**Common Spreadsheet Formulas & Functions**

This is a list of the most commonly used formulas and functions that we’ve used in class. It is not meant to be comprehensive. Complete lists of formulas and functions in [Microsoft Excel](https://support.office.com/en-us/article/Excel-functions-alphabetical-b3944572-255d-4efb-bb96-c6d90033e188) and [Google Docs](https://support.google.com/docs/table/25273?hl=en) can be found online. Additional help is also available through [IRE’s Tipsheets](http://ire.org/resource-center/tipsheets/?q=excel) or sites like [StackOverflow](http://stackoverflow.com/questions/tagged/excel) if you get stuck or want to learn more.

## Statistics, Simple Math

**Totaling or adding up the values in a column**

To add up the total of set of data. **=SUM([Cell Range])**

ie. **=SUM(B2:B10)**

or **=SUM(B2, B10, B12)**

**Average of a set of numbers**

To add up the total of set of data. **=AVERAGE([Cell Range])**

ie. **=AVERAGE(B2:B10)**

or **=AVERAGE(B2, B10, B12)**

**Median (or middle value) in a set of numbers**

To add up the total of set of data. **=MEDIAN([Cell Range])**

ie. **=MEDIAN(B2:B10)**

or **=MEDIAN(B2, B10, B12)**

**Largest value in a set of numbers**

To add up the total of set of data. **=MAX([Cell Range])**

ie. **=MAX(B2:B10)**

or **=MAX(B2, B10, B12)**

**Smallest value in a set of numbers**

To add up the total of set of data. **=MIN([Cell Range])**

ie. **=MIN(B2:B10)**

or **=MIN(B2, B10, B12)**

**Difference**

To find the change or difference between values just use simple subtraction. **=[New]-[Old]**

**=B2-C2**

**Ratios and percent of total**

To calculate portion of a whole use division. Remember that ratios, percent are all just fractions. Percent can be translated to “per 100.” **=[Part we care about]/[Whole Population]**

**=B2/C10**

**Percent Change**

To calculate the percent change just divide the difference by the old value.**=([New]-[Old])/[Old]**

**=(B2-C2)/C2**

**Anchoring part of a formula**

If you want to copy your formula to other cells, but make sure one of the cells referenced doesn’t change. Use the “**$**.” For example, if you’re calculating a percent or ratio for various categories and your total field isn’t changing, surround the “**$**” symbol around the letter for that cell. **=[Cell]/$[Cell letter$number])**

**=B2/$C$10)**

## Dates

**Putting a date together**

To put together a date from pieces you’ve parsed out. **=DATE([YEAR], [MONTH], [DAY])**

ie. **=DATE(B2, C2, D2)**

Note: You’ll often use this along with string functions **LEFT**, **RIGHT** and **MID** to put together a date that you’ve had to pull apart.

**Date value**

Remember that every date is really just a number that Excel or Google Docs save. To see the date’s “value” or number behind it. **=DATEVALUE([DATE])**

**=DATEVALUE(A2)**

## String Functions

**LEFT**

To pull just a few characters a text string, starting from the **LEFT** side of a cell.

**=LEFT([TEXT], [Number of characters])**

ie. **=LEFT(B2, 4)**

**RIGHT**

To pull just a few characters a text string, starting from the **RIGHT** side of a cell.

**=RIGHT([TEXT], [Number of characters])**

ie. **=RIGHT(B2, 4)**

**MID**

To pull just a few characters a text string, starting from the **MIDDLE** of a cell and only going a few spaces.**=MID([TEXT], [Starting Spot], [Number of characters])**

ie. **=MID(B2, 2, 3)**

**SEARCH**

To find the location of a particular type of a text in a cell. **=SEARCH(“[Criteria]”, [TEXT])**

ie. to find the comma location **=SEARCH(“,” , B2)**

Search can often be used in tandem with other functions, such as when looking to divide a name (ie. To parse the last name in “Jones, Coulter” use **=LEFT(B2, SEARCH(“,” , B2)-1)**)

To slit on a specific character such as a comma.**=SPLIT([TEXT], “[Character to parse on]”)**

ie. **=SPLIT(B2, “,”)**

**NOTE: Only works in Google Docs. Will not work in Excel.**

## Logic and Conditional Statements

**Subtotal**

When filtering data you can use the subtotal function to only SUM or AVERAGE the filtered data. **=SUBTOTAL([FUNCTION],[Cell Range])**

ie. **=SUBTOTAL(9, B2:B30 )**

There is a [full list of functions online](https://support.office.com/en-us/article/SUBTOTAL-function-7b027003-f060-4ade-9040-e478765b9939), but here are the most common:

**Key functions**

1 = AVERAGE

2 = COUNT

4 = MAX

5 = MIN

9 = SUM

**Only counting certain things.**

To only count the record if it meets a condition, like counting “YES” and not “NO.” **=COUNTIF([Cell Range], “[Criteria]”)**

ie. **=COUNTIF(B2:B30, “YES”)**

**Note: For results use “ ” around text or string and not numbers. So “YES” but just 1.**

**IF statements.**

To fill in a cell based on another condition

**=IF([Logical Test], “[Value if True]”, “[Value if False]”)**

ie. **=IF(B2>C2, “YES”, “NO”) or**

ie. **=IF(B2>C2, 1, 0)**

**Substituting values.**

To substitute or change a text value in the cell from one thing to something else

**=SUBSTITUE([Cell], “[Old Text]”, “[New text to replace it with]” )**

ie. **=SUBSTITUTE(B2, “$”,“”) would remove the “$” and replace it with nothing or**

ie. **=SUBSTITUTE(B2, “\_”,“ ”) would remove the “\_” and replace it with a space**

## Simple formatting other tricks

**Proper case**

Change the text in a cell from all upper or lower case letters to proper case, where the first letter is capitalized in each word (ie. John Smith). **=PROPER([Cell])**

**=PROPER(A2)**

**Lower case**

Change the text in a cell to all lower case letters (ie. john smith). **=LOWER([Cell])**

**=LOWER(A2)**

**Upper case**

Change the text in a cell to all lower case letters (ie. JOHN SMITH). **=UPPER([Cell])**

**=UPPER(A2)**