

Microsoft Excel: Formulas and Functions

Create a Formula

1 Click in the cell where you want the total to appear and press =.

2 Click in the cell with the first value you want to add, and press +.

3 Click in the cell with the second value you want to add.

4 Include as many cells as you need. When you are done, press Enter.

NOTICE:
You can check a formula when you are done by looking in the Formula Bar.

Functions

Functions are preprogrammed formulas in Excel to make calculations easier.

AutoSum

AutoSum is a function used to add together values in a range of cells.

1 Click in the cell where you want the total.

2 Click on the AutoSum button.

3 Click and drag to select the range of cells you want to add together. Then press Enter.

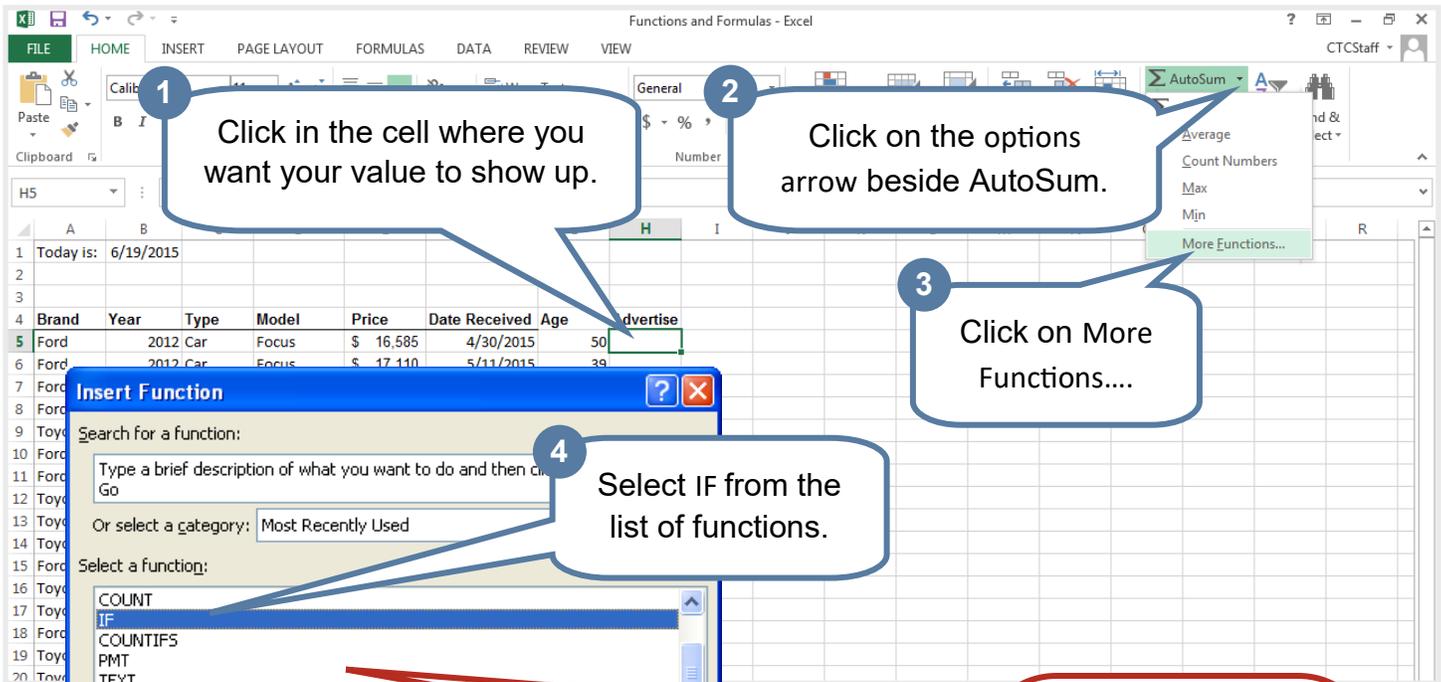
Order of Operations

Mnemonic	Component	Symbol
Please	Parentheses	()
Excuse	Exponents (Powers & Roots)	2^2
My	Multiplication	* or x
Dear	Division	/ or ÷
Aunt	Addition	+
Sally	Subtraction	-

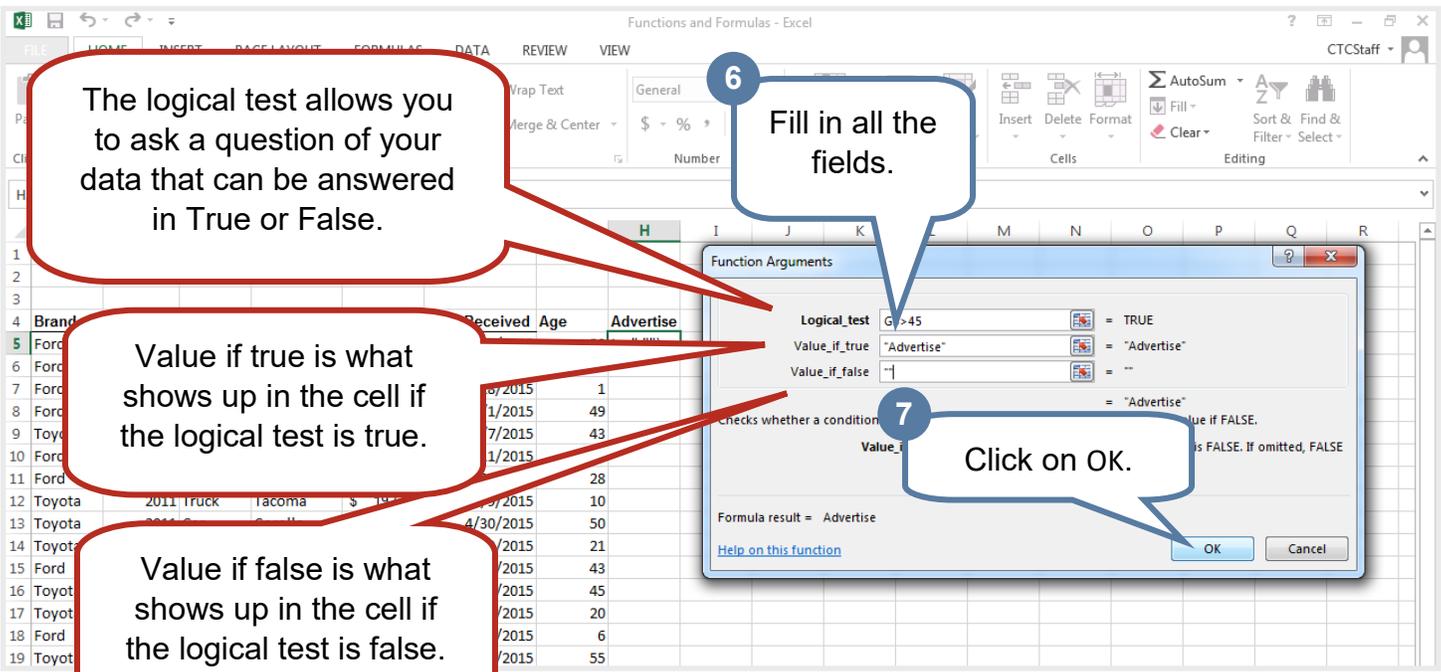
Step	Example formula	How the Math works.
1	$1 + 2^2 * 3 / (4 - 7 + 6)$	Math inside the parentheses is done first.
2	$1 + 2^2 * 3 / 3$	Then the Exponent
3	$1 + 4 * 3 / 3$	Then multiplication and division.
4	$1 + 4$	Finally, addition and subtraction.
5	5	Answer

If Statement

An IF statement allows you to return different values in your cell depending on IF conditions are met.



NOTICE:
The most commonly used functions will show up here.



Named Ranges

You can use Named Ranges in Excel to shorten functions, easily reference a range of cells, or even just for quick navigation.

Create a Named Range

1 Select the range of cells.

2 Right click.

3 Select Define Name...

4 Choose a name.

5 Click OK.

Year	Make	Model	Price	Date
2014	Toyota	Truck	Tacoma	10/11/2015
2014	Ford	Truck	Ranger	9/17/2015
2015	Toyota	Car	Precis	9/14/2015
2014	Toyota	Truck	Tacoma	9/4/2015
2015	Ford	Car	Taurus	10/10/2015
2015	Toyota	Truck	Tacoma	10/8/2015
2015	Ford	Truck	F250	9/6/2015
2015	Toyota	Truck	Tundra	10/9/2015
2014	Toyota	Car	Precis	9/13/2015
2014	Ford	Truck	F250	9/13/2015
2014	Ford	Truck	Tundra	
2014	Ford	Truck	Mustang	
2014	Ford	Truck	F150	
2014	Ford	Truck	F150	
2015	Toyota	Truck	Tundra	
2015	Ford	SUV	Explorer	
2014	Ford	Car	Mustang	
2015	Ford	Truck	F250	
2014	Toyota	Car	Avalon	
2015	Toyota	Car	Avalon	
2014	Ford	Truck	F250	
2015	Ford	SUV	Explorer	
2015	Ford	SUV	Expedition	
2014	Toyota	SUV	Sequoia	
2015	Ford	SUV	Expedition	
2014	Toyota	SUV	Sequoia	
2015	Toyota	SUV	Highlander	

Use a Named Range

1. Use the name of a range in a function instead of the cell addresses themselves. For example: `=sum(price)`
2. Use the dropdown arrow in the name box to quickly move to relevant data in your workbook.

Name box.

Year	Make	Model	Price	Date
2014	Ford	Car	Focus	9/3/2015
2014	Ford	Car	Focus	8/25/2015

Other Functions

Name	Sample Formula	What It Does	Example
AutoSum	=SUM(A1:A5)	Add all the numbers in a range of cells.	Determine the total value of the inventory I have in my store.
Average	=AVERAGE(A1:C5)	Find the average of all the numbers in a range of cells.	Determine the average salary employees in a division of my company make so I can assess pay increases.
Maximum	=MAX(E:E)	Find the largest number in a range of cells.	Determine the highest salary of any of the employees in my division.
Today	=TODAY()	Inserts and automatically updates today's date	Use to determine the age of a vehicle based on the date.

Logical Functions

Name	Sample Formula	What It Does	Example
If	=IF(G6>15,"Advertise","")	Use an if function if you need to return different results based on the outcome of your data.	I need to have a visual notice whenever I have any inventory in my store for more than 60 days.
Count	=COUNT(B:B)	Count checks every cell to see if there is a number in it, then returns the number of cells that do.	Determine the number of events I organized for my company where at least one person showed up.
SumIf	=SUMIF(A1:A35,">65",B1:B35)	Add numbers from a list as long as they meet a criteria you set in the formula.	I want to know the total number of students in my class over the age of 65.
CountIf	=COUNTIF(A:A,16)	Counts every cell that meets a criteria you set in the formula.	I want to know the number of times I have all the seats filled in my classroom.

Absolute vs. Relative Values

Relative Reference

In a normal formula or function, Excel doesn't see an exact cell address. Instead, Excel sees cells in relationship to where the total is going to show up. E.G. If we select C1 and type in the formula =A1+B1, we are not actually asking Excel to add together the values in cells A1 and B1. Instead, we are asking Excel to add value in the cell 2 columns to the left to the value in the cell 1 column to the left of our selected cell.

Absolute Reference

Instead of looking at cells as they are situated in relationship to a selected cell, we need Excel to see "cell C1". The "\$" symbol tells Excel that a cell should be seen as a specific cell instead of as a relative reference. This looks like this

=C\$1+B1

WHERE TO GET MORE HELP:

The Library: come to the desk and ask for help or attend more classes.

LearningExpress Library & Gale Courses

- Available at www.deerparktx.gov/library with your library card
 - Select E-Library | Online Courses | One of the Above
 - Both have tutorials for Word and other Office products.

Microsoft Support:

- Go to <https://support.office.com/>
Select Excel—Offers multiple training videos, tips, and templates.

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