Microsoft Excel 2016 Essentials

2-D AND 3-D FORMULA

Doing arithmetic – 2D way
A formula always starts with an equal sign "="

Operator	Operation	Formula examples
+ (plus sign)	Addition	=B2+B3 a simple formula =SUM(A1:A10) function using cell references =SUM(10+2) function using constants =SUM(A1+2) function using a cell ref and a constant
- (minus sign)	Subtraction	=A10-A2 =SUM(A1-A3)
* (asterisk)	Multiplication	=SUM(A17*B16)
/ (forward slash)	Division	=SUM(B17/C16)
% (percent sign)	Percent	25%
^ (caret)	Exponentiation	=SUM(5^2) (5*5) =SUM(10^3) (10*10*10)

Relative and absolute reference

A relative cell reference is one that changes relative to the direction in which it is copied.

Example:

◢	A	B	C
1	Retail price	Order Qty	Total
2	$2.00	10	=A2*B2
3	$3.50	5	
4	$4.00	6	

A2 and B2 are relative cell references. When you copy the formula =A2*B2 downwards, Excell will assume that you want to conduct the same calculation in rows 3 and 4 as you did in row 2.

An absolute cell reference is when it does not change whenever it is copied. To make a cell reference absolute, you include the dollar sign before each element of the cell reference, example:
A1 : here you have locked column A and row 1
A$1 : here you have locked row 1
$A1 : and here you have locked column A

Doing arithmetic – 3D way

Summing up totals from different workbooks.
Two ways of summing up totals
1.   Consolidate by Position
2.   Consolidate by Reference

Summing up totals from different worksheets.
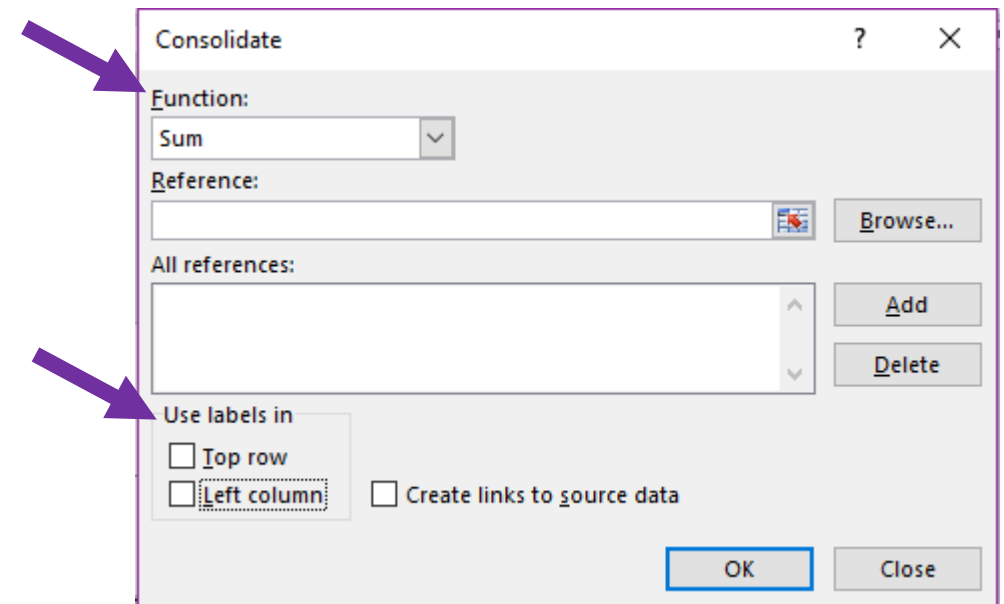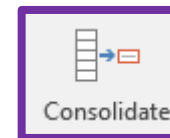1.   Using the SUM() function

1. Consolidate by Position, when labels are identical;
2. Consolidate by Reference, when labels are not identical or there're no labels

Go to the "Data" tab in the menu, and select "Consolidate";

In the consolidate window, choose "Sum" under Function, and then find the appropriate reference and add it to the "All references" window;

For Consolidate by Reference : check appropriate labels to use.

Finally, click OK.

Summing up totals from different worksheets using the SUM() function

	TRANSPORTATION	JULY	AUGUST	SEPTEMBER	TOTAL
6					
7	Miles Driven	220	176	220	
8	Miles Reimbursement	$147.40	$117.92	$147.40	

Worksheet "Sean"

	TRANSPORTATION	JULY	AUGUST	SEPTEMBER	TOTAL
6					
7	Miles Driven				
8	Miles Reimbursement				

Worksheet "Uma"

	TRANSPORTATION	JULY	AUGUST	SEPTEMBER	TOTAL
6					
7	Miles Driven	320	352	432	
8	Miles Reimbursement	$214.40	$235.84	$289.44	

Worksheet "Carlos"

	TRANSPORTATION	JULY	AUGUST	SEPTEMBER	TOTAL
6					
7	Miles Driven	=SUM(			
8	Miles Reimbursement				

Worksheet "Total"

Example above, there are three different worksheets. To sum the numbers for JULY (Miles Driven),…

…place your cursor first in the -July:Miles driven- cell, in worksheet "Total".

Then, type in the cell: =SUM(and then bring your mouse pointer and click on Worksheet "Sean", then click in the appropriate cell, and then hold down Shift key and click the worksheets you want to add in the formula, then close the equation with the close parenthesis and press Enter.

Your formula will look something like this in a cell: =SUM(Sean:Carlos!C7), in the formula bar.

C7	▼	⋮	✕	✓	*fx*	=SUM(Sean:Carlos!C7)

In this example, we have summed up the numbers, for July, from Worksheets "Sean", "Uma" and "Carlos". That is Miles Driven for July: 220 + 0 + 320 = 540

Once you have properly created the formula, you can copy and paste it onto other cells.