# coursera

# Excel Formulas Cheat Sheet

## Date and Time Functions

| Function | Description | Example |
|---|---|---|
| =EDATE | Returns the date that is a specified number of months before or after a start date. | =EDATE(A1, 2) |
| =EOMONTH | Returns the last day of the month that is a specified number of months before or after a start date. | =EOMONTH(A1, 1) |
| =DATE | Converts year, month, and day into a date. | =DATE(2023, 7, 27) |
| =TODAY | Returns the current date. | =TODAY() |
| =NETWORKDAYS | Returns the number of whole workdays between two dates. | =NETWORKDAYS(A1, A2) |
| =YEAR | Extracts the year from a date. | =YEAR(A1) |
| =YEARFRAC | Returns the year fraction representing the number of whole days between start_date and end_date. | =YEARFRAC(A1, A2) |

## Counting Data Functions

| Function | Description | Example |
|---|---|---|
| =COUNT | Counts the number of cells that contain numbers. | =COUNT(A1:A10) |
| =COUNTIF | Counts the number of cells that meet a criterion. | =COUNTIF(A1:A10, ">5") |
| =COUNTA | Counts the number of cells that are not empty. | =COUNTA(A1:A10) |

## Mathematical Functions

| Function | Description | Example |
|---|---|---|
| =LOG | Returns the logarithm of a number to a specified base. | =LOG(100, 10) |
| =EXP() | Returns e raised to the power of a number. | =EXP(1) |
| =MAX | Returns the maximum value in a range. | =MAX(A1:A10) |
| =MIN | Returns the minimum value in a range. | =MIN(A1:A10) |
| =MAXA | Returns the maximum value in a range, including logical values and text. | =MAXA(A1:A10) |
| =MINA | Returns the minimum value in a range, including logical values and text. | =MINA(A1:A10) |
| =SUM | Adds all the numbers in a range. | =SUM(A1:A10) |
| =SUMIF | Adds the cells specified by a given condition or criteria. | =SUMIF(A1:A10, ">5") |
| =SUMSQ | Returns the sum of the squares of the arguments. | =SUMSQ(A1:A10) |
| =AVERAGE | Returns the average of its arguments. | =AVERAGE(A1:A10) |
| =MEDIAN | Returns the median of its arguments. | =MEDIAN(A1:A10) |
| =PERCENTILE.INC | Returns the k-th percentile of values in a range. | =PERCENTILE.INC(A1:A10, 0.5) |
| =ROUNDUP | Rounds a number up, away from zero. | =ROUNDUP(A1, 2) |
| =ROUNDDOWN | Rounds a number down, towards zero. | =ROUNDDOWN(A1, 2) |

| | | |
|---|---|---|
| =SUMPRODUCT | Returns the sum of the products of corresponding ranges. | =SUMPRODUCT(A1:A5, B1:B5) |
| =CEILING | Rounds a number up to the nearest multiple of significance. | =CEILING(2.5, 1) |
| =FLOOR | Rounds a number down to the nearest multiple of significance. | =FLOOR(2.5, 1) |
| =VAR.S | Estimates variance based on a sample. | =VAR.S(A1:A10) |
| =STDEV.S | Estimates standard deviation based on a sample. | =STDEV.S(A1:A10) |
| Autosum | Automatically sums a range of data. | =SUM(A1:A10) |
| =ABS | Returns the absolute value of a number. | =ABS(-4) |

## Lookup Functions

| Function | Description | Example |
|---|---|---|
| Index Match | Combines INDEX and MATCH for powerful lookups. | =INDEX(A1:C10, MATCH(E1, B1:B10, 0), 1) |
| =VLOOKUP | Looks for a value in the first column and returns a value in the same row from a specified column. | =VLOOKUP(D1, A1:C10, 2, FALSE) |
| =HLOOKUP | Looks for a value in the first row and returns a value in the same column from a specified row. | =HLOOKUP(D1, A1:F5, 3, FALSE) |
| =INDEX | Returns the value of an element in a table or an array, selected by the row and column number indexes. | =INDEX(A1:C10, 2, 3) |
| =MATCH | Searches for a value in a range and returns its relative position. | =MATCH(D1, A1:A10, 0) |
| =OFFSET | Returns a reference to a range that is a specified number of rows and columns from a cell or range of cells. | =OFFSET(A1, 2, 2) |

## Conditional Functions

| Function | Description | Example |
|----------|-------------|---------|
| =IF | Returns a value if a condition is true, and another value if false. | =IF(A1 > 10, "Yes", "No") |
| =OR | Returns TRUE if any argument is TRUE. | =OR(A1 > 10, B1 < 5) |
| =XOR | Returns TRUE if an odd number of arguments is TRUE. | =XOR(A1 > 10, B1 < 5) |
| =AND | Returns TRUE if all arguments are TRUE. | =AND(A1 > 10, B1 > 5) |
| =NOT | Reverses the logic of its argument. | =NOT(A1 > 10) |
| =IFERROR | Returns a value if an error is found. | =IFERROR(A1/B1, "Error") |

## Data Types

| Function | Description | Example |
|----------|-------------|---------|
| =ISNUMBER | Returns TRUE if the value is a number. | =ISNUMBER(A1) |
| =ISTEXT | Returns TRUE if the value is text. | =ISTEXT(A1) |
| =ISLOGICAL | Returns TRUE if the value is a logical value. | =ISLOGICAL(A1) |
| =N | Returns a value converted to a number. | =N(A1) |
| =VALUETOTEXT | Converts a value to text. | =VALUETOTEXT(A1) |
| =DATAVALUE | Converts a date in the form of text to a number that represents the date. | =DATAVALUE("10/10/2020") |

## Financial Functions

| Function | Description | Example |
|---|---|---|
| =NPV | Calculates the net present value of an investment based on a series of periodic cash flows and a discount rate. | =NPV(0.1, A1:A10) |
| =XNPV | Returns the net present value for a schedule of cash flows that is not necessarily periodic. | =XNPV(0.1, A1:A10, B1:B10) |
| =XIRR | Returns the internal rate of return for a schedule of cash flows that is not necessarily periodic. | =XIRR(A1:A10, B1:B10) |
| =YIELD | Returns the yield on a security that pays periodic interest. | =YIELD(DATE(2022,1,1), DATE(2032,1,1),0.05, 95,100,2) |
| =FV | Returns the future value of an investment. | =FV(0.05, 10, -1000, -10000) |
| =PV | Returns the present value of an investment. | =PV(0.05, 10, -1000, 0) |
| =PRICE | Returns the price per $100 face value of a security that pays periodic interest. | =PRICE(DATE(2022,1,1), DATE(2032,1,1), 0.05, 0.06, 100, 2) |
| =SLN | Returns the straight-line depreciation of an asset. | =SLN(10000, 1000, 5) |
| =DB | Returns the declining balance depreciation of an asset for a specified period. | =DB(10000, 1000, 5, 1) |
| =DDB | Returns the double-declining balance depreciation of an asset for a specified period. | =DDB(10000, 1000, 5, 1) |

## Combining and Splitting Strings

| Function | Description | Example |
|---|---|---|
| ="black"&"friday" | Combines two strings into one. | ="black"&"friday" |

| =REPT | Repeats text a given number of times. | =REPT("black", 3) |
| =TEXTSPLIT | Splits text into multiple columns or rows. | =TEXTSPLIT(A1, ",") |

## Mutating Strings

| Function | Description | Example |
| --- | --- | --- |
| =MID | Returns a specific number of characters from a text string starting at the position you specify. | =MID(A1, 2, 3) |
| =UPPER | Converts a text string to all uppercase letters. | =UPPER(A1) |
| =LOWER | Converts a text string to all lowercase letters. | =LOWER(A1) |
| =PROPER | Capitalizes the first letter of each word in a text string. | =PROPER(A1) |

## Data Manipulation

| Function | Description | Example |
| --- | --- | --- |
| =FILTER | Filters a range of data based on criteria you define. | =FILTER(A1:C10, B1:B10 > 50) |
| =SORT | Sorts the contents of a range or array. | =SORT(A1:A10, 1, TRUE) |
| =SORTBY | Sorts the contents of an array based on the values in a corresponding array. | =SORTBY(A1:A10, B1:B10, -1) |
| =UNIQUE | Returns a list of unique values in a list or range. | =UNIQUE(A1:A10) |
| =SEQUENCE | Generates a list of sequential numbers in an array. | =SEQUENCE(10, 1, 1, 1) |