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 and Google Docs can be found online. Additional help is also available through IRE's Tipsheets or sites like StackOverflow 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 find the average (or mean) in a set of data. **=AVERAGE([Cell Range])**
ie. **=AVERAGE(B2:B10)**
or **=AVERAGE(B2, B10, B12)**

Median in a set of numbers
To find the median (or middle value) in a set of data. **=MEDIAN([Cell Range])**
ie. **=MEDIAN(B2:B10)**
or **=MEDIAN(B2, B10, B12)**

Largest value in a set of numbers
To find the largest value in a set of data. **=MAX([Cell Range])**
ie. **=MAX(B2:B10)**
or **=MAX(B2, B10, B12)**

Smallest value in a set of numbers
To find the smallest value in a 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/C10)

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, 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)