

# Your Excel formulas cheat sheet: 15 tips for calculations and common tasks

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By JD Sartain

Many of us fell in love with Excel as we delved into its deep and sophisticated formula features. Because there are multiple ways to get results, you can decide which method works best for you. For example, there are several ways to enter formulas and calculate numbers in Excel.

## Five ways to enter formulas

### 1. Manually enter Excel formulas:

Long Lists: =SUM(B4:B13)

Short Lists: =SUM(B4,B5,B6,B7); =SUM(B4+B5+B6+B7). Or, place your cursor in the first empty cell at the bottom of your list (or any cell, really) and press the plus sign, then click B4; press the plus sign again and click B5; and so on to the end; then press Enter. Excel adds/totals this list you just “pointed to:” =+B4+B5+B6+B7.

The screenshot displays the Microsoft Excel interface with the 'FORMULAS' tab selected. The 'Insert Function' button (fx) is highlighted in the ribbon. The 'Insert Function' dialog box is open, showing a search for 'sum list' and the 'SUM' function selected from a list. The 'Function Arguments' dialog box is also open, showing the range 'B4:B13' entered for 'Number1'. The spreadsheet background shows a table of berry counts with a 'Totals' row and a formula '=SUM(B4:B13)' in cell B14.

	A	B	C	D	E	F	G
1	Bright Berry Farms						
2							
3	Plants:Trees/Bushes	Inventory					
4	Blueberries	88					
5	Raspberries	76					
6	Strawberries	90					
7	Blackberries	74					
8	Huckleberries	51					
9	Boysenberries	47					
10	Cranberries	65					
11	Mulberries	40					
12	Elderberries	36					
13	Gooseberries	34					
14	Totals	=SUM(B4:B13)					
15	Point	=+B4+B5+B6+B7					
16	Insert Function	=SUM(B4:B13)					

## 2. Click the Insert Function button

Use the Insert Function button under the Formulas tab to select a function from Excel's menu list:

=COUNT(B4:B13) Counts the numbers in a range (ignores blank/empty cells).

=COUNTA(B3:B13) Counts all characters in a range (also ignores blank/empty cells).

## 3. Select a function from a group (Formulas tab)

Narrow your search a bit and choose a formula subset for Financial, Logical, or Date/Time, for example.

=TODAY() Inserts today's date.

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#### 4. The Recently Used button

Click the Recently Used button to show functions you've used recently. It's a welcome timesaver, especially when wrestling with an extra-hairy spreadsheet.

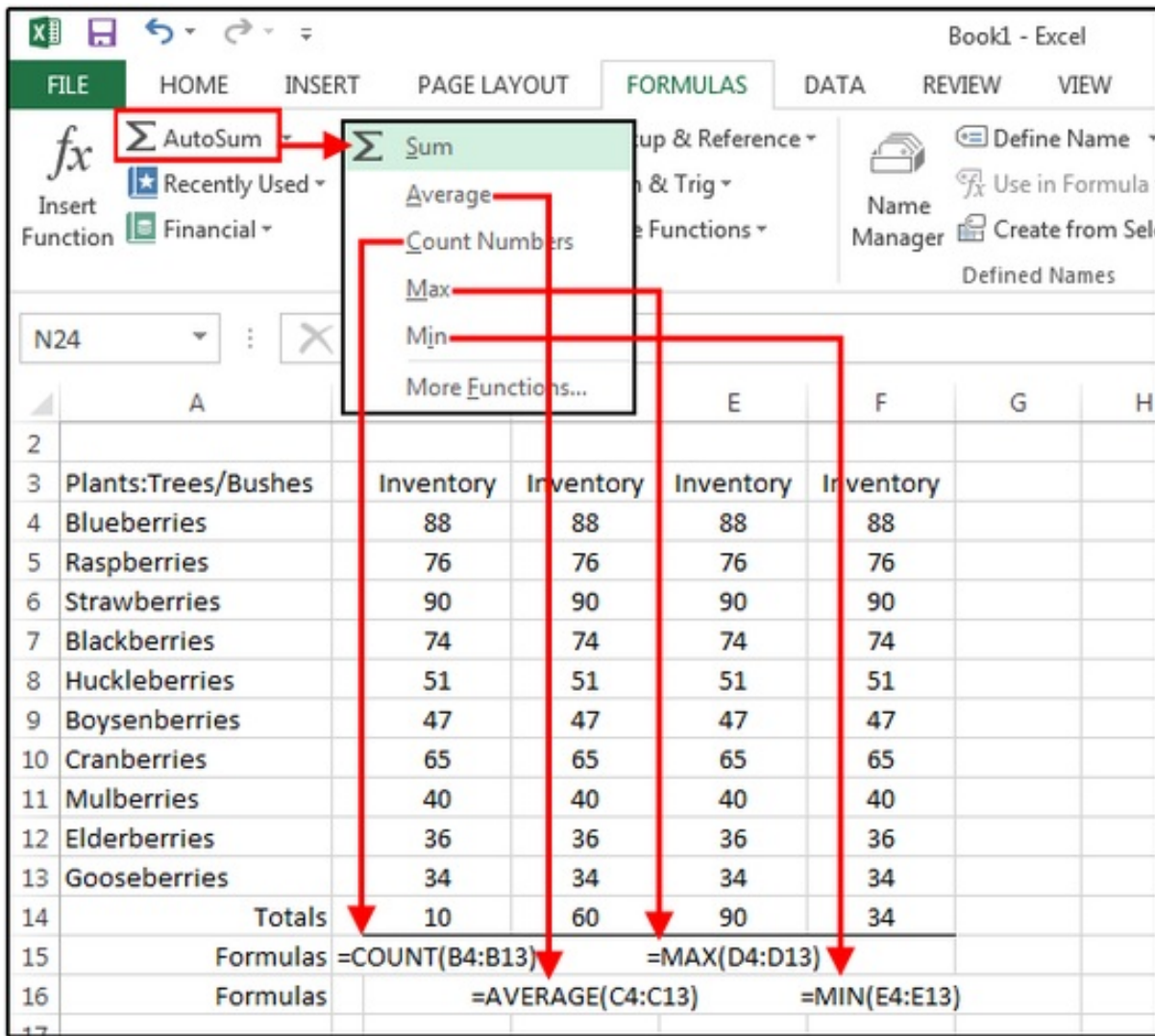
=AVERAGE(B4:B13) adds the list, divides by the number of values, then provides the average.

#### 5. Auto functions under the AutoSum button

Auto functions are my editor's personal favorite, because they're so fast. Select a cell range and a function, and your result appears with no muss or fuss. Here are a few examples:

=MAX(B4:B13) returns the highest value in the list.

=MIN(B4:B13) returns the lowest value in the list.



JD Sartain

Use the AutoSum button to calculate basic formulas such as SUM, AVERAGE, COUNT, etc.

Note: If your cursor is positioned in the empty cell just below your range of numbers, Excel determines that this is the range you want to calculate and automatically highlights the range, or enters the range cell addresses in the corresponding dialog boxes.

**Bonus tip:** With basic formulas, the AutoSum button is the top choice. It's faster to click AutoSum>SUM (notice that Excel highlights the range for you) and press Enter.

**Another bonus tip:** The quickest way to add/total a list of numbers is to position your cursor at the bottom of the list and press Alt+ = (press the Alt key and hold, press the equal sign, release both keys), then press Enter. Excel highlights the range and totals the column.

## Five handy formulas for common tasks

The five formulas below may have somewhat inscrutable names, but their functions save time and data entry on a daily basis.

**Note:** Some formulas require you to input the single cell or range address of the values or text you want calculated. When Excel displays the various cell/range dialog boxes, you can either manually enter the cell/range address, or

cursor and point to it. Pointing means you click the field box first, then click the corresponding cell over in the worksheet. Repeat this process for formulas that calculate a range of cells (e.g., beginning date, ending date, etc.)

## 1. =DAYS

This is a handy formula to calculate the number of days between two dates (so there's no worries about how many days are in each month of the range).

Example: End Date October 12, 2015 minus Start Date March 31, 2015 = 195 days

Formula: =DAYS(A30,A29)

## 2. =NETWORKDAYS

This similar formula calculates the number of workdays (i.e., a five-day workweek) within a specified timeframe. It also includes an option to subtract the holidays from the total, but this must be entered as a range of dates.

Example: Start Date March 31, 2015 minus End Date October 12, 2015 = 140 days

Formula: =NETWORKDAYS(A33,A34)

## 3. =TRIM

TRIM is a lifesaver if you're always importing or pasting text into Excel (such as from a database, website, word processing software, or other text-based program). So often, the imported text is filled with extra spaces scattered throughout the list. TRIM removes the extra spaces in seconds. In this case, just enter the formula once, then copy it down to the end of the list.

Example: =TRIM plus the cell address inside parenthesis.

Formula: =TRIM(A39)



The screenshot shows an Excel spreadsheet with three function argument dialog boxes overlaid. Red arrows indicate the mapping between the dialog boxes and the formulas in the spreadsheet cells.

**Function Arguments (DAYS):** This dialog box is positioned at the top. It shows the function name "DAYS", the "End\_date" field set to "A30" (value 42289), and the "Start\_date" field set to "A29" (value 42094). The description states it returns the number of days between two dates, with a formula result of 195. An arrow points from the "End\_date" field to cell A30 in the spreadsheet, and another arrow points from the "Start\_date" field to cell A29.

**Function Arguments (NETWORKDAYS):** This dialog box is in the middle. It shows the function name "NETWORKDAYS", the "Start\_date" field set to "A33" (value 42094), the "End\_date" field set to "A34" (value 42289), and the "Holidays" field set to "any". The description states it returns the number of whole workdays between two dates, with a formula result of 140. An arrow points from the "Start\_date" field to cell A33, and another arrow points from the "End\_date" field to cell A34.

**Function Arguments (TRIM):** This dialog box is at the bottom. It shows the function name "TRIM", the "Text" field set to "A39" (value "blue hats"). The description states it removes all spaces from a text string except for single spaces between words. An arrow points from the "Text" field to cell A39.

The spreadsheet data is as follows:

	A	B	
28		# of Days	Formula
29	March 31, 2015		
30	October 12, 2015	195	=DAYS(A30,A29)
31			
32		# of Work Days	Formula
33	March 31, 2015		
34	October 12, 2015	140	=NETWORKDAYS(A33,A34)
35			
36	List	Spaces Removed	Formula
37	blue hats	blue hats	=TRIM(A39)
38	gray vests	gray vests	=TRIM(A40)
39	yellow scarves	yellow scarves	=TRIM(A41)
40	brown gloves	brown gloves	=TRIM(A42)
41	red shoes	red shoes	=TRIM(A43)

#### 4. =CONCATENATE

This is another keeper if you import a lot of data into Excel. This formula joins (or merges) the contents of two or

more fields/cells into one. For example: In databases; dates, times, phone numbers, and other multiple data records are often entered in separate fields, which is a real inconvenience. To add spaces between words or punctuation between fields, just surround this data with quotation marks.

Example: =CONCATENATE plus (month,"space",day,"comma space",year) where month, day, and year are cell addresses and the info inside the quotation marks is actually a space and a comma.

Formula: For dates enter: =CONCATENATE(E33," ",F33," ",G33)

Formula: For phone numbers enter: =CONCATENATE(E37,"-",F37,"-",G37)

## 5. =DATEVALUE

DATEVALUE converts the above formula into an Excel date, which is necessary if you plan to use this date for calculations. This one is easy: Select DATEVALUE from the formula list. Click the Date\_Text field in the dialog box, click the corresponding cell on the spreadsheet, then click OK, and copy down. The results are Excel serial numbers, so you must choose Format>Format Cells>Number>Date, and then select a format from the list.

Formula: =DATEVALUE(H33)

## Three more formula tips

As you work with formulas more, keep these bonus tips in mind to avoid confusion:

**Tip 1:** You don't need another formula to convert formulas to text or numbers. Just copy the range of formulas and then paste as Special>Values. Why bother to convert the formulas to values? Because you can't move or manipulate the data until it's converted. Those cells may look like phone numbers, but they're actually formulas, which cannot be edited as numbers or text.

**Tip 2:** If you use Copy and Paste>Special>Values for dates, the result will be text and cannot be converted to a real date. Dates require the DATEVALUE formula to function as actual dates.

**Tip 3:** Formulas are always displayed in uppercase; however, if you type them in lowercase, Excel converts them to uppercase. Also notice there are no spaces in formulas. If your formula fails, check for spaces and remove them.

The image shows two overlapping dialog boxes in Microsoft Excel. The top dialog box is for the **CONCATENATE** function, and the bottom dialog box is for the **DATEVALUE** function. Both dialog boxes have a red arrow pointing from a text input field to a specific cell in the spreadsheet below.

**CONCATENATE Dialog Box:**

- Function: **CONCATENATE**
- Text1: E33 = "January"
- Text2: "" = ""
- Text3: F33 = "1"
- Text4: ", " = ", "
- Text5: G33 = "2015"
- Result: = "January 1, 2015"
- Description: Joins several text strings into one text string. Text5: text1,text2,... are 1 to 255 text strings to be joined into a single text string and can be text strings, numbers, or single-cell references.
- Formula result = January 1, 2015

**DATEVALUE Dialog Box:**

- Function: **DATEVALUE**
- Date\_text: H33 = "January 1, 2015"
- Result: = 42005
- Description: Converts a date in the form of text to a number that represents the date in Microsoft Excel date-time code. Date\_text is text that represents a date in a Microsoft Excel date format, between 1/1/1900 (Windows) or 1/1/1904 (Macintosh) and 12/31/9999.
- Formula result = 42005

**Spreadsheet Data:**

	D	E	F	G	H	I
32			Dates		Joined	Formula
33		January	1	2015	January 1, 2015	=CONCATENATE(E33," ",F33," ",G33)
34		February	14	2015	February 14, 2015	=CONCATENATE(E34," ",F34," ",G34)
35		March	17	2015	March 17, 2015	=CONCATENATE(E35," ",F35," ",G35)
36			Phone Numbers			
37		800	555	1212	800-555-1212	=CONCATENATE(E37,"-",F37,"-",G37)
38		800	522	7711	800-522-7711	=CONCATENATE(E38,"-",F38,"-",G38)
39		877	555	2121	877-555-2121	=CONCATENATE(E39,"-",F39,"-",G39)
40		877	522	1177	877-522-1177	=CONCATENATE(E40,"-",F40,"-",G40)
41						
42		800-555-1212	Copy cells H37 thru H 40			
43		800-522-7711	Paste here as Special>Values		42005	=DATEVALUE(H33)
44		877-555-2121			February 14, 2015	=DATEVALUE(H34)
45		877-522-1177			March 17, 2015	=DATEVALUE(H35)
46						
47						
48						
49						
50						
51						
52						
53						
54						

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