNDDOWN	Rounds a number down, towards zero.
ROUNDUP	Rounds a number up, away from zero.
SIGN	Determines the sign of a number. Returns 1 if the value is positive, 0 if the value is 0, and -1 if the value is negative.
SIN	Returns the sine of a given angle.
SINH	Returns the hyperbolic sine of a number.
SQRT	Returns a positive square root.
SUBTOTAL	Returns a subtotal in a list or database.
SUM	Adds all the numbers in a range of cells.
SUMIF	Adds the cells specified by a certain criteria.
SUMPRODUCT	Multiplies corresponding components in the given arrays, and returns the sum of those products.
SUMSQ	Returns the sum of the squares of the arguments.
SUMX2MY2	Returns the sum of the difference of squares of corresponding values in two arrays.
SUMX2PY2	Returns the sum of the sum of squares of corresponding values in two arrays.
SUMXY2	Returns the sum of squares of differences of corresponding values in two arrays.
TAN	Returns the tangent of the given angle.
TANH	Returns the hyperbolic tangent of a number.
TRUNC	Truncates a number to an integer by removing the fractional part of a number.

### Statistical Functions

AVEDEV	Returns the average of the absolute deviations of data points from their mean.
AVERAGE	Returns the average of its arguments.
AVERAGEA	Returns the average of the values in its list of arguments including text and logical values.
BETADIST	Returns the cumulative beta probability density function.
BETAINV	Returns the inverse of the cumulative beta probability density function.
BINOMDIST	Returns the individual term binomial distribution probability.
CHIDIST	Returns the one-tailed probability of the chi-squared ( $X^2$ ) distribution; the area in the right tail under the chi-squared distribution curve.
CHIINV	Returns the inverse of the one-tailed probability of the chi-squared ( $X^2$ ) distribution.
CHITEST	Returns the test for independence of the characteristics in a table.
CONFIDENCE	Returns the confidence interval for a population mean.
CORREL	Returns the correlation coefficient between two data sets.
COUNT	Counts the number of cells that contain numbers (including dates and formulas that evaluate to numbers) within the list of arguments.
COUNTA	Counts the number of cells that are not empty.
COUNTBLANK	Counts the empty cells in a specified range.
COUNTIF	Counts the number of cells in a range that meet a given criteria.
COVAR	Returns the covariance, the average of products of deviations, for each data point pair.
CRITBINOM	Returns the minimum number yields a binomial distribution less than or equal to the specified criteria
DEVSQ	Returns the sum of the squares of deviations of a data set from their sample mean.
EXPONDIST	Returns the exponential distribution.
FDIST	Returns the F probability distribution.
FINV	Returns the inverse of the F probability distribution.
FISHER	Returns the Fisher transformation at x.

FISHERINV	Returns the inverse of the Fisher transformation at y.
FORECAST	Calculates or predicts a future value by using existing values.
FREQUENCY	Calculates how often values occur within a range of values and then returns a vertical array of numbers.
FTEST	Returns the result of an F-test.
GAMMADIST	Returns the gamma distribution.
GAMMAINV	Returns the inverse of the gamma cumulative distribution.
GAMMALN	Returns the natural logarithm of the gamma function.
GEOMEAN	Returns the geometric mean of an array or range of positive data.
GROWTH	Calculates predicted exponential growth by using existing data.
HARMEAN	Returns the harmonic mean of a data set.
HYPGEOMDIST	Returns the hypergeometric distribution.
INTERCEPT	Calculates the point at which a line will intersect the y-axis by using existing x and y values.
KURT	Returns the Kurtosis of a data set.
LARGE	Returns the k-th largest value in a data set.
LINEST	Calculates a straight line that best fits your data using the least squares method.
LOGEST	Calculates an exponential curve that fits your data and returns an array of values that describes the curve.
LOGINV	Returns the inverse of the lognormal cumulative distribution function of x, where ln(x) is normally distributed with parameters mean and standard deviation.
LOGNORMDIST	Returns the cumulative lognormal distribution of x, where ln(x) is normally distributed with parameters mean and standard deviation.
MAX	Returns the largest value in a set of values.
MAXA	Returns the largest value in a set of values including text and logical values.
MEDIAN	Returns the median of the given numbers.
MIN	Returns the smallest value in a set of values.
MINA	Returns the smallest value in a set of values including text and logical values.
MODE	Returns the most frequently occurring, or repetitive, number in an array or range of data.
NEGBINOMDIST	Returns the negative binomial distribution.
NORMDIST	Returns the normal cumulative distribution for the specified mean and standard deviation.
NORMINV	Returns the inverse of the normal cumulative distribution for the specified mean and standard deviation.
NORMSDIST	Returns the standard normal cumulative distribution function.
NORMSINV	Returns the inverse of the standard normal cumulative distribution function.
PEARSON	Returns the Pearson product moment correlation coefficient, r, a dimensionless index that ranges from -1.0 to 1.0 inclusive and reflects the extent of a linear relationship between two data sets.
PERCENTILE	Returns the k-th percentile of values in a range.
PERCENTRANK	Returns the rank of a value in a data set set as a percentage of the data set.
PERMUT	Returns the number of permutations for a given number of objects that can be selected from a range of numbers.
POISSON	Returns the Poisson distribution.
PROB	Returns the probability that values in a range are between two specified limits.
QUARTILE	Returns the quartile of a data set.
RANK	Returns the rank of a number in a list of numbers.
RSQ	Returns the r <sup>2</sup> value of a linear regression line.
SKEW	Returns the skew of a distribution.
SLOPE	Returns the slope of a regression line through data points in KNOWN_Y'S and KNOWN_X'S.
SMALL	Returns the k-th smallest value in a data set.
STANDARDIZE	Returns a normalized value from a distribution characterized by MEAN and STANDARD_DEV.
STDEV	Estimates standard deviation based on a sample.
STDEVA	Estimates standard deviation based on a sample. Includes text and logical values.
STDEVP	Estimates standard deviation based on a sample assuming that the arguments represent the total population.
STDEVPA	Estimates standard deviation based on a sample assuming that the arguments represent the total population. Includes text and logical values.
STEYX	Returns the standard error of the predicted y value for each x in the regression.
TDIST	Returns the percentage points (probability) for the student t-distribution, where a numeric value (x) is a calculated value of t for which the percentage points are to be computed.
TINV	Returns the t-value of the Student's t-distribution as a function of the probability and the degrees of freedom.
TREND	Returns the y-values along a linear trendline that best fits the values in a data set.
TRIMMEAN	Returns the mean of the interior of a data set.
TTEST	The probability associated with t-test.
VAR	Returns an estimate for the variance of a population based on a sample data set.
VARA	Returns an estimate for the variance of a population based on a sample data set and may include text or logical values.
VARP	Calculates variance based on the entire population.
VARPA	Calculates variance based on the entire population and may include text or logical values.
WEIBULL	Returns the Weibull distribution.
ZTEST	Returns the two-tailed P-value of a z-test.
<b>Text Functions</b>	
CHAR	Returns the character specified by a number.
CLEAN	Removes all nonprintable characters from text.
CODE	Returns a numeric code from the first character in a text string. The opposite of the CHAR function.
CONCATENATE	Joins several text strings into one text string.
DOLLAR	Converts a number to text using Currency format, with the decimals rounded to the specified place.
EXACT	Compares two text strings and returns TRUE if they are exactly the same, and FALSE otherwise.
FIND	Locates one text string within another text string, and returns the number of the starting position of FIND_TEXT from the leftmost character of WITHIN_TEXT.
FINDB	Returns the position of specified text within another specified text string based on the number of bytes each character uses from the first character of WITHIN_TEXT.
FIXED	Rounds a number to a specified number of decimals, formats the number in decimal format using a period and commas, and returns the result as text.
LEFT	Returns the first character(s) in a text string.
LEFTB	Returns the first character(s) in a text string based on a specified number of bytes
LEN	Returns the number of characters in a text string.
LENB	Returns the number of characters in a text string expressed in bytes.
LOWER	Converts all letters in a text string to lowercase.
MID	Returns a specific number of characters from a text string starting at the position you specify.
MIDB	Returns a group of characters based on a specified number of bytes from a text string starting at the position you specify.
PROPER	Capitalizes the first letter of each word in a text string or sentence.
REPLACE	Replaces part of a text string with a different text string based on the number of characters you specify.
REPLACEB	Replaces part of a text string with a different text string based on the number of characters you specify in terms of bytes.
REPT	Repeats specified text a given number of times.
RIGHT	Returns the last character(s) in a text string.
RIGHTB	Returns the last character(s) in a text string based on a specified number of bytes.
SEARCH	Returns the number of the character at which a specific character or text string is first found, reading from left to right.

SEARCHB	Returns the number of the character at which a specific character or text string is first found in bytes, reading from left to right.
SUBSTITUTE	Substitutes NEW_TEXT for OLD_TEXT in a string.
T	Returns the text referred to by a value.
TEXT	Converts a value to text in a specific number format.
TRIM	Removes all spaces from text except single spaces between words.
UPPER	Converts text to uppercase.
USDOLLAR	Converts a number to text using US Dollar format, with the decimals rounded to the specified place.
VALUE	Converts a text string that represents a number to a number.
<b>Analysis Toolpak Functions</b>	
ACCRINT	Returns accrued interest for securities that pay periodic interest.
ACCRINTM	Returns the accrued interest for securities that pay interest at the maturity date.
AMORDEGRC	Returns the depreciation for each accounting period within the formula.
AMORLINC	Returns the depreciation for each accounting period.
BESSELI	Returns the BESSEL function in modified form for imaginary arguments.
BESSELJ	Returns the actual BESSEL function.
BESSELK	Returns the BESSEL function in modified form for imaginary arguments.
BESSELY	Returns the BESSEL function, also known as the Weber or Neumann function.
BIN2DEC	Converts a binary number to decimal form.
BIN2HEX	Converts a binary number to a hexadecimal.
BIN2OCT	Converts a binary number to octal form.
COMPLEX	Converts real and imaginary coefficients into a complex number of the form $x + yi$ or $x + yj$ .
CONVERT	Interprets data from one measurement system to another.
COUPDAYBS	Returns the number of days from the beginning of the period to the coupon-period settlement date.
COUPDAYS	Returns the number of days in the period that contains the coupon period settlement date.
COUPDAYSNC	Returns the number of days between the settlement date to the next coupon date.
COUPNCD	Returns the next coupon date after the settlement date.
COUPNUM	Returns the total number of coupons to be paid between the settlement and maturity dates, rounded up to the nearest whole coupon.
COUPPCD	Returns the coupon date previous to the settlement date.
CUMIPMT	Returns the cumulative interest on a loan between start and stop dates.
CUMPRINC	Returns the cumulative principal amount between start and stop dates on a loan or mortgage.
DEC2BIN	Converts decimal numbers to binary form.
DEC2HEX	Converts decimal numbers to hexadecimal.
DEC2OCT	Converts decimal numbers to octal.
DELTA	Tests whether numbers or values are equal with a number result. Returns "0" for unequal, "1" for equal.
DISC	Returns the security discount rate.
DOLLARDE	Converts a fraction dollar price into a decimal dollar price.
DOLLARFR	Converts a decimal dollar price into a fraction dollar price.
DURATION	Returns the Macauley duration for an assumed par value.
EDATE	Returns the value or serial number of the date which is a certain number of months before or after a user-specified date.
EFFECT	Returns the effective interest rate annually. This is based on the nominal annual interest rate and the number of compounding periods per year.
EOMONTH	Returns the date at the end of the month a specified number of months before or after a specified date.
ERF	Returns the integrated error function between a lower and upper limit.
ERFC	Returns a complementary ERF function integrated between 'x' and infinity.
FACTDOUBLE	Returns the double factorial of a number.
FVSCHEDULE	Returns the future value of a principal amount after applying several, or a series of compound interest rates.
GCD	Returns the greatest common divisor of two or more integers.
GESTEP	Returns the value 1 if the number is greater than or equal to a specified step value, otherwise it returns 0.
HEX2BIN	Converts hexadecimal numbers to binary form.
HEX2DEC	Converts hexadecimal numbers to decimal form.
HEX2OCT	Converts hexadecimal numbers to octal form.
IMABS	Returns the absolute value (modulus) of a complex number in $x+yi$ or $x+yj$ text format.
IMAGINARY	Returns the coefficient of a complex number in $x+yi$ or $x+yj$ text format.
IMARGUMENT	Returns the theta argument - an angle expressed in radians.
IMCONJUGATE	Returns the complex conjugate of a complex number in $x+yi$ or $x+yj$ text format.
IMCOS	Returns the cosine of a complex number in $x+yi$ or $x+yj$ text format.
IMDIV	Returns the quotient of complex numbers in $x+yi$ or $x+yj$ text format.
IMEXP	Returns the exponential of a complex number in $x+yi$ or $x+yj$ text format.
IMLN	Returns the natural logarithm of a complex number in $x+yi$ or $x+yj$ text format.
IMLOG10	Returns the common logarithm (Base 10) of a complex number in $x+yi$ or $x+yj$ text format.
IMLOG2	Returns the common logarithm (Base 2) of a complex number in $x+yi$ or $x+yj$ text format.
IMPOWER	Returns a complex number raised to a power in $x+yi$ or $x+yj$ text format.
IMPRODUCT	Returns the product from 2 to 29 complex numbers in $x+yi$ or $x+yj$ text format.
IMREAL	Returns the real coefficient of a complex number in $x+yi$ or $x+yj$ text format.
IMSIN	Returns the sine of a complex number in $x+yi$ or $x+yj$ text format.
IMSQRT	Returns the square root of a complex number in $x+yi$ or $x+yj$ text format.
IMSUB	Returns the difference of two complex numbers in $x+yi$ or $x+yj$ text format.
IMSUM	Returns the sum of 2 to 29 complex numbers in $x+yi$ or $x+yj$ text format.
INTRATE	Returns the interest rate of a security that is fully invested.
ISEVEN	Returns TRUE if value is an even number, FALSE if it is not.
ISODD	Returns TRUE if value is an odd number, FALSE if it is not.
LCM	Returns the least common multiple of integers.
MDURATION	Returns the modified duration of a security with a par value assumed to be \$100.
MROUND	Returns a number rounded to the desired multiple. Rounds up if the remainder after dividing the number by the multiple is at least half the value of the multiple.
MULTINOMIAL	Returns the ratio of the factorial of the sum of the values to the product of the factorials.
NETWORKDAYS	Returns the number of working days between two dates. Excludes weekends and specified holidays.
NOMINAL	Returns the nominal annual interest rate given an effective rate and the total number of compounding periods for the year.
OCT2BIN	Converts an octal number to binary form.
OCT2DEC	Converts an octal number to decimal form.
OCT2HEX	Converts an octal number to hexadecimal form.
ODDFPRICE	Returns the value of a security based on a per \$100 face value and an odd (short or long) first period.
ODDFYIELD	Returns the security yield with an odd first period.
ODDLPRICE	Returns the per \$100 face value of a security having an odd last coupon period.
ODDLYIELD	Returns the security yield that has an odd last period.
PRICE	Returns the value of a security based on price per \$100 face value and periodic interest payments.

PRICEDISC	Returns the value of a discounted security based on a price per \$100 face value.
PRICEMAT	Returns the value of a security that pays interest at maturity and price per \$100 face value.
QUOTIENT	Returns the integer portion of a division.
RANDBETWEEN	Returns a random integer between the integers you specify. A new random number is returned every time the worksheet is calculated.
RECEIVED	Based on a fully invested security, returns the amount received at maturity.
SERIESSUM	Returns the sum of a power series.
SQRTPI	Returns the square root of (NUMBER * Pi)
TBILLEQ	Returns the bond equivalent yield for a treasury bill.
TBILLPRICE	Returns the price per \$100 face value for a treasury bill.
TBILLYIELD	Returns the yield of a treasury bill.
WEEKNUM	Returns the number where a week falls numerically within a year.
WORKDAY	Returns a date that is a specified number of working days before or after a given date.
XIRR	Returns the internal rate of return for a schedule of cash flows that is not necessarily periodic.
XNPV	Returns the net present value for a schedule of cash flows that is not necessarily periodic.
YEARFRAC	Calculates the fraction of the year between two dates.
YIELD	Based on a yield that pays periodic interest, returns the yield of the security.
YIELDDISC	Returns the annual yield for a discounted security.
YIELDMAT	Returns the annual yield based on a security that pays interest at a maturity.