**Excel formulas and shortcuts**

Full alphabetical list of formulas

<https://support.microsoft.com/en-gb/office/excel-functions-alphabetical-b3944572-255d-4efb-bb96-c6d90033e188>

Shortcuts

<https://support.microsoft.com/en-gb/office/keyboard-shortcuts-in-excel-1798d9d5-842a-42b8-9c99-9b7213f0040f#bkmk_freqwin>

|  |  |  |
| --- | --- | --- |
| Function | What it does | Example |
| + - \* / < > | Add, subtract, multiply, divide, less than greater than | =A1+B2  =C3\*D4 |
| () | Indicates what order to do things inner set first then work out | =((A1+B2) \*C3)/D1  =((A1+B2) \*C3)/D1  Red then blue then green |
| ^ | To the power of | =A2^5 ten to the power 5 |
| e | Short of times 10 to the power of | =3E8 would be 3x108 |
| =SUM() | Add all the cells together | =SUM(A2:A11)  =SUM(A2:A11,C2:C11) |
| =AVERAGE() | Finds average (mean ) of data | =AVERAGE(A2:A11) |
| =MODE.MULT() | Finds all the modes – make sure you have space under for multiple ones | =MODE.MULT(A2:A11) |
| =STDEV.P() | Finds standard deviation of the whole set | =STDEV.P(A2:A11) |
| =MEDIAN() | Finds average median (middle value) of data | =MEDIAN(A2:A11) |
| =COUNT() | Counts the total number of cells with a value in them (also countblank count black cells, countif count if conditions met and countifs count if multiple conditions met) | =COUNT(A2:A11) |
| =MAX() | Finds maximum value | =MAX(A2:A11) |
| =MIN() | Finds minimum value | =MIN(A2:A11) |
| =TODAY() | Returns today’s date | =TODAY() |
| =NOW() | Returns today’s date and time | =NOW() |
| =IF() | Does a test and returns a value depending on outcome – tricky syntax | =IF(test, TRUE, FALSE)  Eg to find in a number is bigger than 4  =IF(A2>4, “Yes”, “No”)  Words need inverted commas numbers don’t  =IF(A2>4, 1, 2) |
| =OR() | If any of the statements is true it returns true if not false | =OR(A2>4, B3=2, D2>3)  Would return true if anyone of those is correct if none of them then it would say false |
| =AND() | If any ALL if statements are true it returns true if not false | =AND(A2>4, B3=2, D2>3)  Would return true only if all were true if not it would return false |
| =SQRT() | Finds square root | =SQRT(A2) |
| =SIN() =COS()  =TAN() | Sin of angel in radians not degree (1 degree = π/180 radians | =SIN(A2) |
| Ctrl | Hold and click allows section on non-adjacent cells |  |
| Ctrl + shift+enter | Allows an array to be returned |  |
| Right click to paste | Use paste special | Will copy selected parts eg formulas, **values,** formats |
| Ctrl+S | Save |  |
| Ctrl+F | Search |  |
| Ctrl+1 | Text options |  |
| Copy with change | Grab bottom right of box and pull down |  |
| Copy without changes | Ctrl and grab bottom right of box and pull down |  |
| $ | Keep cell constant (absolute rather than variable) | =A2\*$B$2  As you copy A2 will change to A3, A4 etc but B2 will always be B2  You can use just one $ to keep just the letter or number constant |

**Editing graphs**

* Highlight cells
* Insert / chart type / choose chart type
* To change which data is where click on data points then it will highlight cells and you can drag highlighted area over the ones you want.
* Hover or left click on element you want to change
* Then right click for options
* Top tab with chart clicked on **chart design** to add elements change chart style
* Top tab with element clicked on **format**
* Options from graphic on right   
  + chart elements paint brush style, funnel data options



* Short cut – if the graph isn’t putting the data in the right format try making it a scatter then change chart type back to the one you want.
* To get a linear scale on a bar chart x axis go to format axis/axis options/ the pic of the bar chart / change the axis type to data axis (no idea why it works!)