

# Excel – Formulas and Shortcuts

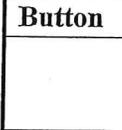
## Creating Formulas Using the AutoSum Button

The AutoSum button totals columns or rows.

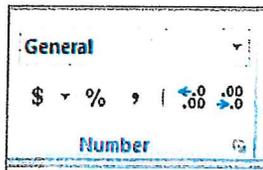
### AutoSum Function

- Place cursor where the answer should appear.
- Click the AutoSum button. 
- Click green checkmark or press the ENTER key. (Note: Verify the range of cells is correct.)

## Formatting Numbers

Button	Display Option
	General-The default Number format; displays numbers without dollar signs, commas, or trailing decimal places.
	Currency-Sets decimal places and negative number display, and inserts dollar signs and comma separators.
	Percentage-Inserts percent sign to the right of a number with a set number of decimal places.
	Comma-Set decimal places, negative number display, and comma separator.
	Increases number of decimal places.
	Decreases number of decimal places.

- Select cell or range of cells to be formatted.
- Click on a number formatting button. (Use pull-down arrow to reveal more choices.)



## Constructing Formulas Using Cell Addresses

Formulas begin with an equal sign (=)	
Addition	+
Subtraction	-
Division	/
Multiplication	*

Examples: =A1\*A2    =B10/B14    =b10+b4+b5

### Note: Formulas begin with an = sign.

- Move your cursor to the cell where you would like the answer to appear.
- Type the formula manually or use the point and click method to write a formula.
- Press ENTER key or click green checkmark.

## Copying Formulas

	A	B	C	D	E
1		Jan	Feb	Mar	Totals
2	Region #1	34,600	35,700	32,400	=SUM(B2:D2)
3	Region #2	58,000	24,400	22,777	
4	Region #3	63,662	63,440	43,619	
5	Region #4	18,708	23,318	12,411	
6	Totals				

- If you copy a formula to a different column, the column references in each cell address will be incremented to the next higher letter.
- If you copy to a different row, the row references in each cell address will be incremented to the next higher number.

### To copy a formula:

- Select the cell containing the formula
- Click the handle at the lower right corner of the cell and then drag to fill cells. (Verify the formula copied correctly.)

Note: You can also "copy" the formula to the clipboard and "paste" it to destination cells.

## Examples of Other Functions

Function formulas begin with an equal sign. (=) Parentheses identify the "range." Multiple ranges can be separated by a comma. Some of the most common functions are:

Function	Code
Sum	=SUM(A5:A16)
Average	=AVERAGE(A5:A16)
Maximum	=MAX(A5:A16)
Minimum	=MIN(A5:A16)
The current date	=TODAY()

	A	B	C	D	E
1		Jan	Feb	Mar	Totals
2	Region #1	34,600	35,700	32,400	\$102,700
3	Region #2	58,000	24,400	22,777	\$105,177
4	Region #3	63,662	63,440	43,619	\$170,721
5	Region #4	18,708	23,318	12,411	\$ 54,437
6	Totals	\$174,970	\$146,858	\$111,207	\$433,035
7	Average	\$ 43,743	\$ 36,715	\$ 27,802	\$108,259
8	High	\$ 63,662	\$ 63,440	\$ 43,619	\$170,721
9	Low	\$ 18,708	\$ 23,318	\$ 12,411	\$ 54,437
10					
11					

# Excel – Formulas and Shortcuts

## Order of Precedence in Calculations

When you work with formulas that have more than one arithmetic operator, the calculations are done in sequence based on these rules:

1. Calculation of any exponents
2. Multiplication and Division, left to right
3. Addition and Subtraction, left to right

Operations inside parentheses are calculated before any other calculations.

	A	B	C	D	E
1	Region 1	200			
2	Region 2	300			
3	Region 3	0			
4	Region 4	500			
5		=b1+b2+b3+b4/4			
6					

These two formulas will calculate differently.  
 $=b1+b2+b3+b4/4$     and     $=(b1+b2+b3+b4)/4$

## Absolute Cell Addresses

An **absolute cell address** used in a formula always remains the same, even if you move or copy the formula to a new location.

You may identify the absolute cell references by placing a dollar sign (\$) before the column letter and/or before the row number of the cell address (for example, \$A\$1).

Pressing the **F4** key adds \$\$ to the cell address.

### Rate = .50 (reimbursement per mile)

Name	Miles	Reimbursement
Employee #1	480	\$
Employee #2	260	\$
Employee #3	382	\$
Employee #4	188	\$

### Sheet Tabs

1. Double-click a sheet tab
2. Type a new name for the sheet/Enter  
(Drag a sheet tab to move sheets in a workbook).

## Using Dates in Formulas

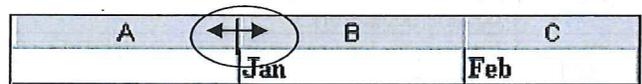
Dates and times can be used to create formulas. For example, to determine the difference between two dates, you can subtract one date from the other. You can add a number to an existing date and it will calculate the new date for you.

Example:

	A	B	C	D	E
1	Invoice	Order Date	Due Date		formula
2	#1001	5/22/2012	6/21/2012		=B2+30
3	#1002	6/15/2012	7/15/2012		=B3+30
4	#1003	6/29/2012	7/29/2012		=B4+30
5	#1004	7/1/2012	7/31/2012		=b5+30

## Shortcuts

### Column Width Adjustments



1. Slide the mouse pointer slowly across the vertical line between column letters (grey header area) until you see a sizing arrow.
2. Click and drag to the right to make the column wider or to the left to make it smaller.

You can **AUTOFIT** a column by double-clicking on the vertical line. Excel will automatically do a "fit to the widest item" currently in the column.

Click and drag over multiple column letters to size multiple columns simultaneously.

Page Layout = **Page Layout** tab / **Orientation**

Margins = **Page Layout** / **Margins**

Print Gridlines/Titles = **Page Layout** **Print Titles**

### AutoFill

1. Type a month, day, date, or text and # in a cell. (example: Check #101)
2. Rest pointer on the handle at the lower right corner of the cell until a + appears. Then drag to fill cells.

### Move one or more cells

1. Select cell or cells
2. Click on the outer edge of the cell (not the corner) and drag to new location

# Excel – Sorts & Filters

- Tabs are used to perform tasks.

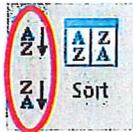


- “Ribbons” replace toolbars



## Data Simple Sort

1. Click to select the Data tab
2. Select a single cell in the column you want to sort on
3. Click AZ (ascending) or ZA (descending)

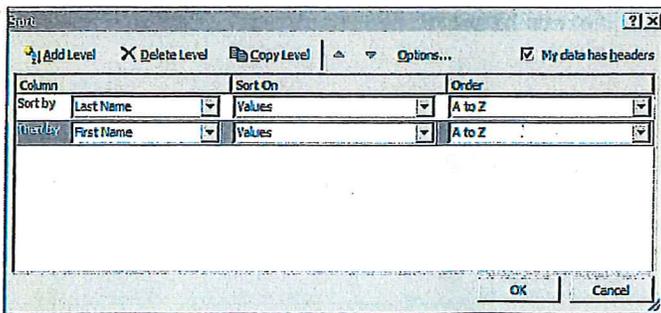


Data can be sorted by text, values, dates, and times.  
Data must be formatted properly to perform sorts.

Cell format	Example	Description
Text	Jones	Cells formatted as “text” can be sorted alphabetically
Currency	\$200.00	Used for money values—decimals align
Number	200.00	Used for general display of numbers
Accounting	\$ 200.00	lines up the current symbol and the decimal point
Date	11/11/2007	Variety of date formats that allow sorts or filters

## Sort Based on Several Criteria

1. Click on the Sort button
2. Choose:
  - a. Column for 1<sup>st</sup> sort
  - b. Sort On (type of sort)
  - c. Order
3. Click “Add Level”
4. Repeat Steps 2 & 3 as needed



- Add Level Creates additional sort criteria
- Delete Level Removes a level from sort criteria list
- Copy Level (Select a level before making a copy)

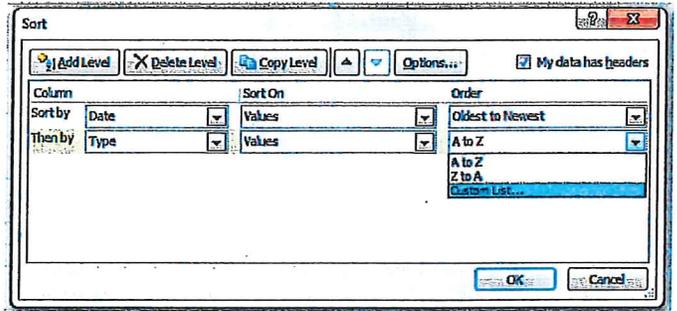
Sorts can be performed on text, values, dates, & times

## Sort by Custom Lists

1. Type the new sort order in blank cells  
(Example: Sort order = High Medium Low)  
Default alphabetic options cannot be used
2. Click on **File / Options / Advanced / Edit**
3. Click **Add**
4. Type entries in the sort order that you would like to create for new sorts

OR

1. Click **Data tab**
  2. **Sort** button
  3. Complete **Column, Sort On** preferences
  4. Click the “**Order**” pull-down arrow
  5. Choose **Custom List ...**
  6. Click **Add** button and type list in new sort order / **OK**
- ✓ “My data has headers” if first row includes labels



Things to keep in mind:

Cells must be formatted correctly Excel sort or filter actions will only include data that is formatted as requested.

Unhide rows and columns before you sort Hidden columns are not moved when you sort columns, and hidden rows are not moved when you sort rows.

Enter column headings in only one row If you need multiple line labels, wrap the text within the cell.

To exclude the first row of data from the sort because it is a column heading, on the Home tab, in the Editing group, click Sort & Filter, click Custom Sort and then select My data has headers

If keeping the original order of records is important, consider inserting a sequence column so it is easy to restore a list of records back to its original order. (Auto fill can be used to quickly generate a sequence of text and numbers.)

\*\*Note: If you do not save the file after performing a sort, the records will remain in the original order.

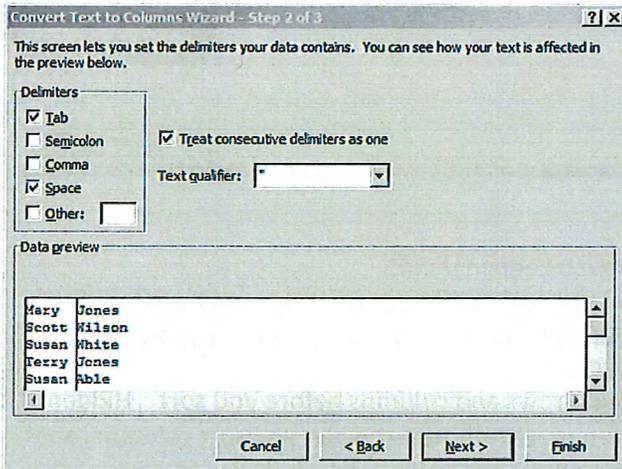
## Sort by a partial value in a column

The "Convert Text to Columns Wizard" can split data in a single column into multiple columns. If you are splitting one column of text, you may want to add a blank column(s) before performing the split.

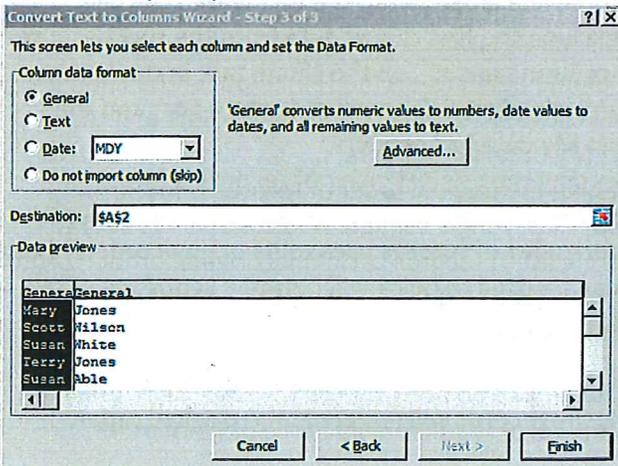
Examples:

- Last name and first name are in one column  
(Mary Jones with a space between names or Jones, Mary with a comma between names)  
Your sort request on last name
- Code 412-MMF-44 (Sort request for 44 data endings)

1. Add a blank column(s) after the column that contains the data that will be split
2. **Select the text to be converted**
3. Click the **Data tab**
4. Click the **"Text to Column"** button
5. Delimited will be the default / **Next**
6. Add a checkmark next to "space" or other delimiter in your data / **Next** ("space" in example-Mary Jones in one column)



## 7. Answer prompts in last window/ Finish



## AutoFilter Records

1. Click **Data tab**
2. Click **Filter button** at the top of a column
3. Choose appropriate filter choices / **OK**
4. Repeat on other columns to add more criteria



## Clear Filter

1. Click **Data tab**
2. Click **Clear Filter button**



## Custom Auto Filter

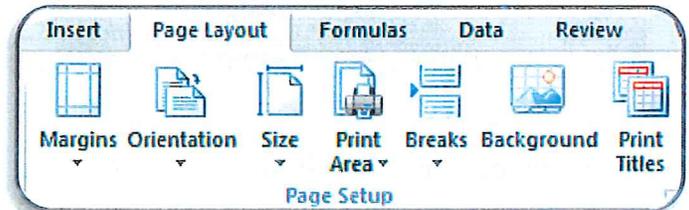
1. Click **Data tab**
2. Click **Filter / AutoFilter**
3. Click a pull-down arrow; choose **"Custom"**  
(Make multiple choices to perform a "custom" filter)

## Print

1. Click **File tab**
2. Click **Print / Print**

## Print Adjustments

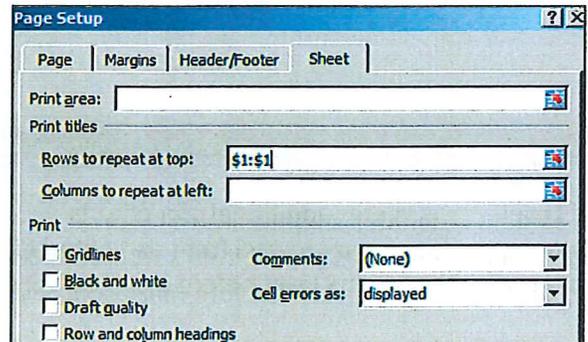
Click **Page Layout tab** to view available options.



- \*Margins
- \*Orientation (Portrait/Landscape)
- \*Size of paper
- \*Print area (Set or clear print area)
- \*Breaks
- \*Print Titles

## Print Titles

1. **Page Layout tab / Print Titles**
2. Click **Sheet tab**
3. Click the **"range finder"** button next to **"Rows to repeat at top:"**
4. Select cell A1 or other appropriate line
5. Click the **"range finder"** button again to return to the spreadsheet / **OK**



# Excel Shortcuts

AutoFill	Enter date, day, month, or text + value / <b>drag “fill handle”</b>
AutoFill a series	<b>Enter 2 or more dates or items</b> Select series/ <b>drag with “fill handle”</b> 
AutoComplete	Press Enter or <b>→ ↓</b> to “complete” suggested fill-in
Cut, copy, or paste	Ctrl+X, Ctrl+C, and Ctrl+V
Edit cell contents	Edit in formula bar <u>or</u> double-click within the cell <u>or</u> F2
Enter numbers as fractions	0 + Space + fraction / Enter
Fill empty cells with contents of 1 cell	Select cells to fill / <b>Ctrl + R</b> (Right) and <b>Ctrl + D</b> (Down)
Force a line break within a cell	<b>Alt + Enter</b> key
“Go to” a specific cell	F5 / cell address
Copy or move a sheet to a new workbook or create a copy within the same workbook	Right click sheet tab / Move or Copy / Choose “new workbook” or location / Add checkmark to “copy” / OK
Insert multiple rows	Click and <b>drag to select row numbers</b> / Right click choose <b>Insert</b>
Size multiple rows	Click and <b>drag to select rows</b> / drag to size one of the rows
Insert multiple columns	Click and <b>drag to select column letters</b> / Right click choose <b>Insert</b>
Size multiple columns	Click and <b>drag to select columns</b> / drag to size 1 column
Move to Cell A1	<b>Ctrl + Home</b> key
Move to last cell	<b>Ctrl + End</b> key
Move to beginning of a row	<b>Home</b> key
Next or Previous worksheet	Ctrl+PageUp or Ctrl+PageDown
Point & Click to enter formulas	Start writing a formula / Point and click to select a cell (or range) in the formula