

10 Excel Pro Tips

Formula Techniques that will Save You Time Every Day

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Microsoft Excel MVP | ExcelCampus.com

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About the Author

Hello and welcome to Excel Campus!

Thank you for taking the time to sign up for my email newsletter. My name is Jon Acampora and my goal is to help you improve your Excel skills and save you time with your everyday tasks.

The blog at ExcelCampus.com is filled with articles and videos that contain tips, techniques, and tools to help you learn Excel. I am passionate about learning Excel and want to share that knowledge with you.

I would like ExcelCampus.com to be a place where we can all learn from each other, so I encourage you to leave comments and give me feedback. No question is too simple or silly, so please don't hesitate to ask.

You can read more about me at excelcampus.com/about.

But enough about that, what's this book all about???



Introduction

How much time do you spend writing and editing formulas in Excel?

Most of us spend a lot of time working with formulas, and it's not always easy. As you learn Excel, your formulas tend to get more complex and time consuming to maintain. This is the nature of the Excel beast. Excel can do some amazing formula calculations with unlimited potential, but this means it can also get really complicated.

So I wrote this book to share some of the tricks and techniques I use to save time when working with formulas. I like to find the fastest and most efficient ways to accomplish a task, and this book contains 10 in-depth techniques that will help make you more productive.

The tips in this book focus on Excel features, functions, keyboard shortcuts, and techniques that I use every day. The book includes an **Excel file** that you can use to follow along and try these techniques. The best way to learn is to put that knowledge to into practice immediately.

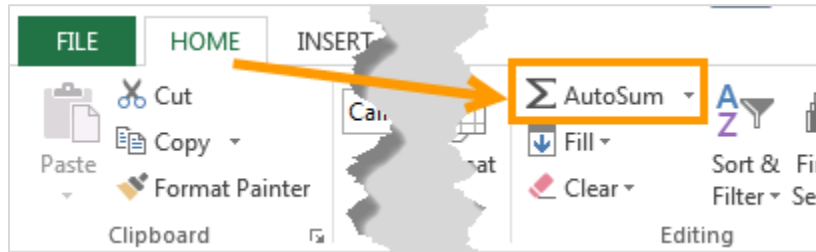
I have tried to make this book compatible for the Mac versions of Excel, and have listed the Mac equivalent keyboard shortcuts where applicable. All the screenshots were taken in Excel 2013 for Windows, but these techniques will be compatible with versions back to Excel 2003.



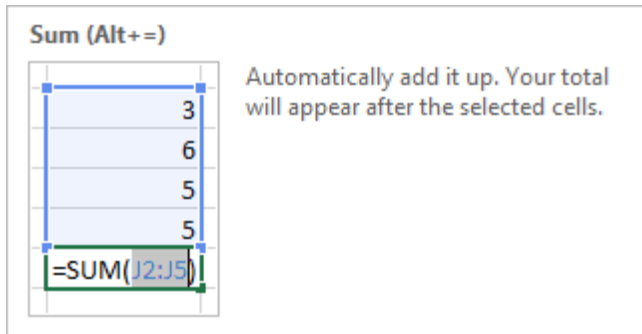
This list of tips will grow over time, and I would love to hear from you and get your thoughts. My contact info is at the end of the book and please send me any tips or techniques that you use to save time. I would love to learn them. Finding that "Ah-Ha" moment where the light bulb clicks on and you learn something new is one of the most enjoyable moments with Excel.

#1 AutoSum – Let Excel Write the Formulas for You

The SUM function is probably the one formula you use the most. And the fastest way to create a sum formula is to have Excel do it for you.



The AutoSum button (located on the Home tab and Formulas in the Ribbon) will automatically create a sum formula for a row or column of numbers. The button is only on the Formulas tab on the Mac.

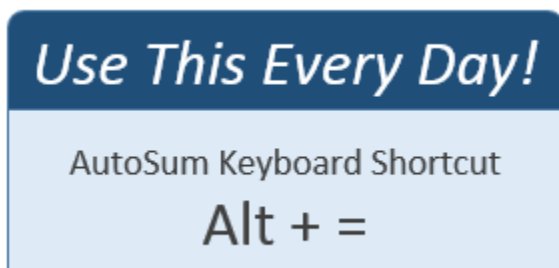


To use AutoSum, simply select a **blank cell below** a column of numbers or to the right of a row of numbers, then click the AutoSum button. That's it! The sum formula will automatically be created.

You can also select all the cells in a row/column that contain numbers, then click the AutoSum button. The sum formula will be created in the first blank cell directly below/adjacent to the selection.

The keyboard shortcut for AutoSum is **Alt+=** (hold down the Alt key, then press the "=" key). The shortcut on the Mac is Command+Shift+T.

The keyboard shortcut is the fastest way to create sum formulas.



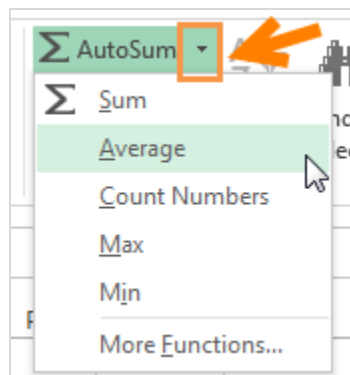
AutoSum can create formulas in multiple cells at the same time.

Simply select a row of blank cells below your data and press Alt+=. The sum formulas will be created in all of the blank selected cells that are below a column or to the right of a row of numbers. This makes creating the formulas even faster. You don't have to create a formula then copy it down/across. AutoSum will do it all for you in one step, and save you tons of time!

Region	Q1	Q2	Q3	Q4		Region	Q1	Q2	Q3	Q4
North	396	644	622	412		North	396	644	622	412
South	702	200	458	729		South	702	200	458	729
East	505	358	609	252		East	505	358	609	252
West	264	403	469	357		West	264	403	469	357
Total						Total	1,867	1,605	2,158	1,750

Select blank cells below columns of numbers.

Press AutoSum button or Alt+= to create formulas for all selected cells.



Clicking the small drop-down arrow to the right of the AutoSum button gives you options to create formulas with other functions (Average, Count, Min, Max).

Advanced Tip: When a column of cells has a filtered applied, using the AutoSum will create a formula with the SUBTOTAL function instead of the SUM function. The SUBTOTAL function displays the sum of the visible cells only. It can also be used for other functions such as COUNT, MIN, MAX, AVERAGE, etc.

Use function_num 1-11 to include manually hidden rows, and 101-111 for filtered ranges.

Region	Q1	Q2	Q3	Q4	Total
North	396	644	622	412	
East	505	358	609	252	
West	264	403	469	357	
Total	=SUBTOTAL(9,D22:D25)				

Apply AutoSum to a filtered list to generate the SUBTOTAL function. Calculates sum of visible cells only.

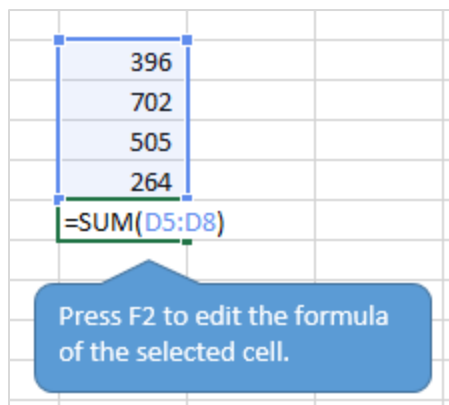
#2 F2 & Escape Keys

Have you ever heard of someone removing the F1 key from their keyboard? It's not uncommon for us Excel junkies to want to do this, and some actually do remove the key.

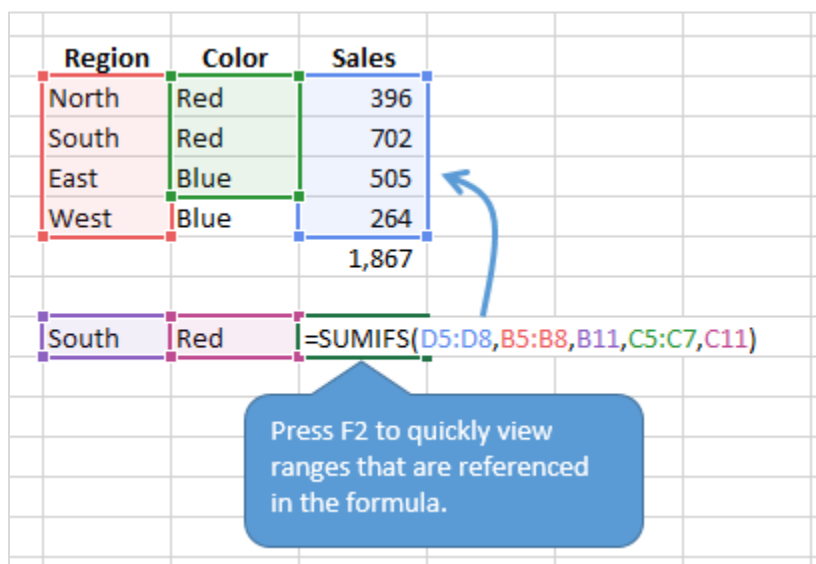
Why? Well once a formula is written, you will probably spend a lot of time editing and modifying it. This is especially true when you are working on someone else's file and learning what their formulas calculate.

The F2 and Escape keys on the keyboard can really save you time when auditing formulas.

Select any cell that contains a formula and **press the F2 key to edit the formula**. This opens the formula for editing directly in the cell. The F2 equivalent on the Mac is Ctrl+U.



You can now use the left and right arrow keys on the keyboard to move the cursor and edit, add, or delete text as needed. This means that you do NOT have to edit the formula in the formula bar that's located above the sheet. Instead, you can edit the formula in the cell, without having to use the mouse.



Pressing the F2 key also allows you to quickly see what cells are being referenced in the formula. In the example above my SUMIFS formula is returning an error. When I select the cell that contains the

formula and press F2, **colored boxes** are drawn around all the ranges that are referenced in the formula. I can quickly see that the **green box** (C5:C7) is not extending down the same amount of rows as the other arguments in the formula.

The **colored boxes** around the ranges are extremely helpful when auditing formulas, and using the F2 key is the fastest way to show these boxes.

The **Escape key** exits the formula edit mode without changing the formula. This allows you to quickly review the formula and its references with the F2 key, then press the Escape key if you do not want to make changes.

Analysts frequently use the F2 and Escape keys when auditing financial models. And the poor F1 key, which is stuck in the middle of these two, tends to get pressed accidentally. It can be frustrating because the F1 key launches the help menu (slowly), and it can really slow you down when trying to quickly navigate around a workbook. But don't let that stop you from using F2 and Escape. These two keys will save you a lot of time when analyzing your formulas.

#3 Quickly Add Multiple Cell References with the Control Key

Often times you will need to calculate the sum of a non-contiguous range. That is a range of cells that is not joined together. The image below shows an example of this. I want to create a formula that sums the Total rows for each product.

	B	C	D
4	Sales by Product	Q1	
5	Product A		
6	Orange	1,231	
7	Blue	2,343	
8	Red	1,125	
9	Product A Total	4,699	←
10	Product B		
11	Green	563	
12	Red	2,131	
13	Product B Total	2,694	←
14	Product C	3,242	
15	Orange	5,443	
16	Red	432	
17	Product C Total	9,117	←
18	Grand Total		
19			
20			
21			
22			
23			

How do I quickly get the sum of the 3 product total rows?

The SUM formula for the Grand Total should be =SUM(C9,C13,C17).

The problem is that typing this formula can take a long time, especially if you have a lot of subtotal rows to sum up.

A quick way to create this formula is to **hold down the Ctrl key on the keyboard**, and select the cells you want to include by **left-clicking the cells with the mouse**.

	B	C	D
4	Sales by Product	Q1	
5	Product A		
6	Orange	1,231	
7	Blue	2,343	
8	Red	1,125	
9	Product A Total	4,699	
10	Product B		
11	Green	563	
12	Red	2,131	
13	Product B Total	2,694	
14	Product C		
15	Orange	5,443	
16	Red	432	
17	Product C Total	5,875	
18	Grand Total	=SUM(C9,C13,C17	
19			
20			
21			
22			
23			

Hold the Ctrl key and select product total cells with the mouse to quickly create a SUM formula.

Here's a step-by-step guide on this technique.

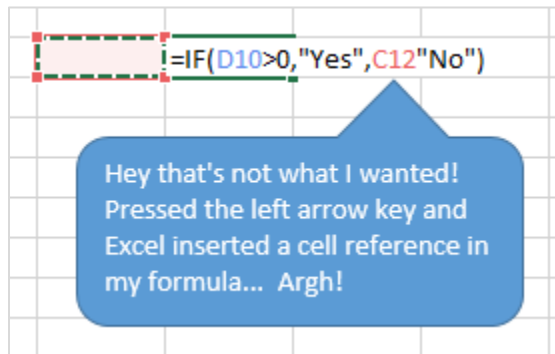
1. Type **=SUM(** in cell C18 to start the formula.
2. Hold down the Ctrl key on the keyboard.
3. Left-click cell C9 with the mouse.
4. Continue to keep the Ctrl key pressed down and left-click cell C13.
5. You will see that the formula now reads: **=SUM(C9,C13**
6. You can continue to left-click additional cells to add them to the formula.
7. When finished, close the formula with a parenthesis **)**
8. Click Enter on the keyboard to enter the formula.

This technique of holding the Ctrl key while selecting multiple cells or ranges to add to a formula will surely save you some time when creating these types of formulas.

This feature is actually built in on the Mac 2011 version, so you won't need to hold down the Ctrl key to select multiple cells/ranges.

#4 Enter and Edit Modes Driving You Crazy?

Have you ever encountered this issue when you are editing a formula and you just wanted to move the cursor left/right in the formula using the arrow key, but instead a new cell reference is inserted in the formula? It can be very frustrating and usually leaves us wondering why it happens sometimes, but not other times.



This behavior is caused by the **formula mode** that Excel is in when you are editing the formula.

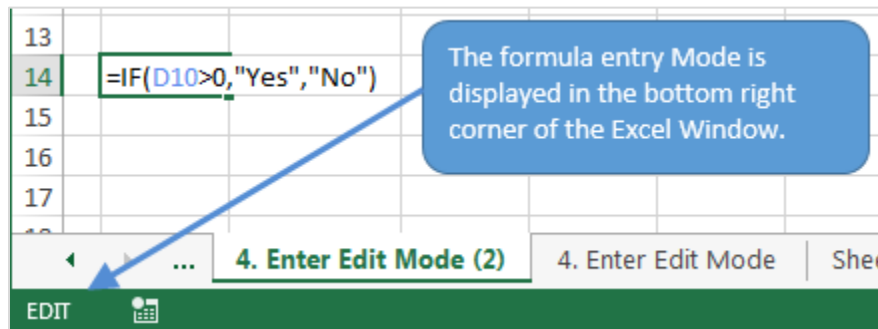
There are two different modes that Excel can be in when you are editing a formula: Edit & Enter.

Edit Mode – When you edit a formula, Excel defaults to Edit Mode. This means you can use the left and right arrow keys on the keyboard to move the cursor within the formula and make changes.

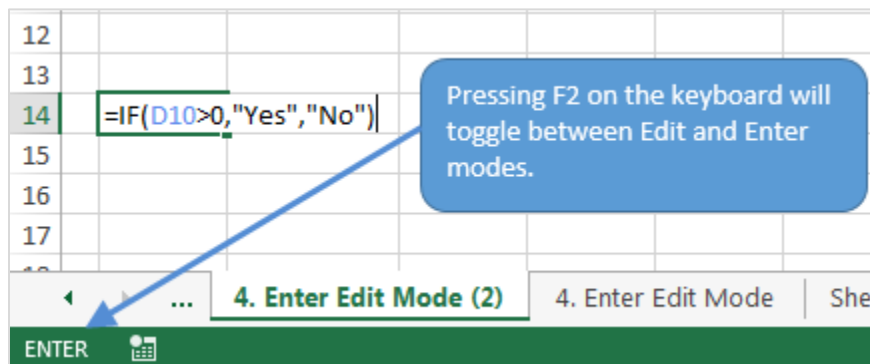
Enter Mode – Enter mode is used for referencing cells or ranges in your formula. Clicking the arrow keys on the keyboard will select cells in the worksheet and automatically add the reference of the selected cell to your formula. This is the mode that can be annoying if you are just trying to move the cursor within your formula.

The screenshots on the next page help explain this...

The current mode is displayed in the bottom left corner of the Excel window. This will only appear when you are editing a formula.



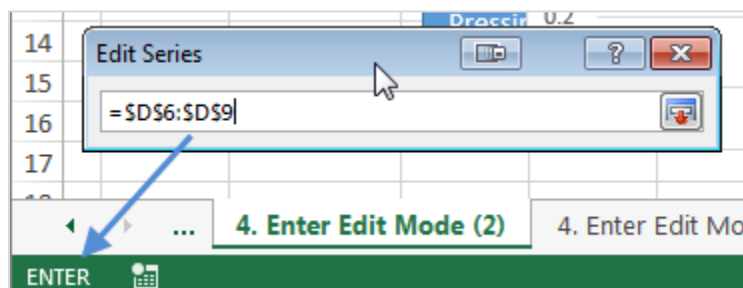
Pressing the **F2** key will toggle between Edit and Enter modes, allowing you to control what happens when you press the arrow keys. The F2 equivalent on the Mac is Ctrl+U.



Edit Mode allows you to move the cursor in the formula with the arrow keys.

Enter Mode allows you to select cells/ranges and adds the references to the formulas when pressing the arrow keys.

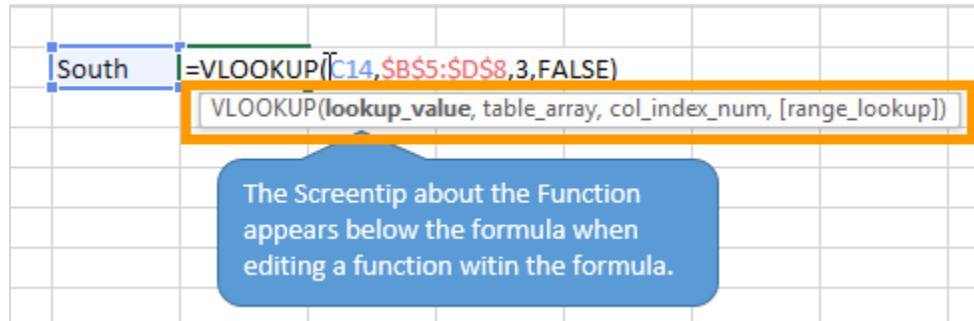
This entry mode applies to other features in Excel where you are prompted to select cells. You will probably run into this problem when modifying the source data for a chart or PivotTable. The following image shows the form that you use to select the data range for a chart.



Enter and Edit modes also apply to these types of forms, and it can be very helpful to know what mode you are in when updating the range. Again, when you are in **Enter Mode** you can use the arrow keys to select the range of cells on the worksheet. **Edit Mode** allows you to move the cursor within the text box.

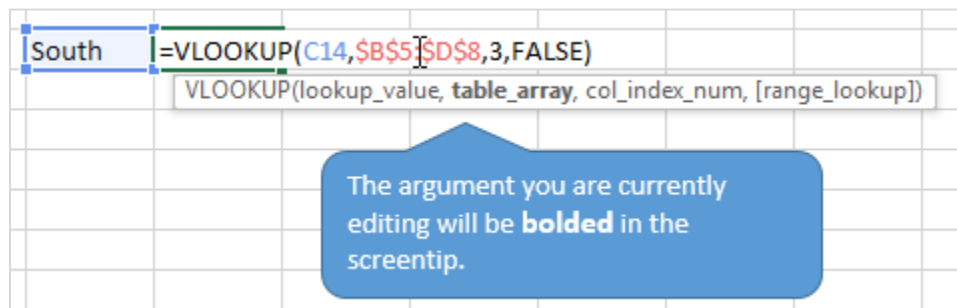
#5 The Function ScreenTip is Packed with Features

I am sure you have noticed this small box that appears below the formula bar or cell when you are editing a formula.

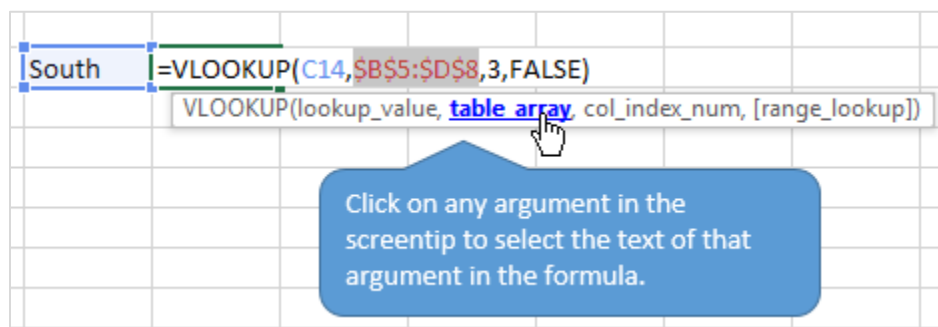


This is the **Function ScreenTip** for the function that you are currently editing, and it is actually quite useful.

The argument in the function that you are currently editing will be displayed in **bold** in the ScreenTip. This makes it easy to see exactly which argument you are editing.



You can click on any of the arguments within the ScreenTip to select the text of that argument.



This makes it very easy to then change or delete the reference. In the example image above, if I want to change the "table_array" reference in the VLOOKUP function, I can click "table_array" in the ScreenTip with my mouse and the corresponding text in the formula will be selected. Then I can select cells in the worksheet to change and replace that reference (`B5:D8`). It is much faster than trying to select the text using the mouse cursor, especially with long formulas that reference other sheets.

The ScreenTip link can also be used to quickly change a cell reference to absolute or relative when used with the F4 key. Here's a quick guide on how to change this **A2:A5** to **\$A\$2:\$A\$5**.

1. Click the ScreenTip argument link to select the text.
2. Press the **F4 key** on the keyboard to change the reference to absolute. This adds the \$ symbol in front of the column letter and row number to anchor the reference.

That's it!

The F4 key (Command+T on Mac) toggles references between relative and absolute. If you select the entire range reference, both cell addresses on either side of the colon : will be updated. That is where the ScreenTip link comes in handy.

The following is quick guide on how the references will change when the F4 key is presses. It is important to note that for the F4 key to work, the cursor must be placed inside the reference or the cell reference must be selected.

Guide to Relative & Absolute References with the F4 Key	
=SUM(A2:A5)	<-Relative Reference
=SUM(<u>\$A\$2:\$A\$5</u>)	<-Press F4 Once - Absolute Reference
=SUM(A\$2:A\$5)	<-Press F4 Twice - Relative Columns & Absolute Rows
=SUM(\$A2:\$A5)	<-Press F4 3rd Time - Relative Rows & Absolute Columns

Clicking on the Function name in the ScreenTip will launch the help menu for that function. The image below shows an example of this. This is a quick way to learn more about the functions you are using.

The screenshot shows an Excel spreadsheet with a table of sales data. A formula bar at the bottom displays the formula `=VLOOKUP(C14,B5:D8,3,FALSE)`. A blue arrow points from the `VLOOKUP` function name in the formula bar to a blue callout box that says "Click the function name to launch the help menu for the function." To the right, the Excel Help window is open, displaying the "VLOOKUP function" article. The help window includes a search bar and a description of the function.

Region	Color	Sales
North	Red	396
South	Red	702
East	Blue	505
West	Blue	264
		1,867

South =VLOOKUP(C14,\$B\$5:\$D\$8,3,FALSE)

Click the function name to launch the help menu for the function.

Excel Help -

Search online help

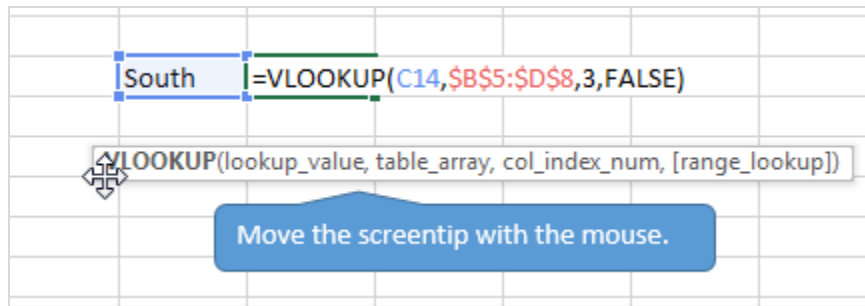
VLOOKUP function

This article describes the formula syntax and uses of the VLOOKUP function in Microsoft Excel.

Description

You can use the VLOOKUP function to search for a value in the first column of a range of cells, and then return a value from any cell on the same row of the range. For example, suppose that you have a list of employees containing their ID numbers in the first column of the range, as shown in the illustration.

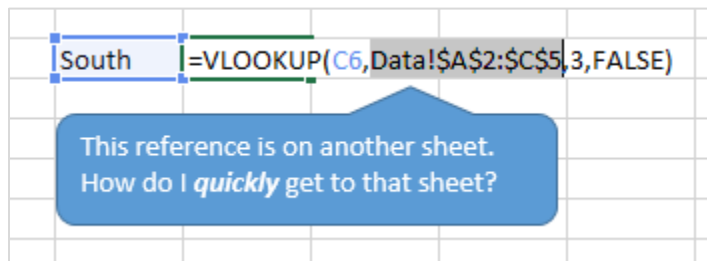
And finally, if the ScreenTip is in your way, you can move it!



Hover the mouse over the left side of the ScreenTip until the cursor changes to the cross arrows. Left-click and hold and drag it to a new location. Sometimes it is nice to move the ScreenTip out of the way if your formula is long and wrapping underneath it.

#6 Quickly Jump To a Cell or Range Reference

If you spend time navigating through your workbook to find a cell or range reference that is on another worksheet, this tip will save you a lot of time.



You can use a combination of the **ScreenTip** and the **Go To** menu to quickly navigate to a cell or range that is referenced in a formula.

The image below shows the three-step process that will jump you right to the range that is referenced in the VLOOKUP formula. From there you can quickly view and change the range in the formula.

South =VLOOKUP(C6,Data!\$A\$2:\$C\$5,3,FALSE)

VLOOKUP(lookup_value, **table_array**, col_index_num, [range_lookup])

1. Press the argument name in the screentip to select it.

2. Press F5 on the Keyboard to open the Go To Menu.

3. Press OK to Go To the worksheet that contains the reference.

Go To

Go to:

SD\$6
SD\$14

The range reference is automatically copied into the Reference box.

Reference:

Data!\$A\$2:\$C\$5

Special... OK Cancel

The **F5** key (Ctrl+G on Mac) on the keyboard is the shortcut to the Go To menu.

After pressing OK on the Go To menu, the sheet in the reference (Data) will be activated and the range will be selected. You can now make changes to the range.

	A	B	C	E	F	G	H
1	Region	Color	Sales				
2	North	Red	396				
3	South	Red	702				
4	East	Blue	505				
5	West	Blue	264				
6	South	Red	702				
7	East	Blue	702				
8	South	Red	702				
9	East	Blue	702				
10							
11							

VLOOKUP(lookup_value, **table_array**, col_index_num, [range_lookup])

You will jump to the 'Data' sheet. The range is highlighted and you can change it if needed.

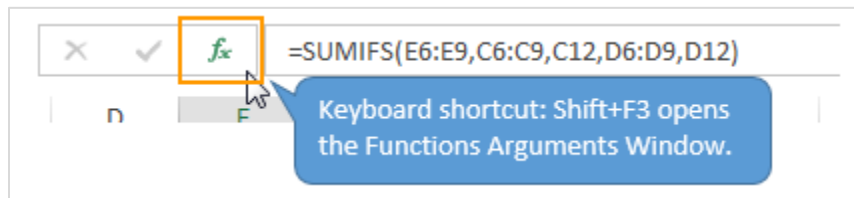
... Data Sheet13 ... + : < >

This technique will help you quickly navigate through your workbook. You won't have to waste time scrolling through worksheets to find the ranges that are referenced in your formulas.

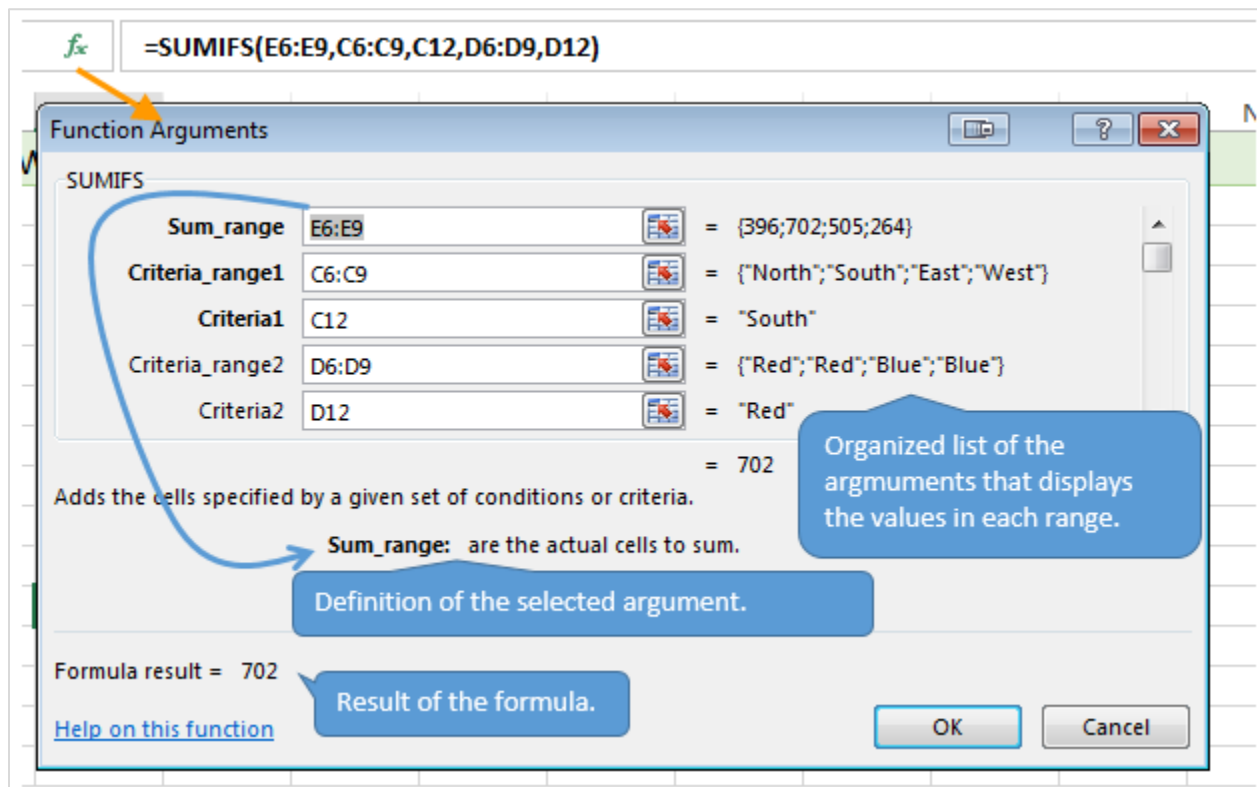
#7 The Functions Argument Window is Your Friend

The Functions Argument Window will provide you with a lot of detailed information about a function in your formula. It can save you time when trying to evaluate a formula to see what is included in it.

The keyboard shortcut **Shift+F3** (Ctrl+A on Mac) is the quickest way to open the window. You can also click the formula icon to the left of the formula bar.



The Function Arguments Window displays an **organized list** of all the arguments in the function. This makes it easy to see the components of the function, especially with longer functions like the SUMIFS function in the image below.



The values within each argument are displayed on the right side of the window. This makes it easy to see exactly what is included in your formula. You can see that the formula is summing column E for the South region and Red color.

The window also displays the **definition** of the selected argument. This is helpful when you are learning the functions and not exactly sure what is required for each argument of the function. The definition

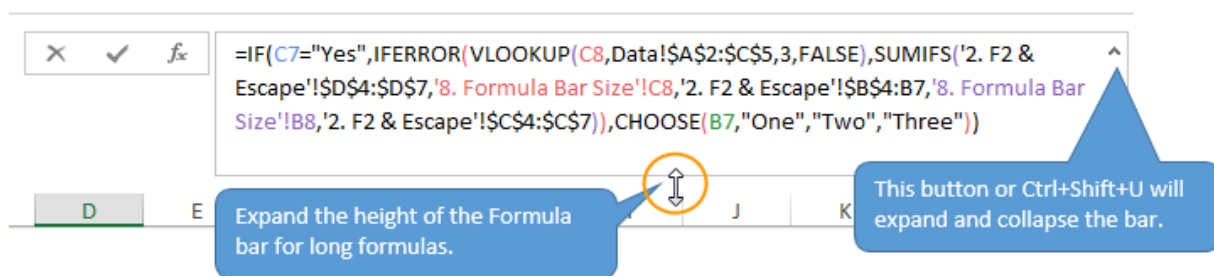
will provide some basic information, and you can click on the “Help on this function” link in the bottom-left corner to open the full help menu.

As your formulas start to get longer and more complex, the Function Arguments Window is a good place to view the formula in a way that won’t make your head spin. It is much easier to look at than a long string of text.

Note: Excel for Mac has a different version of the Function Arguments window. It is called the Formula Builder. It is laid out a little differently than what you see on the images above, but it has the same basic features and should be useful.

#8 Expand the Formula Bar

Speaking of long formulas... When your formula gets really long, you can increase the height of the Formula Bar. This is just a quick tip, but it can be really helpful when viewing long formulas.



In the image above I have a long formula (that is complete non-sense). I can increase the height of the formula bar to view the entire formula by hovering the mouse over the bottom of the formula bar until the cursor changes to vertical arrows. Then left-click and drag the bar down to make it taller.

The keyboard shortcut **Ctrl+Shift+U** (same on the Mac) will automatically expand/collapse the formula bar to the extended height that you have set it at. This keyboard shortcut is especially useful if you are working on a laptop and you want to view as much of the grid as possible. It allows you to quickly collapse the formula bar when you’re not working on a long formula.

#9 [@[Structured References]:[Time Saver]]

Do you use Excel Tables? You know, the colorful tables that look like the following.

	A	B	C	D
3				
4		Region ▼	Color ▼	Sales ▼
5		North	Red	396
6		South	Red	702
7		East	Blue	505
8		West	Blue	264
9		Total		1,867
10				

Well don't worry if you have not used Tables. They are a new/improved feature to Excel 2007 (Excel 2011 for Mac), but they have not become too popular, **yet**.

Tables were designed to save you time when working with your data, and I believe they do really great job of it. What were once time consuming tasks like styling, sorting, filtering, summarizing and rearranging your data, now become extremely quick and easy with Tables.

I have created a video on [10 Awesome Features of Tables](#) that I recommend you watch to learn more about them.

One feature of the Tables is a new formula syntax called **Structured References**.

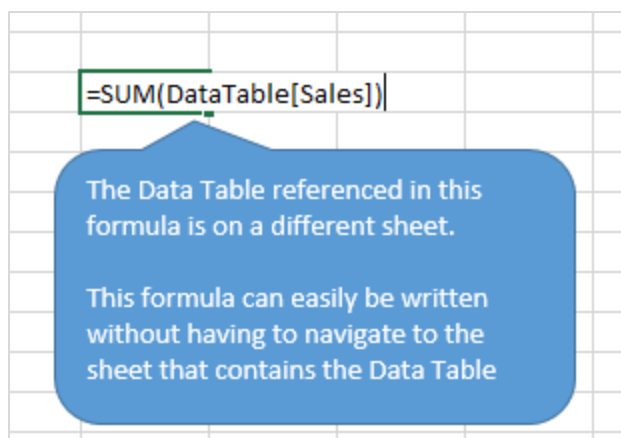
As you can see in the image below, the structured reference syntax uses column names instead of cell addresses. If this cell was NOT in a table the formula would read **=E5/D5**

	A	B	C	D	E	F	G
3							
4		Region ▼	Color ▼	Sales ▼	Profit ▼	Margin ▼	
5		North	Red	396	25	=[@Profit]/[@Sales]	
6		South	Red	702	134	19%	
7		East	Blue	505			

Structured Reference formula syntax with Tables.

The formula that uses structured references in the Table is much different. Instead, it uses the names of the columns in the formula. **This makes formulas much easier to read and write.**

And this is especially true when the table is located on a different sheet. The formulas are much easier to write because you do NOT have to include the sheet name. Formula writing becomes much more intuitive and Tables will definitely save you time.



This does require you to learn a new way to reference cells and ranges in your formulas, and I know some people aren't comfortable with the new style right away. It does take some getting used to, but there are many great time saving benefits to using tables.

An entire book could be written on this topic, but I encourage you to checkout my [Tables video](#) and learn more about them.

#10 Trace Before You Delete

Have you ever wanted to delete an entire sheet, but you're not sure what formulas depend on it and don't want your model to blow up? This is a common problem, especially when you are inheriting a model from someone else and you are not familiar with how it was built.

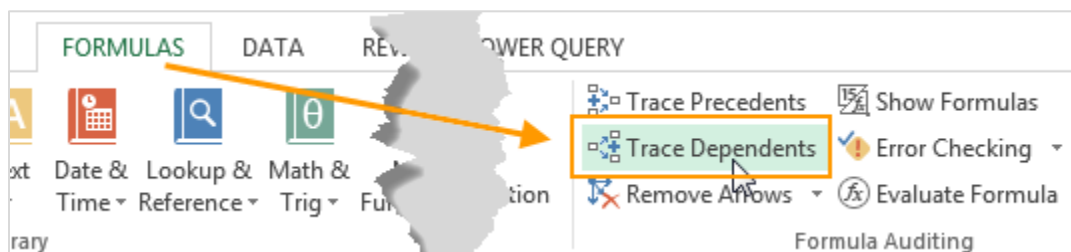
The **Trace Dependents** feature can be your savior here. Before you delete the sheet, you will want to trace the dependents of cells that might be used by other sheets in the workbook. For example, let's say you have a VLOOKUP formula on 'Sheet1' that references the 'Data' sheet.

`=VLOOKUP(A1,Data!B2:D100,2,False)`

If you delete the 'Data' sheet then this formula on 'Sheet 1' will return an error.

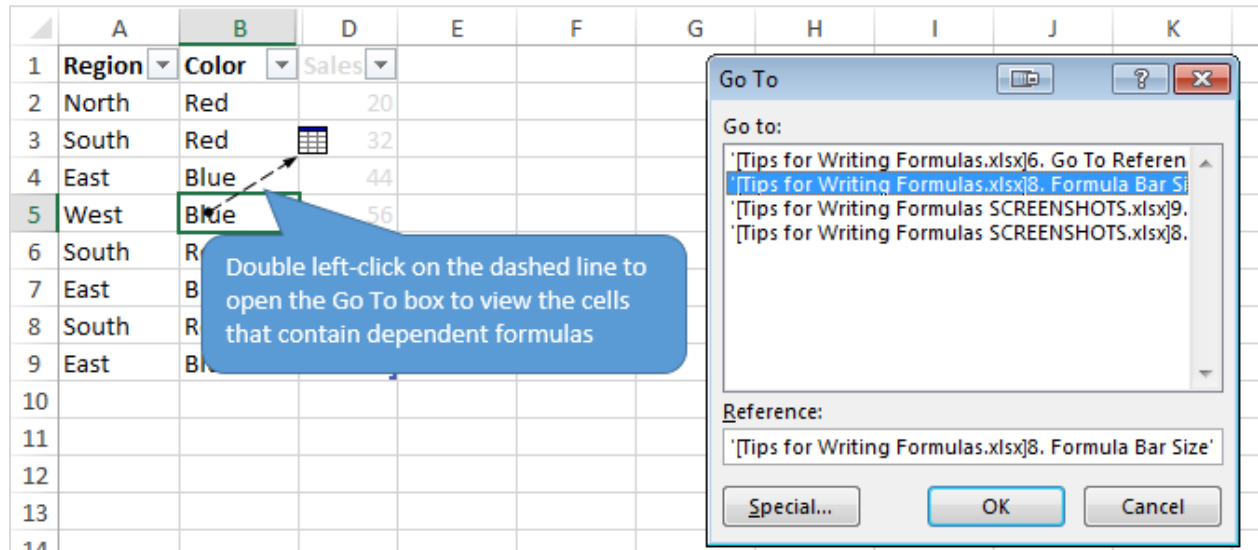
To prevent this you will want to trace the dependent formulas of the cells on the 'Data' sheet to see what formulas rely on them.

Select a cell that might possibly contain references in a formula on another sheet, then press the Trace Dependents button on the Formulas tab in the ribbon.



The keyboard shortcut for Trace Dependents is **Alt+T+U+D** (Ctrl+[on Mac). That's old school Excel 2003, but still works in current versions.

If the Trace Dependents function finds any formulas in other sheets that depend on the selected formula, then a dashed arrow will appear with a spreadsheet icon at the end of it. See the image below.



This spreadsheet icon indicates that there is a dependent formula in another worksheet or workbook. Double-click on the black arrow line and the Go To box will appear. You have to make sure you click on the black dashed line between the selected cell and the spreadsheet icon to get the Go To box to appear. It's not always easy to do.

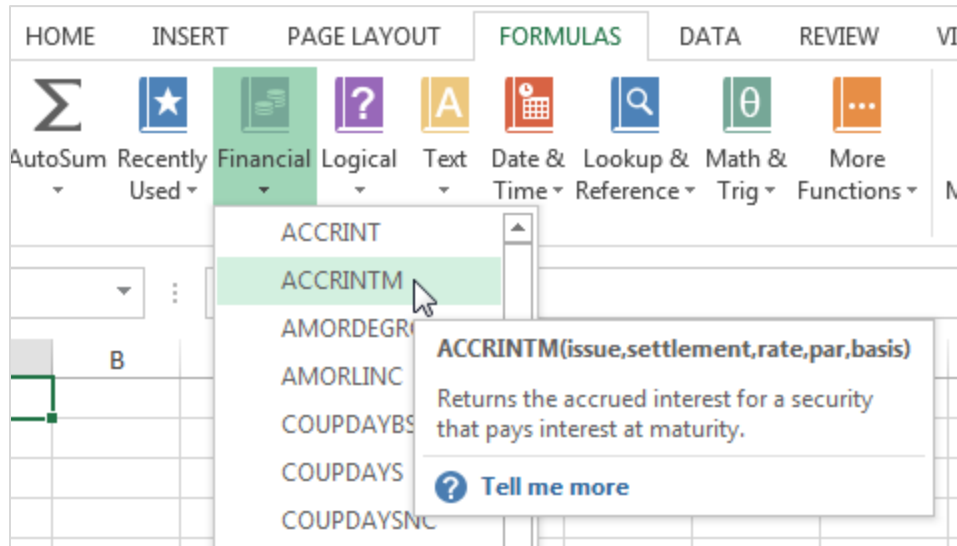
Once the Go To box is open you can double click on any of the entries in the list to Go To that specific cell. Then you will want to review this formula to see if it is still needed, since you will be deleting the sheet that it depends on.

The keyboard shortcut to remove the trace arrows is **Alt+T+U+A**. And **Alt+T+U+T** (Ctrl+[on Mac) traces precedents. **Alt+T+U+F** will open the Evaluate Formula Window. That window is a topic for another discussion, but I wanted to give you all the old school Alt+T+U+... shortcuts that I use.

Conclusion

Well I really hope that you found some useful tips from those 10 techniques. There is always something new to learn with Excel, and I believe that is what makes it fun and challenging to work with.

I encourage you to continue learn more about formulas and functions. One great way to do this is to learn a new function every day. Go to the Formulas tab in the ribbon, click on any of the Function drop-down buttons, hover the mouse over a function you are not familiar with, and press F1 on the keyboard to launch the help menu for the function and read about it. You'll be amazed at what you learn!



So there's tip #11 – Learn a new function every day.

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