



TIPS & TRICKS

EXCEL 2000, 2002 XP



TIPS & TRICKS

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EXCEL 2000

Use AutoFill to Quickly Copy Formulas and Formatting

Would you like an easy way to extend a series of numbers in Microsoft Excel without typing each one individually? With **AutoFill**, you can quickly copy data, formulas, or formatting to adjacent cells. Follow these steps:

1. Select the cells that you would like to copy.
2. Move the cursor to the bottom right corner of the highlighted cells. Your cursor will then turn into a black plus sign.
3. Click and hold down the right mouse button and drag across the cells you want to fill.
4. Release the mouse button, and when the shortcut menu appears, click **Fill Series**.

By following these steps, you will be able to save a lot of time creating your spreadsheets.

Show or Hide the Formulas in an Excel Spreadsheet

When you're working in an Excel worksheet, you can alternate between viewing the values in the cells and displaying the formulas. To toggle between the different views, **press CTRL+`** (single left quotation mark).

Note: If you're having trouble finding the single left quotation mark, it's on the same key as the "~" symbol. On most keyboards, it's the key directly to the left of the "1" key.

Don't Lose Sight of Your Column Headings

Would you like to see the column headings on your Microsoft Excel spreadsheets no matter how far down you scroll? Here is one way to keep the column headings constantly visible:

1. Select the row just below your column headings.
2. On the **Window** menu, click **Freeze Panes**.

The "frozen" column headings don't scroll, but remain visible as you move through the rest of the worksheet.

Edit Cells Quickly in Excel—Without Using Your Mouse

If you like to use your keyboard for everything, editing a lot of data quickly in an Excel spreadsheet can be difficult because you find yourself constantly reaching for the mouse when you want to make changes to a cell. But there's a shortcut you can use so that your hands never have to leave the keyboard—press **F2**. Here's how:

1. Use the arrow keys to select the cell you want to edit.
2. Then press **F2** to edit the cell contents.

3. When you're finished, just press **ENTER** to enter your changes, or press **ESC** to cancel the changes.

Note: This tip is especially handy for editing hyperlinks in Excel because, if you use your mouse to click on a cell with a hyperlink, it automatically opens an Internet browser window. Using the keyboard lets you edit hyperlinks with ease.

Create an Excel Chart with the Push of a Button

This is a very old Microsoft Excel trick. To quickly create a chart, using only your keyboard, select the data you want to plot and then press **F11**. Excel automatically creates the chart for you.

Note: Here is another way to do this trick: After you select your cells, press **ALT+F1** and you'll get the same result.

Select an Entire Range of Cells in Excel

In Excel, if you want to quickly select the entire range of cells you're working on, press **CTRL+SHIFT+ ASTERISK (*)**.

For example, if you have a list of customers in Excel, this command will select the entire list and the column headings, but not the empty cells around the list—so you get only the cells you need. This tip is different from the **Select All** command, which selects every cell in the worksheet—even the ones that you are not using.

Insert Copied Cells between Existing Cells Safely

If you want to insert a range of copied cells between other rows or columns—instead of pasting over them—there's an easy way to do it:

1. Select the cells you want to copy.
2. On the **Edit** menu, click **Copy**.
3. Select the area on the worksheet where you want to place the copied cells.
4. Press **Ctrl + SHIFT + Plus Sign (+)**.
5. In the **Insert** dialog box, click the direction you want to shift the surrounding cells, and press **OK**.

Now, the copied cells are inserted right where you want them, and none of your existing information is lost.

Build Vertical Titles in Excel

Have you ever wondered how to create a heading for a table that runs vertically along the side of a table instead of above it? Here's how to do it:

1. Select the cell that contains your text as well as the surrounding cells that you want your title to span.
2. On the **Format** menu, click **Cells**, and then click the **Alignment** tab.
3. In the degrees text box, enter **90**.
4. Select the **Merge cells** text box and click **OK**.

Format Excel Cells Fast

If you want quick access to the Format Cells dialog box in Microsoft Excel to change things like type style, alignments, or borders, select the cell you want to format and press **CTRL+1**.

Have Excel Save Your Files Automatically

Have you ever wanted Excel to automatically save your spreadsheets for you so you don't lose your work? Excel 2000 includes a feature that saves workbooks automatically at specified intervals, but it's not installed by default. Here's how you can install and use the **AutoSave Add-in**:

First you need to load the add-in, which will add it to your **Tools** menu:

1. On the **Tools** menu, click **Add-Ins**.
2. In the **Add-Ins available** list, select the **AutoSave Add-in** check box and then click **OK**.

Note: If the AutoSave Add-in is not available, you may need to install it. For more instructions, search for the phrase "**Install or remove individual features of Microsoft Office or Excel**" in Excel 2000 Help.

Then, to configure and use the **AutoSave** feature, follow these steps:

1. On the **Tools** menu, click **AutoSave**.
2. Select the **Automatic save every** check box.
3. In the **Minutes** box, enter how often you want Excel to save your workbooks.
4. Select any other options you want, and press **OK**.

Copy the Contents of an Entire Worksheet

Here's a timesaving tip for Excel users who frequently need to copy an entire worksheet (a page within a workbook) of information—such as a list of items for a monthly inventory—from one workbook (Excel file) to another. To copy an entire sheet to another workbook, follow these steps:

1. Open the workbook into which you want to paste the copied sheet.
2. Switch to the workbook that contains the sheet you want to copy.
3. Right-click the **Sheet** tab of the sheet you want to copy, and then click **Move or Copy** on the shortcut menu.
4. From the **To book** drop-down menu, select the workbook that will receive the sheet. (To copy the selected sheet to a new workbook, click **New book** on the drop-down menu.)
5. Select the **Create a copy** check box. (If you don't select this check box, the sheet will be moved instead of copied.)
6. Click **OK**.

Do Fast Calculations in Excel

Have you ever needed to know the largest value in a series of cells? You can create a formula to do that, but there is a faster way. To view the largest value in a series of cells, do the following:

1. Select the cells in which you are interested, and you will see the sum of the range displayed on the status bar, which is the horizontal area below the worksheet window.
2. If the status bar is not displayed, click **Status Bar** on the **View** menu.
3. Right-click the status bar, and then click **Max**. Now you can see the maximum value displayed on the status bar.

You can use the same technique to find the average of, the sum of, or the minimum value in the selected range. You can also count the cells that contain numbers (by selecting **Count Nums**) or count the number of filled cells (by selecting **Count**).

Quickly Move between Multiple Workbooks/Worksheets

When working with several Excel workbooks or worksheets (the individual pages in workbooks) at once, you can quickly move between them using these shortcut keys.

- * To move between open workbooks, press **CTRL+TAB**.
- * To move to the next sheet in a workbook, press **CTRL+PAGE DOWN**.
- * To move to the previous sheet in a workbook, press **CTRL+PAGE UP**.

Completely Delete Cells using this shortcut

Have you ever wanted a keyboard shortcut that completely deletes a cell from your worksheet, including the formatting and comments? Just select the cells you want to delete, and then press **CTRL+MINUS SIGN (-)**. The surrounding cells will shift to fill the space.

This is different from using the **DELETE** or **BACKSPACE** keys, which simply clears the contents of a cell without actually deleting it.

Do Creative Calculations with Paste Special

If you have a block of numeric data in an Excel worksheet and you wish to change each entry to a negative value, use **Paste Special** with a twist. Here's how:

1. In an empty cell, type -1.
2. Select the cell, and click **Copy** on the **Edit** menu.
3. Now select the cells containing the values you want to change.
4. On the **Edit** menu, click **Paste Special**.
5. Under **Paste**, click **Values** and under **Operation**, click **Multiply**.
6. Click **OK**.

All the numbers change from positive to negative, or vice versa. This method is also useful for reducing numbers by a factor of 1,000, 1,000,000, and so on.

Paste Information from Excel as a Picture

Do you want to place an image of an Excel file into a Word document, image editing program, or other program? It's easy to do.

1. On the Excel worksheet or chart sheet, select the cells or click the chart or object you want to copy.
2. Hold down **SHIFT** and click **Copy Picture** on the **Edit** menu.
3. For best picture quality, make sure **As shown on screen** and **Picture** are selected, and then click **OK**.
4. Click the worksheet or other document where you want to paste the picture.
5. Click **Paste** on the **Edit** menu.

To make adjustments to the image after you've pasted it, use the Picture toolbar. (To open it, point to **Toolbars** on the **View** menu and click **Picture**.)

Note: Cell gridlines appear in the picture if they are displayed. To omit gridlines, in Excel click **Options** on the **Tools** menu, click the **View** tab, and then clear the **Gridlines** check box.

Protect Cells Using Data Validation

Here's a creative way to protect cells in an Excel worksheet so that other users can't make changes to them:

1. Select the cells you want to protect. (It's a good idea to make a note of the cells you protect in case you need to remove that protection later.)
2. On the **Data** menu, click **Validation**, and then click the **Settings** tab.
3. Set the following restrictions: In the **Allow** box, click **Text Length**; in the **Data** box, click **between**; in the **Minimum** box, type 10000; and in the **Maximum** box, type 50000.
4. Click the **Error Alert** tab.
5. Make sure the **Show error alert after invalid data is entered** check box is selected. In the **Style** box, click **Stop**.
6. If you want a title to appear in the title bar of the message or in the Office Assistant balloon if the Office Assistant is displayed, type the text in the **Title** box. If you leave the **Title** box blank, the title defaults to **Microsoft Excel**.
7. If you want to display your own text for the message, type the text in the **Error message** box, up to 225 characters. Press **ENTER** to start a new line in the message. If you don't enter any text in the **Error message** box, the message displays the following: "The value you entered is not valid. A user has restricted values that can be entered into this cell."

Excel displays the message only when a user types data in the cell.

To remove data validation settings, select the protected cells, click **Validation** on the **Data** menu, and then click **Clear All**.

Quickly View All Worksheet Formulas

With a quick keystroke, you can display all the formulas in your worksheet, including the serial values Excel uses to store dates.

To alternate between displaying cell values and displaying cell formulas, press **CTRL+`** (single left quotation mark, which usually can be found above the **TAB** key).



EXCEL 2002 XP

Important Note:

You are advised to try TIPS in the **Excel 2000 Tips & Tricks** section as well and do not ignore them. They are also safe and tested to work in the XP version to enhance your output. It does not make a sense; we repeat all those Excel 2000 Tips in this section.

Counting and Summing Data in Excel

Counting and summing are basic spreadsheet operations and they can go a long way to helping you get the most out of Microsoft Excel. The summing and counting formulas should be in the arsenal of every Excel user. The formulas are based on the worksheet in Figure 1 below.

The 12 data rows in **Figure 1** contain sales information for an average company, and consist of three fields: the sales representative, month of the sale, and amount of the sale. The examples of summing and counting formulas will demonstrate how a small company could analyze this data. Your data may more extensive and collected for different purposes, but the formulas will work just the same. After explaining the example formulas, we provide the result of the formulas based on the data shown in **Figure 1**.

	A	B	C
1	SalesRep	Month	Amount
2	Jones	Jan	100
3	Jones	Jan	225
4	Rogers	Jan	400
5	Rogers	Jan	150
6	Rogers	Jan	250
7	Franklin	Jan	800
8	Franklin	Feb	200
9	Jones	Feb	350
10	Franklin	Feb	1200
11	Rogers	Feb	900
12	Franklin	Feb	750
13	Jones	Feb	800

Figure 1: Sample Excel worksheet

Summing and Counting

Getting the sum of numbers—be it for your budget, sales statistics, or inventory—is a common task. Use the **SUM** function in these instances. These formulas return the sum of the numbers in the C column:

- * **Add values within a certain range:** =SUM(C2:C13)
 - o Formula result: 6,125
- * **Add values for an entire range:** =SUM(C:C). New data is often added to an existing table, so the number of rows will vary. This formula adds up the entire column and eliminates the need to edit your formula when new data is inserted.

For counting values, use the **COUNT** function. It returns the number of values in a range and can quickly determine how many cells contain numeric information. This can be helpful, for example, when trying to determine how many months had sales.

- * **Count values in a range:** =COUNT(C2:C13)
 - o Formula result: 12

* **Count values in the entire range:** =COUNT(C:C)

Although column C contains 13 entries, these formulas return 12 because the **COUNT** function only counts numeric values. If you need to count all the cells in a range that contain any information, use the **COUNTA** function, such as: =COUNTA(A:A). This formula will return a result of 13.

Conditional Counting & Summing Using Single Condition

In many cases, you don't want to count or sum all of the records. Rather, you want to focus on records that meet a certain condition, for example, only the sales made by a sales representative. Use the **COUNTIF** and **SUMIF** functions to return these types of results.

Count the Number of Sales by a Sales Representative

The following formula is a straightforward use of the COUNTIF function. It counts the sales made by Jones:

- * =COUNTIF(A2:A13,"Jones")
 - Formula result: 4

You can also write this formula as: =COUNTIF(A2:A13,"=Jones"). If a comparison operator is omitted, Excel assumes "equal to."

Count the Number of Sales Made by Other Sales Reps

This formula counts all the sales not made by Jones:

- * =COUNTIF(A2:A13,"<>Jones")
 - Formula result: 8

Count the Number of Sales Greater than a Target Value

This formula counts the number of sales in C2:C13 that are greater than a target value. In this example, the target value would have to be entered into D1. This **COUNTIF** function accepts a cell reference in the second argument. Also, notice that this formula uses the concatenation operator (&) to join the greater than symbol (>) with the cell reference.

- * =COUNTIF(C2:C13,">"&D1)

Count the Number of Sales Greater than the Sales Average

This formula returns the number of sales that exceed the average sales amount. This formula also shows that you can use a function as the second argument for **COUNTIF**:

- * =COUNTIF(C2:C13,">"&AVERAGE(C2:C13))
 - Formula result: 5

Conditional Summing

The **SUMIF** function is similar to **COUNTIF**, but it uses an additional argument. The first argument refers to the range that is being evaluated, the second argument represents the criteria, and the third argument is the range to be summed.

Add Up Sales in a Given Month

This formula adds up all the sales in January:

- * =SUMIF(B2:B13,"=Jan",C2:C13)
 - Formula result: 1,925

As with the COUNTIF function, an "equal to" condition is assumed if the comparison operator is omitted. The preceding formula could have been written as: =SUMIF(B2:B13,"=Jan",C2:C13).

Add Up Sales Made by Other Sales Representatives

This formula adds up the sales made by sales representatives other than Rogers. It uses a "not equal to" comparison:

- * =SUMIF(A2:A13,"<>Rogers",C2:C13)
 - Formula result: 4,425

Add Up the Sales Greater than a Certain Value

This formula adds up all the values that are greater than 500. In this formula, the condition being evaluated is based on the same range that is being summed:

- * =SUMIF(C2:C13,">500",C2:C13)
 - Formula result: 4,450

Note: The COUNTIF and SUMIF functions can also use wildcard comparison characters. For more information, in Excel Help search for "wildcard."

Conditional Counting and Summing

The formulas in the section return counts or sums based on two or more conditions (Multiple Conditions).

Count the Number of Months a Sales Rep. Made a Sale

This formula counts the number of times Jones made sales in February. It is a conditional counting formula that uses two conditions.

- * =SUMPRODUCT((A2:A13="Jones")*(B2:B13="Feb"))
 - Formula result: 2

Table 1 shows what's going on behind the scenes. The first column shows the result of the first part of the argument. The second column shows the result of the second part of the argument. The last column shows the result of multiplying the first two columns. When both columns are **TRUE**, the result of multiplying similar values is 1. The formula then returns the sum of these multiplications.

Count Months When Sales Greater than a Amount

You can use a formula similar to the one above to work with numeric data. This formula returns the number of rows in which the month is January and the amount is greater than 200.

- * =SUMPRODUCT((B2:B13="Jan")*(C2:C13>200))
 - Formula result: 4

Count the Number of Sales between Specific Values

This formula counts the number of times the sales amount falls between two 200 and 500. The formula uses two conditions: the amount greater than or equal to 200, and the amount less than or equal to 500.

- * =SUMPRODUCT((C2:C13>=200)*(C2:C13<=500))
 - Formula result: 5

Count the Number of Sales Based on Three Conditions

This formula returns the amount when the sales representative is Jones, the month is February, and the amount is greater than 500. This function uses a single argument, which consists of three logical expressions multiplied together. The result is the sum of these products.

- * =SUMPRODUCT((A2:A13="Jones")*(B2:B13="Feb")*(C2:C13>500))
 - Formula result: 1

Add Up a Representative's Sales in One Month

The formula below adds up sales amount based on two conditions: when the sales representative is Jones and the month is February.

- * =SUMPRODUCT((A2:A13="Jones")*(B2:B13="Feb")*(C2:C13))
 - Formula result: 1,150

Add the Combined Sales for Two Sales Representatives

The formula below returns the sum of the sales amount for both Jones and Rogers. This formula uses a single argument and consists of three expressions. Notice, however, that the first two arguments are not multiplied as in the previous examples. Because we are doing a logical OR comparison, they are summed. Summing two logical values results in a value of 1 when either of the expressions is **TRUE**.

- * =SUMPRODUCT(((A2:A13="Jones")+(A2:A13="Rogers"))*(C2:C13))
 - Formula result: 3,175

Stop Avoiding Using Formulas in Excel

Microsoft Excel formulas aren't what you think they are. They're not complicated bundles of keystrokes and symbols designed to boost the egos of only accountants or tax attorneys. In fact, sometimes a formula has nothing to do with numbers at all.

Simply speaking, formulas are equations that perform calculations on values in your worksheet. These values can be numbers, dates, text, or anything else you can type into a cell. Here are a couple of useful things you can do with formulas:

- * Convert times (such as from standard time format to decimal format)
- * Calculate a running balance
- * Calculate the difference between two numbers as a percentage
- * Remove spaces from the beginning and end of a cell
- * Count unique entries in a list

Take a little time to learn about Excel formulas. Once you get the hang of it, using them, can really save you time and enable you to do complicated things you never thought possible.

About formulas

Formulas are equations that perform calculations on values in your worksheet. A formula starts with an equal sign (=). For example, the following formula multiplies 2 by 3 and then add 5 to the result.

=5+2*3

A formula can also contain any or all of the following:

- functions,
- references,
- operators, and
- constants.

Parts of a formula

1. Functions: The PI() function returns the value of pi: 3.142...
2. References (or names): A2 returns the value in cell A2.
3. Constants: Numbers or text values entered directly into a formula, such as 2.
4. Operators: The ^ (caret) operator raises a number to a power, and the * (asterisk) operator multiplies.

About functions in formulas

Functions are predefined formulas that perform calculations by using specific values, called arguments, in a particular order, or structure. Functions can be used to perform simple or complex calculations. For example, the ROUND function rounds off a number in cell A10.



ROUND(number, num_digits)

Structure of a function

1. Structure.

The structure of a function begins with an equal sign (=), followed by the function name, an opening parenthesis, the arguments for the function separated by commas, and a closing parenthesis.

2. Function name.

For a list of available functions, click a cell and press **SHIFT+F3**.

3. Arguments.

Arguments can be numbers, text, logical values such as **TRUE** or **FALSE**, arrays, error values such as **#N/A**, or cell references. The argument you designate must produce a valid value for that

argument. Arguments can also be constants, formulas, or other functions.

4. Argument tooltip.

A tooltip with the syntax and arguments appears as you type the function. For example, type **=ROUND** (and the tooltip appears.) Tooltips only appear for built-in functions.

5. Entering formulas

When you create a formula that contains a function, the **Insert Function** dialog box helps you enter worksheet functions. As you enter a function into the formula, the **Insert Function** dialog box displays the name of the function, each of its arguments, a description of the function and each argument, the current result of the function, and the current result of the entire formula.

Nested functions

In certain cases, you may need to use a function as one of the arguments of another function. For example, the following formula uses a nested **AVERAGE** function and compares the result with the value 50.

| Nested functions

```
=IF(AVERAGE(F2:F5)>50,SUM(G2:G5),0)
```

Valid returns

When a nested function is used as an argument, it must return the same type of value that the argument uses. For example, if the argument returns a **TRUE** or **FALSE** value, then the nested function must return a **TRUE** or **FALSE**. If it doesn't, Microsoft Excel displays a **#VALUE!** error value.

Nesting level limits

A formula can contain up to seven levels of nested functions. When Function B is used as an argument in Function A, Function B is a second-level function. For instance, the **AVERAGE** function and the **SUM** function are both second-level functions because they are arguments of the **IF** function. A function nested within the **AVERAGE** function would be a third-level function, and so on.

About References in Formulas

A reference identifies a cell or a range of cells on a worksheet and tells Microsoft Excel where to look for the values or data you want to use in a formula. With references, you can use data contained in different parts of a worksheet in one formula or use the value from one cell in several formulas. You can also refer to cells on other sheets in the same workbook, and to other workbooks. References to cells in other workbooks are called links.

The A1 Reference Style

By default, Excel uses the A1 reference style, which refers to columns with letters (A through IV, for a total of 256 columns) and refers to rows with numbers (1 through 65536). These letters and numbers are called row and column headings. To refer to a cell, enter the column letter

followed by the row number. For example, B2 refers to the cell at the intersection of column B and row 2.

To refer to	Use
The cell in column A and row 10	A10
The range of cells in column A and rows 10 through 20	A10:A20
The range of cells in row 15 and columns B through E	B15:E15
All cells in row 5	5:5
All cells in rows 5 through 10	5:10
All cells in column H	H:H
All cells in columns H through J	H:J
The range of cells in columns A through E and rows 10 through 20	A10:E20

Reference to another worksheet

In the following example, the **AVERAGE** worksheet function calculates the average value for the range B1:B10 on the worksheet named Marketing in the same workbook.

=AVERAGE(Marketing!B1:B10)

Link to another worksheet in the same workbook

Note that the name of the worksheet and an exclamation point (!) precede the range reference.

The difference between relative and absolute references

Relative references

A relative cell reference in a formula, such as A1, is based on the relative position of the cell that contains the formula and the cell the reference refers to. If the position of the cell that contains the formula changes, the reference is changed.

If you copy the formula across rows or down columns, the reference automatically adjusts. By default, new formulas use relative references. For example, if you copy a relative reference in cell B2 to cell B3, it automatically adjusts from =A1 to =A2.

	A	B
1	■	
2	■	=A1
3		=A2

Copied formula with relative reference

Absolute references

An absolute cell reference in a formula, such as `A1`, always refer to a cell in a specific location. If the position of the cell that contains the formula changes, the absolute reference remains the same. If you copy the formula across rows or down columns, the absolute reference does not adjust. By default, new formulas use relative references, and you need to switch them to absolute references. For example, if you copy a absolute reference in cell B2 to cell B3, it stays the same in both cells `=A1`.

	A	B
1	█	
2		<code>=\$A\$1</code>
3		<code>=\$A\$1</code>

Copied formula with absolute reference

Mixed references

A mixed reference has either an absolute column and relative row, or absolute row and relative column. An absolute column reference takes the form `$A1`, `$B1`, and so on. An absolute row reference takes the form `A$1`, `B$1`, and so on. If the position of the cell that contains the formula changes, the relative reference is changed, and the absolute reference does not change. If you copy the formula across rows or down columns, the relative reference automatically adjusts, and the absolute reference does not adjust. For example, if you copy a mixed reference from cell A2 to B3, it adjusts from `=A$1` to `=B$1`.

	A	B	C
1	█	█	
2		<code>=A\$1</code>	
3			<code>=B\$1</code>

Copied formula with mixed reference

The 3-D Reference Style

If you want to analyze data in the same cell or range of cells on multiple worksheets within the workbook, use a 3-D reference. A 3-D reference includes the cell or range reference, preceded by a range of worksheet names. Excel uses any worksheets stored between the starting and ending names of the reference. For example, `=SUM(Sheet2:Sheet13!B5)` adds all the values contained in cell B5 on all the worksheets between and including Sheet 2 and Sheet 13.

- * You can use 3-D references to refer to cells on other sheets, to define names, and to create formulas by using the following functions: **SUM**, **AVERAGE**, **AVERAGEA**, **COUNT**, **COUNTA**, **MAX**,

MAXA, MIN, MINA, PRODUCT, STDEV, STDEVA, STDEVP, STDEVPA, VAR, VARA, VARP, and VARPA.

- * 3-D references cannot be used in array formulas.
- * 3-D references cannot be used with the intersection operator (a single space) or in formulas that use implicit intersection.

The 3-D References

The 3-D references change when you move, copy, insert, or delete worksheets. The following examples explain what happens when you move, copy, insert, or delete worksheets that are included in a 3-D reference. The examples use the formula =SUM(Sheet2:Sheet6!A2:A5) to add cells A2 through A5 on worksheets 2 through 6.

Insert or copy

If you insert or copy sheets between Sheet2 and Sheet6 (the endpoints in this example), Microsoft Excel includes all values in cells A2 through A5 from the added sheets in the calculations.

Delete

If you delete sheets between Sheet2 and Sheet6, Excel removes their values from the calculation.

Move

If you move sheets from between Sheet2 and Sheet6 to a location outside the referenced sheet range, Excel removes their values from the calculation.

Move an endpoint

If you move Sheet2 or Sheet6 to another location in the same workbook, Excel adjusts the calculation to accommodate the new range of sheets between them.

Delete an endpoint

If you delete Sheet2 or Sheet6, Excel adjusts the calculation to accommodate the range of sheets between them.

The R1C1 Reference Style

You can also use a reference style where both the rows and the columns on the worksheet are numbered. The R1C1 reference style is useful for computing row and column positions in macros. In the R1C1 style, Excel indicates the location of a cell with an "R" followed by a row number and a "C" followed by a column number.

Reference	Meaning
R[-2]C	A relative reference to the cell two rows up and in the same column
R[2]C[2]	A relative reference to the cell two rows down and two columns to the right

R2C2	An absolute reference to the cell in the second row and in the second column
R[-1]	A relative reference to the entire row above the active cell
R	An absolute reference to the current row

When you record a macro, Excel records some commands by using the R1C1 reference style. For example, if you record a command such as clicking the **AutoSum** button to insert a formula that adds a range of cells, Excel records the formula by using R1C1 style, not A1 style, references.

To turn R1C1 reference style on or off

1. Click **Options** on the **Tools** menu, and then click the **General** tab.
2. Under **Settings**, select or clear the **R1C1 reference style** check box.

About Names in Formulas

You can use the labels of columns and rows on a worksheet to refer to the cells within those columns and rows. Or you can create descriptive names to represent cells, ranges of cells, formulas, or constant values. Labels can be used in formulas that refer to data on the same worksheet; if you want to represent a range on another worksheet, use a name.

Using names to represent cells, constants, or formulas

A defined name in a formula can make it easier to understand the purpose of the formula. For example, the formula

=SUM(FirstQuarterSales) might be easier to identify than
=SUM(C20:C30).

Names are available to any sheet. For example, if the name ProjectedSales refers to the range A20:A30 on the first worksheet in a workbook, you can use the name ProjectedSales on any other sheet in the same workbook to refer to range A20:A30 on the first worksheet.

Names can also be used to represent formulas or values that do not change (constants). For example, you can use the name SalesTax to represent the sales tax amount (such as 6.2 percent) applied to sales transactions.

You can also link to a defined name in another workbook, or define a name that refers to cells in another workbook. For example, the formula =SUM(Sales.xls!ProjectedSales) refers to the named range ProjectedSales in the workbook named Sales.

Guidelines for Names

What characters are allowed?

The first character of a name must be a letter or an underscore character. Remaining characters in the name can be letters, numbers, periods, and underscore characters.

Can names be cell references?

Names cannot be the same as a cell reference, such as Z\$100 or R1C1.

Can more than one word be used?

Yes, but spaces are not allowed. Underscore characters and periods may be used as word separators — for example, Sales_Tax or First.Quarter.

How many characters can be used?

A name can contain up to 255 characters.

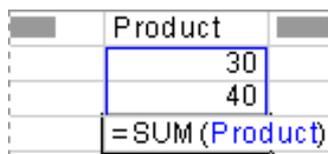
Note: If a name defined for a range contains more than 253 characters, you cannot select it from the **Name** box.

Are names case sensitive?

Names can contain uppercase and lowercase letters. Microsoft Excel does not distinguish between uppercase and lowercase characters in names. For example, if you have created the name Sales and then create another name called SALES in the same workbook, the second name will replace the first one.

Using Existing Row and Column Labels as Names

When you create a formula that refers to data in a worksheet, you can use the column and row labels in the worksheet to refer to the data. For example, to calculate the total value for the Product column, use the formula =SUM(Product).



	Product
	30
	40
	=SUM(Product)

Using a Label

Or if you need to refer to the Product 3 amount for the East division (that is, the value 110.00), you can use the formula =Product 3 East. The space in the formula between "Product 3" and "East" is the intersection operator. This operator designates that Microsoft Excel should find and return the value in the cell at the intersection of the row labeled East and the column labeled Product 3.

Note: By default, Excel does not recognize labels in formulas. To use labels in formulas, click **Options** on the **Tools** menu, and then click the **Calculation** tab.

Under **Workbook** options, check the **Accept labels in formulas** box.

Stacked Labels

When you use labels for the columns and rows on your worksheet, you can use those labels to create formulas that refer to data on the worksheet. If your worksheet contains stacked column labels — in which a label in one cell is followed by one or more labels below it — you can use the stacked labels in formulas to refer to data on the worksheet. For example, if the label West is in cell E5 and the label Projected is in cell E6,

the formula =SUM(West Projected) returns the total value for the West Projected column.

The Order for Stacked Labels

When you refer to information by using stacked labels, you refer to the information in the order in which the labels appear, from top to bottom. If the label West is in cell F5 and the label Actual is in cell F6, you can refer to the actual figures for West by using West Actual in a formula. For example, to calculate the average of the actual figures for West, use the formula =AVERAGE(West Actual).

Using Dates as Labels

When you label a range by using the **Label Ranges** dialog box and the range contains a year or date as a label, Excel defines the date as a label by placing single quotation marks around the label when you type the label in a formula. For example, suppose your worksheet contains the labels 2007 and 2008 and you have specified these labels by using the **Label Ranges** dialog box. When you type the formula =SUM(2008), Excel automatically updates the formula to =SUM('2008').

About Calculation Operators in Formulas

Operators specify the type of calculation that you want to perform on the elements of a formula. Microsoft Excel includes four different types of calculation operators: arithmetic, comparison, text, and reference.

Types of Operators

Arithmetic operators

To perform basic mathematical operations such as addition, subtraction, or multiplication; combine numbers; and produce numeric results, use the following arithmetic operators.

Arithmetic operator	Meaning (Example)
+ (plus sign)	Addition (3+3)
- (minus sign)	Subtraction (3-1) Negation (-1)
* (asterisk)	Multiplication (3*3)
/ (forward slash)	Division (3/3)
% (percent sign)	Percent (20%)
^ (caret)	Exponentiation (3^2)

Comparison operators

You can compare two values with the following operators. When two values are compared by using these operators, the result is a logical value either TRUE or FALSE.

Comparison operator	Meaning (Example)
= (equal sign)	Equal to (A1=B1)

> (greater than sign)	Greater than (A1>B1)
< (less than sign)	Less than (A1<B1)
>= (greater than or equal to sign)	Greater than or equal to (A1>=B1)
<= (less than or equal to sign)	Less than or equal to (A1<=B1)
<> (not equal to sign)	Not equal to (A1<>B1)

Text concatenation operator

Use the ampersand (&) to join, or concatenate, one or more text strings to produce a single piece of text.

Text operator	Meaning (Example)
& (ampersand)	Connects, or concatenates, two values to produce one continuous text value ("North"&"wind")

Reference operators

Combine ranges of cells for calculations with the following operators.

Reference operator	Meaning (Example)
: (colon)	Range operator, which produces one reference to all the cells between two references, including the two references (B5:B15)
, (comma)	Union operator, which combines multiple references into one reference (SUM(B5:B15,D5:D15))
(space)	Intersection operator, which produces one reference to cells common to the two references (B7:D7 C6:C8)

The Order, Excel Performs Operations in Formulas

Formulas calculate values in a specific order. A formula in Excel always begins with an equal sign (=). The equal sign tells Excel that the succeeding characters constitute a formula. Following the equal sign are the elements to be calculated (the operands), which are separated by calculation operators. Excel calculates the formula from left to right, according to a specific order for each operator in the formula.

Operator precedence

If you combine several operators in a single formula, Excel performs the operations in the order shown in the following table. If a formula contains operators with the same precedence — for example, if a formula contains both a multiplication and division operator — Excel evaluates the operators from left to right.

Operator	Description
: (colon) , (comma) (single space)	Reference operators

-	Negation (as in -1)
%	Percent
^	Exponentiation
* and /	Multiplication and division
+ and -	Addition and subtraction
&	Connects two strings of text (concatenation)
= < > <= >= <>	Comparison

Use of parentheses

To change the order of evaluation, enclose in parentheses the part of the formula to be calculated first. For example, the following formula produces 11 because Excel calculates multiplication before addition. The formula multiplies 2 by 3 and then adds 5 to the result.

=5+2*3

In contrast, if you use parentheses to change the syntax, Excel adds 5 and 2 together and then multiplies the result by 3 to produce 21.

=(5+2)*3

In the example below, the parentheses around the first part of the formula force Excel to calculate B4+25 first and then divide the result by the sum of the values in cells D5, E5, and F5.

=(B4+25)/SUM(D5:F5)

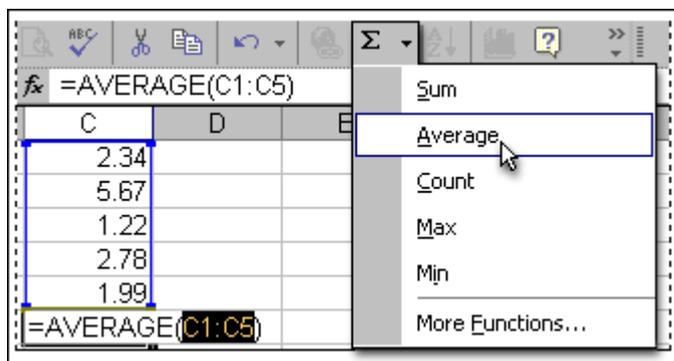
About constants in formulas

A constant is a value that is not calculated. For example, the date 10/9/2008, the number 210, and the text "Quarterly Earnings" are all constants. An expression, or a value resulting from an expression, is not a constant. If you use constant values in the formula instead of references to the cells (for example, =30+70+110), the result changes only if you modify the formula yourself.

Building Formulas Faster in Excel 2002

Microsoft Excel 2002 provides more tools to help you build formulas that use functions faster and more easily than ever before. Don't just AutoSum — AutoAverage, AutoCount, and more!

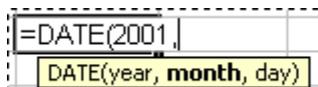
Previous versions of Excel included the AutoSum button, which allowed you to calculate the sum of a range of cells with the click of a button. Now, clicking the same button also gives you the opportunity to automatically average, count, or get the maximum or minimum value in a range. Just select a range of values, then click the arrow on the **AutoSum** button, and click the operation you want -- **Sum**, **Average**, **Count**, **Max** or **Min**.



ScreenTips will help!

Enter function arguments with ease

Now, when you start typing a formula that includes a function, Excel provides on the spot help by displaying a screen tip that shows the arguments necessary for the function. Each time you enter an argument, the next argument in the function is highlighted for you. Additionally, if you click on the function name in the ScreenTip, a Help topic with more information and examples for using that function is displayed.



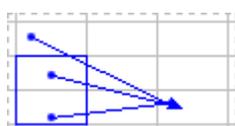
Let Excel show you where the errors are

Like a spelling checker, Excel 2002 provides an error checker. You can start it manually by clicking **Error checking** on the **Tools** menu. It will check formulas for error values, for numbers stored as text, for formulas referring to empty cells, and more.

When background error checking is enabled (as it is by default), you don't even have to start the error checker manually. Excel indicates a formula that doesn't follow prescribed standards by placing green triangles in cells with possible errors. If you select the cell, the **Error Checking Options** smart tag is displayed, and you can click the arrow on it to get more information or see a list of options such as **Help on this error**, **Show Calculation Steps**, and **Ignore Error**.

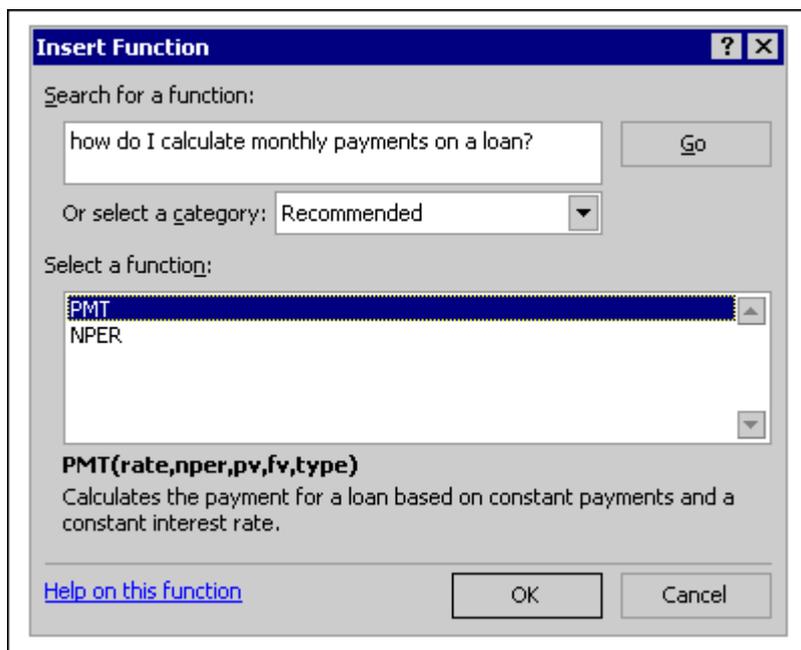


Excel also contains a formula auditing toolbar that, among other options, lets you graphically trace precedent cells (cells with formulas that refer to the cell you're auditing) and dependent cells (cells that the cell you're auditing refer to). In the following illustration, blue indicators point to precedent or dependent cells.



Suggest a new function

Type a natural language question in the **Insert Function** dialog box, and Excel lists possible functions to suit your needs. For example, type "how do I calculate monthly payments on a loan," and Excel suggests using the PMT function (which calculates the payment for a loan) or the NPER function (which returns the number of periods for an investment).



Cut and Paste Function Examples from Help

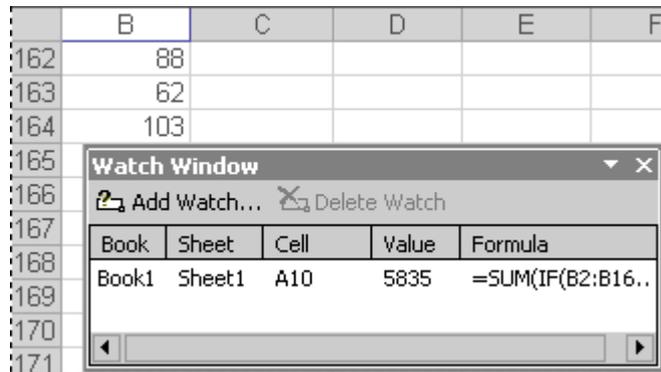
Look up a function, and check out the example at the bottom of the Help pane. You can even cut and paste the example, which includes formulas and data directly from Help onto your worksheet and watch it calculate to get a better idea of how the function works. The following illustration shows what such an example looks like.

	A	B
1	Data	Description
2	8%	Annual interest rate
3	10	Number of months of payments
4	10000	Amount of loan
	Formula	Description (Result)
	=PMT (A2/12, A3, A4)	Monthly payment for a loan with the above terms (-1,037.03)
	=PMT (A2/12, A3, A4, 0, 1)	Monthly payment for a loan with the above terms, except payments are due at the beginning of the period (-1,030.16)

See results in cells without scrolling

The **Watch Window** is an individual window that allows you to see what's going on in cells without having to scroll to the cells themselves. For example, let's say you're entering data on row 162 that may affect

the result of a formula in cell A10. Rather than scrolling back to A10 to see the result of the formula, you can "watch" the value of the formula change from within the window, no matter where you are on the worksheet. You can even watch values on other sheets or in other workbooks. Additionally, you can click the cell reference in the **Watch Window** to move the selection to the cell you're watching. To watch a cell, just right-click the cell and click **Add Watch**.



Evaluate formulas one expression at a time

Even when a formula appears to be entered correctly, the order of the functions or operations may not be correct in order to get the results you want. The Evaluate Formula feature is handy for calculating the different parts of a formula especially nested formula in the order that the formula evaluates them so that you can zero in on the specific part of the formula that may not be working the way you expect.

Evaluating a formula is something like using a debugging tool in a programming environment. It allows you to step in or step out of each section in the formula, and evaluate the section you want.

So, for example, let's say you have the following formula in cell D5:

```
=IF(AVERAGE(B2:B5)<50,SUM(C2:C5),0)
```

This formula says that if the average of the values in cells B2 through B5 is less than 50, then sum the values in the cells C2 through C5; otherwise, return 0.

You can use Evaluate Formula to see the formula evaluated one expression at a time. For example, when you first open the **Evaluate Formula** dialog box, you see the formula with the first expression underlined like this:

```
=IF(AVERAGE(B2:B5)<50,SUM(C2:C5),0)
```

When you click **Evaluate**, the underlined expression is evaluated and the result shown like this (assuming that the values in B2:B5 are 51, 49, 39, and 68):

```
=IF(51.75<50,SUM(C2:C5),0)
```

Click **Evaluate** again and see that because 51.75 is more than 50, that expression evaluates to FALSE:

=IF(FALSE,SUM(C2:C5),0)

and since the expression evaluates to FALSE, the entire expression evaluates to zero.

To evaluate a formula, point to **Formula Auditing** on the **Tools** menu, and then click **Evaluate Formula**.

Note: An option called **Show Calculation Steps** is available on the **Error Checking Options** smart tag menu. This option is similar to Evaluate Formula, except that the first expression is already evaluated when the dialog box is displayed.

Count the number of words in a cell

You can count the number of words in a cell by using the following formula:

=IF(LEN(TRIM(A1))=0,0,LEN(TRIM(A1))-LEN(SUBSTITUTE(A1," ",""))+1)

In this example, imagine that cell A1 contains the text "Have a nice day!", and cell A2 contains the formula. The formula returns a value of 4 to reflect that the cell contains four words separated by spaces. It makes no difference if words are separated by multiple spaces or if words start or end with a space. The TRIM function removes extra spaces, starting spaces, and ending spaces in the text of the cell.

Count the number of words in a worksheet

The easiest way to count the number of words in a worksheet is to export the worksheet to Microsoft Word and use the Word Count feature. For more information about how to use this feature, see Word Help.

Perform Quick Operations on Your Excel Data

Have you ever wanted to quickly perform an operation on your Excel data, without replacing the data? For example, maybe you have some yearly figures, and you want to see what the daily ones look like. It's easy to do, using the **Paste Special** command.

1. Type =365 in a cell.
2. Click **Copy**.
3. Highlight the data for which you want the daily figures.
4. On the **Edit** menu, click **Paste Special**.
5. In the Paste Special dialog box, click **Divide** and then click **OK**.

All of the data you have highlighted will be divided by 365. If you click in any of the cells, you'll see the operation that was performed displayed in the formula bar.

Keep Links to Source Workbooks Up-to-Date

One of the great things about Excel is that you can create formulas in one workbook that link to data stored in another (source) workbook. But, when your source workbook changes regularly (for example, if you update the source and save it under a new name each month), it can be very time-consuming to find and update links to the old source workbook. Fortunately, there's an easy way to do this:

1. Open the workbook that contains the link(s).
2. On the **Edit** menu, click **Links**.
3. In the **Source** box, click the name of the link with the source you would like to change.
4. Click **Change Source**.
5. In the **Change Source** dialog box, click the source workbook you want to refer to.

Note: To successfully change source workbooks, the linked data must reside in the same cells (for example, A15, D24) in the new source workbook as they did in the old.

Links that are not in the Edit Links Dialog Box

Microsoft Excel makes it easy to manage links within a workbook and to check on the status of those links. Just click **Links** on the **Edit** menu to display the **Edit Links** dialog box. Note, however, that the following types of links will not be listed:

- * Links in Web queries containing parameters
- * Links in defined names that are not used in a formula

Use a Shortcut to Insert Time/Date in Excel

Here are a few keyboard shortcuts you can use to insert the current time and date in a Microsoft Access table or Excel spreadsheet.

- * **Current date:** Press **CTRL+SEMICOLON**
- * **Current time:** Press **CTRL+SHIFT+ SEMICOLON**
- * **Current date and time:** Press **CTRL+ SEMICOLON** then **SPACE** then **CTRL+SHIFT+ SEMICOLON**

Note: When you insert the date and time using this tip, the information remains static. To update this information automatically, you must use the TODAY and NOW functions. To learn how to do this, search for **Insert the current date and time in a cell** in Excel Help and then click **Insert a date or time whose value is updated**.

Use your Spreadsheet like a Database with AutoFilter

You can use AutoFilter to analyze the data in your Microsoft Excel spreadsheet based on specific criteria. For example, if you are a salesperson who has a spreadsheet listing all the clients you have in each region you cover, you can use AutoFilter to sort by a specific region and get a snapshot of just the clients in that region. Here's how:

1. Click a cell in the list you want to filter. You should choose a cell that appears in a row that contains a heading and related data, such as a set of client names or phone numbers.
2. On the **Data** menu, point to **Filter**, and then click **AutoFilter**. Arrows appear at the heading of each column.
3. Click an arrow, and choose your filter criteria from the drop-down menu. (For example, you could filter for a number that's greater or less than a target figure.)

Only rows containing data that meet the criteria are displayed. Great for reporting!

Enter more than One Line in an Excel Cell

There are two ways you can display multiple lines of data in a Microsoft Excel 2002 cell.

To enter a line break

- * Press **ALT+ENTER** to start a new line while you're typing or editing data.

To wrap text automatically

1. Click the cell you want.
2. On the **Format** menu, click **Cells** and then the **Alignment** tab.
3. Select the **Wrap text** check box.

Data in the cell will wrap to fit the column width. You can make the column wider or narrower to adjust the width of the data.

Navigate Blocks of Data in Excel

A simple way to navigate through blocks of neighboring data in Excel version 2002 is to use the **END** key in combination with the arrow keys. To move by one block of data within a row or column, press **END** followed by an arrow key. For example, to move to the last (or rightmost) cell in a row of data, press **END+RIGHT ARROW**. Or, to move to the last cell in the worksheet, in the bottom-most used cell of the rightmost used column, press **CTRL+END**.

Draw Borders in Excel Worksheets

For years Microsoft Word users have been able to create tables that meet their own unique specifications. Now, Excel version 2002 offers users a similar feature: Draw Borders. Here's how to use it:

1. On the **Formatting** toolbar, click the arrow next to **Borders**, and then click **Draw Borders** on the palette.
2. On the **Borders** toolbar, click the arrow next to **Draw Border** or **Draw Border Grid**, and then click **Draw Border** on the palette.
3. Do one or more of the following:
 - a. **Draw a border line on cells.** Click the line you want as a border or click and drag on the lines you want as borders.

- b. **Draw an outside border around a row.** Click in the center of a cell and drag across the row.
 - c. **Draw an outside border around a column.** Click in the center of a cell and drag down the column.
4. When you are finished drawing borders, close the **Borders** toolbar to leave Draw Borders mode.

There are some keyboard shortcuts to use with the new **Draw Borders** feature. Here are they:

- * To draw borders around every cell within the row or column, press the **CTRL** key while you drag the cursor.
- * To erase the borders you've drawn around a row or column, press the **SHIFT** key while you drag the cursor across the row or down the column.
- * To erase the borders you've drawn around every cell within a row or column, press **CTRL+SHIFT** while you drag the cursor across the row or down the column.

Note: To apply a different line style to a border, click the arrow next to **Line Style**, and then click a line style on the palette. To apply a different line color to a border, click **Line Color**, and then click a color on the palette.

Hide Whole Worksheets in Excel

You can hide Excel worksheets to reduce the number of sheets on the screen and to prevent unwanted changes. When you hide parts of a workbook, the data disappears from view but is not deleted from the workbook.

1. Select the sheets you want to hide.
2. On the **Format** menu, point to **Sheet**, and then click **Hide**.

Note: You will not be able to hide a worksheet if the workbook has been protected.

Get Easy Access to New AutoSum Functions

In older versions of Excel, the AutoSum feature was handy, but limited. In Excel 2002, the AutoSum button is linked to a longer list of formulas that you can add to your worksheet. With this more powerful AutoSum, you can quickly calculate the average of selected cells, find the maximum or minimum value in a range of values, and much more.

1. Click the cell below the column of numbers, or to the right of the row of numbers, you want to calculate.
2. Click the arrow next to **AutoSum** on the **Standard** toolbar, click the formula you want to use, and then press **ENTER**.

Switch Rows to Columns or Columns to Rows

Maybe you have a column of text that you want to move into a row, so that you can use the text as column labels in a table. Or maybe you have a row of data that you want to move into a table in which the data is

organized in columns. You know it would be tedious to move the data manually, one item at a time. But you may not know that you can use the **Paste** button to quickly transpose a column of data to a row of data, or vice versa.

To switch a row of data to a column, or vice versa

1. Select the cells that you want to switch.
2. On the **Edit** menu, click **Copy**.
3. Select the upper-left cell of the area where you want to paste the data. The paste area must be outside the copy area.
4. Click the arrow to the right of the **Paste** button, and then click **Transpose**.

Data from the top row of the copy area appears in the left column of the paste area, and data from the left column appears in the top row.

Switch between Absolute and Relative Cell References

When you create a formula in Excel, the formula can use relative cell references, which refer to cells relative to the position of the formula, or absolute references, which refer to cells in a specific location. Formulas can also contain a mix of relative and absolute references. An absolute reference is indicated by the \$ symbol. For example, \$B\$1, is an absolute reference to column B, row 1.

When working with formulas, you can easily change column and row references from relative to absolute, and back again by using this handy shortcut:

1. Select the cell that contains the formula.
2. In the formula bar, select the reference you want to change.
3. Press **F4** to toggle through the combinations.

Color-Code Your Excel Sheet Tabs

In Excel 2002, you can color-code sheet tabs for easier identification or grouping of related sheets. Here's how:

1. Select the sheets you want to color by holding down the **CTRL** key and clicking the tabs.
2. On the **Format** menu, point to **Sheet**, and then click **Tab Color**. You can also right-click the sheet tab and then click **Tab Color**.
3. Click the color you want, and click **OK**.

Quickly Calculate a Person's Age in Excel

The **DATEDIF()** function in Excel calculates the number of days, months, or years between two dates. So, this function makes it easy to calculate a person's age. To try this tip, follow these steps:

1. In a blank worksheet, type the birth date in cell A1, using slashes to separate day, month, and year.
2. In cell A2, type **=DATEDIF(A1,TODAY(),"y")** and press **ENTER**.

The age (in years) will be displayed in cell A2.

Note: For more information on the proper syntax to use for the IF worksheet function, search for **IF worksheet function** in Excel Help.

Quickly sum cell values without modifying a worksheet

There is no need to type formulas in spreadsheet cells unless you need to. Fortunately, there is a quick way to display summary formulas in the Excel status bar (the thin bar between an Excel workbook and the **Start** menu):

1. Start Excel. A new, blank workbook appears.
2. In cells A1 through A10, type a number in each cell.
3. If the status bar is not visible, on the **Tools** menu, click **Options**. Then, on the **View** tab, select the **Status bar** check box.
4. Select cells A1 through A10, inclusive.
5. Right-click anywhere in the status bar, and click **Sum** in the list that appears.

The sum of cells A1 through A10 appears in the status bar to the right, and the layout of the original worksheet is not modified.

Quickly Clear All Spreadsheet Formatting

Here's an easy way to quickly clear all formatting in your Excel spreadsheet.

1. Click any cell in the spreadsheet and then press **CTRL+A** to select all cells in the worksheet.
2. On the **Edit** menu, point to **Clear**, and then click **Formats**.

Print a Selection of Cells in an Excel Worksheet

If you are working with large amounts of data, you might want to print only a range of information — for example, to share with peers at a meeting. You can select specific cells in two ways. The first way gives you the most control while you select. The second allows you to select cells quickly and to select multiple cells across a worksheet and all cells containing data in the columns you select. To print a selection of cells do the following:-

1. Click the first cell in the range you want to print.
2. Do one of the following:
 - * To select cells of data one at a time, press the **SHIFT** key and then use the arrow keys to select the cells you want.
 - * Select a range of adjacent cells, press **SHIFT+CTRL** and then use the arrow keys to select the cells you want. To select nonadjacent cells or cell ranges, select the first cell or range of cells, and then press **CTRL** and select the other cells or ranges.

Note: Pressing the **DOWN** arrow selects all cells that contain data in that column. Using the **RIGHT** or **LEFT** arrow selects cell ranges in smaller increments. **-or-**

3. On the **File** menu, click **Print**.
4. Under **Print what**, click **Selection** and then click **OK**.

Keep the Result, Lose the Formula

You receive invoices from vendors containing formulas that calculate billing data. Before you use the billing data, you need to convert the formula results to plain numbers. Fortunately, in Excel it's easy to copy and paste a result without the formula.

1. Select the cell containing data you want to copy.
2. Press **CTRL+C** to copy the cell data.
3. Press **CTRL+V** to paste the data in a new location.
4. Click the arrow next to the **Paste Options** smart tag, and then click **Values Only**.

Create Forms for Easier Data Entry

Entering large amounts of data into an Excel spreadsheet can be very time consuming. Using data entry forms makes your task easier. A data entry form is a dialog box that gives you a convenient way to enter a complete row of information at one time. To use a data entry form to edit a list, follow these steps:-

1. Click a cell in the labeled row you want to add the record to.
2. On the **Data** menu, click **Form**.
3. Click **OK**. A data entry dialog box appears, with field labels that correspond with the column labels in your list.

To add a new record

1. Click **New**.
2. Type the information for the new record.
3. When you finish typing data, press **ENTER** key to add the record.
4. When you finish adding records, click **Close** to add the new record and close the data form.

Generate Random Numbers in Excel

Some types of analysis require you to use randomly generated numbers. You can also use randomly generated numbers to quickly populate an Excel spreadsheet. There's an easy function you can use to do this automatically. Here are a few of the ways you can use it:

- * Type **=RAND()** in a cell to generate a number between 0 and 1.
- * Type **=RAND()*100** to generate a number between 1 and 100.

After entering a function, you can then use the fill handle to quickly populate as many cells as you'd like with random numbers. To use the fill handle, click the cell, move your pointer over the lower-right corner of the cell until it turns into a black plus sign, and drag it horizontally or vertically across the cells you wish to populate.

Note: To change the number format of your random numbers (for example, if you'd prefer whole numbers to decimal points), click **Cells** on the **Format** menu. In the Format Cells dialog box, click the **Number** tab and then click **Number** in the **Category** list. Then in the **Decimal places** box, enter the number zero and click **OK**.

Calculate the number of days between two dates

Because I write Web articles that adhere to strict publishing schedules, I frequently need to know the number of days between two dates, such as the number of days between a technical review deadline and a grammar edit deadline. Here is an easy exercise you can try to display the number of days between two dates:

1. Start Excel. A new, blank workbook appears.
2. In cell A1, type **1 June 2002**, and press **ENTER**.
3. In cell B1, type **15 April 2001**, and press **ENTER**.
4. In cell C1, type **=A1-B1**, and press **ENTER**.
5. Right-click cell C1, and click **Format Cells**.
6. On the **Number** tab, in the **Category** list, select **General** and then click **OK**.

Cell C1 displays the number of days between 1 June 2002 and 15 April 2001, which is 412.

Enter Repetitive Data Quickly

If you need to type repetitive data such as some numbers or dates into a spreadsheet, you can use the AutoFill feature in Excel to help you. Here is an exercise you can try to practice entering repetitive data quickly.

First, fill a group of cells with names of the months:

1. Start Excel. A new, blank workbook appears.
2. In cell A1, type **January** and then press **ENTER**.
3. Click anywhere inside cell A1, and rest the mouse pointer on the square at the lower right-hand corner of cell A1. The mouse pointer changes into a plus symbol (+).
4. Press and hold the right (alternate) mouse button, drag the mouse pointer to cell A12, and release the right (alternate) mouse button. A menu appears.
5. Click **Fill Months**. The names of the months February, March, and so on appear in cells A2 through A12.

Next, quickly fill in several cells with the same value:

1. In cell B1, type **1999** and press **ENTER**.
2. Click anywhere inside of cell B1, and rest the mouse pointer on the square at the lower right-hand corner of cell B1. The mouse pointer changes into a plus symbol (+).
3. Press and hold the right (alternate) mouse button, drag the mouse pointer to cell B12, and release the right (alternate) mouse button. A menu appears.
4. Click **Copy Cells**. The value **1999** appears in cells B2 through B12.

Finally, fill in several cells with a range of numbers:

1. In cell C1, type **10000**.
2. Click anywhere inside of cell C1, and rest the mouse pointer on the square at the lower right-hand corner of cell C1. The mouse pointer changes into a plus symbol (+).

3. Press and hold the right (alternate) mouse button, drag the mouse pointer to cell C12, and release the right (alternate) mouse button. A menu appears.
4. Click **Series**.
5. In the **Step value** box, type **125**, and click **OK**. The **Series** dialog box disappears, the value **10125** appears in cell C2, and the number increases by 125 in each cell in column C up to an ending value of **11375** in cell C12.

Import Access Tables into Excel

You've gathered the data, now you want to analyze it. Here's a quick way to copy an Access table into Excel.

1. In the Access database window, click the table you want to export.
2. On the **Standard** toolbar, click **Office Links**.
3. Click **Analyze It with Excel**.

Excel automatically opens and displays your table in a worksheet.

Another way to Copy Access Data into Excel

Here's an alternative way that just requires a simple copy and paste.

1. In Access, open the table, query, or form that contains the records you want to copy.
2. On the **View** menu, click **Datasheet View**.
3. Select the records you want to copy. Or press **CTRL+A** to select the entire column.
4. Click **Copy** on the **File** menu.
5. Open an Excel workbook.
6. Click the upper-left corner of the worksheet area where you want the first field name to appear. (To ensure that the copied records do not replace existing records, make sure that the worksheet has no data below or to the right of the cell you click.)
7. Click **Paste** on the **File** menu in Excel.

Import Access Data into Excel

Did you know you could import data from your Microsoft Access databases into Microsoft Excel? Here's a quick and easy way to do it:

1. Open the Excel workbook into which you want to import the data.
2. On the **Data** menu, point to **Import External Data**, and then click **Import Data**.
3. In the **Select Data Source** dialog box, click **New Source**.
4. In the **Data Connection Wizard** dialog box, click **ODBC DSN**, and then click **Next**.
5. Click **MS Access Database**, and then click **Next**.
6. In the **Select Database** dialog box, browse to the database file you want to import and then click **OK**.
7. In the **Data Connection Wizard** dialog box, click the name of the table that contains the data you want to import, then click **Next**.
8. Type a name and description, and click **Finish**.
9. In the **Select Data Source** dialog box, click the data source you just created and then click **Open**.

In the **Import Data** dialog box, specify where you want to put the data, and then click **OK**. (While the **Import Data** dialog box is open, you can click the row on your spreadsheet where you want the data to appear and the **Existing worksheet** box will update automatically with the correct information.)

Add a Calculator to the Excel Toolbar

Did you know that you could add a calculator to your Microsoft Excel toolbar? Here's how:

1. On the **View** menu, click **Toolbars**, and then click **Customize**.
2. Click the **Commands** tab.
3. In the Categories list, click **Tools**, and in the Commands list, click **Custom** (the one with the gray calculator graphic).
4. Drag the selected command from the Commands list to a toolbar. (Lift your finger from the mouse when you see a plus sign next to your pointer.)
5. Click **Close**. Now click the button you just added to run the calculator.

Protect cells, worksheets, and workbooks with Password

In Microsoft Excel 2002, you can protect a single cell or a group of cells on a worksheet from being modified. You can also protect an entire worksheet, an entire workbook, or any combination of cells, worksheets, and workbooks from being modified. Finally, you can restrict cell access to specific network users.

To protect a single cell or a group of cells in a worksheet

1. With the spreadsheet open, on the **Tools** menu, point to **Protection** and then click **Allow Users to Edit Ranges**.
2. Click **New**.
3. In the **Title** box, type a name for the single cell or group of cells.
4. Click the **Refers to cells** box, and then select the single cell or group of cells on the worksheet.
5. In the **Range password** box, type a password.

Note: You can click the **Permissions** button in the **New Range** dialog box to select users on your computer network that can have access to the single cell or group of cells.

6. Click **OK** to return to the **Allow Users to Edit Ranges** dialog box, and then click OK again.

To protect an entire worksheet

1. With the spreadsheet open, on the **Tools** menu, point to **Protection** and then click **Protect Sheet**.
2. In the **Password to unprotect sheet** box, type a password.
3. In the **Allow all users of this worksheet to** list, select one or more check boxes to allow users who successfully enter the password to perform additional tasks on the worksheet, such as select unlocked cells, insert rows, sort, and so on.

4. Click **OK**, reenter your password, and then click **OK** again.
5. To test the password, close and reopen the workbook.

To protect an entire workbook

1. With the workbook open and visible, on the **Tools** menu, point to **Protection** and then click **Protect Workbook**.
2. In the **Password (optional)** box, type a password.

Note: To protect the basic structure of the workbook, select the **Structure** check box. To protect the behavior of the workbook's window, select the **Windows** check box.

3. Click **OK**, reenter your password, and then click **OK** again.
4. To test the password, close and reopen the workbook.

Skip through your worksheets with a shortcut

When you are working on many programs at once, you use the keyboard shortcut **ALT+TAB** to move between open programs. (If you have not tried this, do so now — it is a great Microsoft Windows® trick.) However, this does not work when you are moving between worksheets in the same workbook. Do not despair; there are a couple of neat little shortcuts that handle the job quite nicely.

To move one worksheet to the right, Press CTRL+PAGE DOWN.

To move one worksheet to the left, Press CTRL+PAGE UP.

Insert a Line Break in a Cell

In most other Office programs, to move the cursor to the next line, you press the ENTER key. However, in Excel — the program that dances to its own tune, and does not give a little about lines or paragraphs — you end up in the cell below when you press ENTER. This is the cause of much frustration. To insert a line break in a cell, follow this secret trick:

- Press **ALT+ENTER** to start a new line while you are typing or editing data.

Make a Style Statement with Worksheet Tabs

If you have a workbook with loads of worksheets and you are having trouble remembering which one is which, you can customize the little tab at the bottom of each worksheet to identify it in a special way, with a new name or color. It is like getting to design your own nametag instead of having to wear the standard, white.

To color one sheet

1. Right-click the tab you want to color, and then click **Tab Color** on the shortcut menu.
2. Go natural.

To color all sheets in the workbook

1. Right-click any worksheet tab, and then click **Select All Sheets** on the shortcut menu.

2. Right-click the tab again, and then click **Tab Color** on the shortcut menu.
3. Again, go wild.

To rename a worksheet

- Right-click a tab, and then click **Rename** on the shortcut menu.

Move or copy a worksheet

You may know that you can just drag and drop a worksheet to a different spot in the workbook. But for you folks who get joy from dialog boxes (and truthfully, this one gives you more options), here you go:

To move or copy a worksheet

1. Right-click a tab, and click **Move or Copy** on the shortcut menu.
2. In the **Move or Copy** dialog box, you have options:
 - To move the worksheet to a spot within its own workbook, select a sheet in the **Before sheet** box.
 - To move the worksheet to another open workbook, select the workbook in the **To book** list and then click **OK**.
 - To keep a copy of the worksheet you are moving in this workbook (rather than just moving it), select the **Create a copy** box.

Double-click your way to fast formatting

By default, when you copy text from a different program (such as Microsoft Word, Microsoft PowerPoint®, or even Microsoft Internet Explorer) and paste it into an Excel cell, the original formatting comes along for the ride. Sometimes this leaves you with a tiny little cell with “**Gigantic Formatting**” that you need to fix by hand. The **Paste Options** button that looks like this:  pops up, and you can use it to keep the original formatting or to match the destination formatting (that is, the formatting you have chosen for your cell). This is especially true if you have a lot of cutting and pasting to do.

Paste text from another program and keep cell's formatting

1. Select the text you want to pop into your Excel worksheet.
2. Press **CTRL+C** and switch back to Excel.
3. Double-click in the cell, and press **CTRL+V**.

Quick Fit Columns

Excel columns have a default column width of 8.43 characters, or 64 pixels. That means many entries are not completely visible. (If there is no data to the right of a long entry, Excel will display the entire entry.) You could change the column's width, but you might spend a lot of time guessing at the appropriate width to display everything.

You can make it easy on yourself by **double-clicking** the right border of a column's header cell (the gray cell at the top of the column). Doing so

will automatically adjust the column's width to display the longest entry in that column.

Excel Keyboard Shortcuts for Deleting Rows & Columns

Here are some keyboard shortcuts for deleting rows and columns in Excel without having to use the menus.

Select the row(s) or column(s) you want to delete, then press **Ctrl + -** (Ctrl key plus the minus key). The minus key can be the one on the numeric keypad or on the top row of keys (just above the letters and below the function keys) on standard keyboards.

To select a row or column, click on the grey box at the far left of the row (containing the row number) or the grey box at the top of the column (containing the column letter). Alternatively, you can select a row or column from the keyboard. Simply move to a cell in the row or column you want to select and press **Shift + Spacebar** (to select the row) or **Ctrl + Spacebar** (to select the column). If you want to extend the selection of rows or columns, be sure to release the Ctrl key, then press and hold the Shift key and use the arrow keys (up arrow, right arrow, etc.) to select adjacent rows or columns.

To delete the row or column you can also move to a cell in the row or column you want to delete, press **Ctrl + -** and select "**Entire row**" or "**Entire column**" from the Delete pop-up window.

Quick Double Underline

When you click the Underline button on the Formatting toolbar, Excel underlines the data in the selected cell or range. By default, that underline is a single line. If you need a double underline, you probably select the Cells command from the **Format** menu, click the **Font** tab, and then choose **Double** from the **Underline** control. However, that is a permanent change. Excel will continue to display a double underline until you change it back, which is probably inconvenient for most of us.

To quickly apply a double underline without changing any Excel defaults, simply hold down the **Shift key** as you click the **Underline** button.

Start Excel Automatically when you Start your System

Would you like Excel to launch automatically when you turn on your system? Well, more specifically, we can show you how to launch Excel when you launch Windows. If you use Excel every day, you will be saving yourself a little time and effort. To add Excel to your startup options, click **Start** (in the Taskbar), choose **Programs**, right-click **Microsoft Excel**, and select **Copy** from the context menu. Next, **right-click Startup** and click **Open** (startup folder will open), choose **Paste**. Now, the next time you turn on your PC and launch Windows, Windows will automatically launch Excel.

Summing Across Worksheets

To total the data for the month, select (or insert) a fifth worksheet tab and name it Monthly Total. Since all four weeks' worth of worksheets are arranged exactly the same, pick a cell in the Monthly Total sheet that will contain numbers. For example, cell C2 will contain Apple sales in the south, since it's the intersection of the Apple row and the South column.

```
=SUM(Week1:Week4!C2)
```

Now the value from cell C2 on the four worksheets (Week1 through Week4) will be totaled and displayed in the Monthly Total sheet's cell C2. Go ahead, enter data for Southern Apple sales in worksheets for Week1 through Week4, and then check the Monthly Total tab and you'll see that the total now appears.

Quick Copy, Paste-Value Options

If you need, to quickly copy a formula from one cell to another, the typical approach is to use the familiar **Edit/Copy/Paste** technique. However, in some cases you may not want Excel to adjust the formula when you copy a cell to the cell directly below it. You have two options:

Consider a quick example: cell A1 and A2 contain values. In cell A3 is the formula `=A1+A2`, If you copied cell A3 to cell A4, cell A4 will end up with the formula `=A2+A3` because Excel "adjusts" formulas using relative addressing.

Instead, move to cell A4 and press **Ctrl + '** (Ctrl plus the apostrophe) followed by Enter. Cell A4 will now contain exactly the same formula as A3. However, if you want to quickly copy the value (not the formula) from one cell to the cell directly below it, use **Ctrl + Shift + '** (Ctrl plus Shift plus the apostrophe).

Navigate in Excel without using Scrollbars or Arrows

1. Select any cell in the column - The cell will now have a thick line around it to indicate it is selected.
2. Position the mouse on the bottom-centre of the rectangle where the arrow points.
3. The cursor changes from a "black & white plus" to a "North-South-East-West arrow".
4. Double click the bottom-centre to move to the last cell in the column.
5. Double click the top-centre to move to the first cell in the column.
6. Double click the left-centre to move to the first cell in the row.
7. Double click the right-centre to move to the last cell in the row.

Note: Make sure you do not move your mouse as you double click or you may not do what you wanted. Clicking on any edge of the rectangular selection will work.

Navigating in Excel worksheet using Keyboard Shortcuts

To quickly swap between tabs in an Excel worksheet, use, Ctrl + PageUp (to move to the previous worksheet tab) and Ctrl + PageDown (to move to the next tab).

There's a variation of this shortcut as well. Add a Shift to the combination (that is, Shift + Ctrl + PageUp/PageDown) and Excel selects (or deselects) a range of worksheet tabs!

To select a contiguous block or table of data in Excel, place the cursor anywhere in the block and type Ctrl + Shift + *

Converting Numbers Stored as Text to Numbers

You can now use the **Error Checking Options** button to quickly convert numbers stored as text to numbers.

1. On the **Tools** menu, click **Options**, and then click the **Error Checking** tab.
2. Make sure the **Enable background error checking** and **Number stored as text** boxes are checked.
3. Select the range of cells containing numbers stored as text, indicated by green error indicators in the upper left corner of each cell.
4. Click the **Error Checking Options** button that appears next to the range, and then click **Convert to Number**.

Note: The **Error Checking Options** button will only appear next to the range if the active cell in the range contains an error, such as containing numbers stored as text. Additionally, if the active cell contains an error, but does not contain numbers stored as text, **Convert to Number** may not be an option given when you click the **Error Checking Options** button.

Rest Your Eyes with Text to Speech

Proofreading a spreadsheet can be time-consuming, blurry-eyed work, especially when you're comparing your spreadsheet against data in another document. But the new Text to Speech feature in Excel 2002 can really help speed up this process by reading selected data back to you for verification. Each cell is highlighted as the value is spoken, and when you hear an error, you can stop to correct the error in that cell. To play back a group of cells, follow these steps:

1. On the **Tools** menu, point to **Speech**, and then click **Show Text To Speech Toolbar**.
2. Select a group of cells to read back.
3. Choose how the computer will read back your data by clicking **By Rows** or **By Columns** on the **Text To Speech** toolbar.
4. Click **Speak Cells** if you want the computer to read back each cell in your selection.
5. To correct an error, click **Stop Speaking**, and use your mouse and keyboard to make the necessary changes.
6. Click **Speak Cells** to continue.

To play back after every cell entry:

1. On the **Text to Speech** toolbar, click **Speak On Enter**.
2. Enter data in a cell. After you press ENTER, the computer will read back the data in the cell. You can also specify a male or female voice and the speed of playback.

Note: To use Text to Speech, your computer must have a sound card installed and speakers attached. The available voices depend on your default language installation and any language packs you may have installed. Text to Speech is not part of the standard installation of Excel, so have your installation CDs ready.

Repeat Pictures in Excel with a Camera

How to propagate a picture to multiple worksheets based on a primary entry. We can do it by using, Camera tool. The only way to access, the **Camera** tool is by customizing the toolbar and adding it, as I don't think it appears on any regular pull-down menu. So choose **View > Toolbars > Customize**; select the **Tools** category; scroll down until you see the **Camera** icon and text; then drag it to the toolbar.

Now add a picture (**Insert>Picture>From File...**) anywhere on a worksheet, drag it where you want, and resize it. You need to get the picture to fit inside a group of cells, leaving a slight border in one corner, because without the border, you can't perform the next step.

Select the cells that the picture fits within (by clicking in that border and dragging to select all the cells behind the picture). Next, click the **Camera** icon. You have essentially snapped a picture of the contents of the selected cells, and the system is awaiting your instructions to "print" it. Move to a new worksheet (in the same workbook), click the mouse, and the picture get "printed." You can drag the picture where you want and even resize it.

Repeat the process for multiple worksheets, if desired. If you make any changes in the original picture, the changes will automatically be updated in the pictures you have "printed."

Note: You can mirror anything you want with this technique: photo, clip art, Excel chart, calculated result(s), etc.

Change the Cell entries to Pure Text

Type a single quote (') before the entry. Excel will treat the cell as pure text and change nothing. This technique is best for hyperlinks entries, 16-digit numbers and for the entries that are automatically converted to dates (e.g. 3/4).

How to correct cell response as 44, becomes 0.44

Go to **Tools > Options/Edit** and uncheck the **Fixed Decimals Places** checkbox. If this command is on, you cannot correct this phenomenon

even you use **Format > Cells... > Number** and set the **Decimal Places** to zero.

Type an email address without appearing as hyperlink

To turn that option off in Excel 2002 and later, follow these steps:

1. Choose **Tools > AutoCorrect Options...**
2. Select the **AutoFormat As You Type** tab
3. Remove the check mark from **Internet and network paths with hyperlinks** and click **OK**.

To undo the hyperlink creation in all versions, type the email address and press **Enter**. Immediately, press **Ctrl+Z**, this will convert the hyperlink back to text.

Resetting the used Cell Range

In a worksheet, if you ever end up your work in cell E50 but your scrollbar go to row 500; it's because, Excel may be remembering some data that was in row 500, but has been deleted. To go to the cell, which is currently the "Last Cell" in the worksheet, hold the **Ctrl** key, and press the **End** key. If the Last Cell is outside the range of cells that is actually being used, you can reset the used range, so the scroll bar works correctly.

To manually reset the used range of cells, select the last cell that contains data in the worksheet by using **Ctrl + End Key**.

To delete any unused rows:

- Move down one row from the last cell with data.
- Hold the **Ctrl** and **Shift** keys, and press the **Down Arrow key**
- Right-click in the selected cells, and, from the shortcut menu, choose **Delete**. Select **Entire Row**, and click **OK**.

To delete any unused columns:

- Move right one column from the last cell with data.
- Hold the **Ctrl** and **Shift** keys, and press the **Right Arrow key**
- Right-click in the selected cells, and, from the shortcut menu, choose **Delete**. Select **Entire Column**, and click **OK**.

Lock the Title Row that keeps Visible while you Scroll

You can lock the title row (as heading) and keep it visible while you scroll down to see the rest of your data. Assuming title row is 1, select cell A2, then choose **Window > Freeze Panes**.

Column headers as Numbers instead of Letters

You can change your column headers from Alphabetical letters (default) to Numbers. To do this, follow these steps:

1. Choose **Tools > Options** and select the **General** tab.
2. Remove the check mark from **R1C1 reference style**
3. Reverse this action to restore the default.

Stop Excel to open up too many files at Startup

If you have ever experienced; Excel open up hundreds files at startup automatically, it's probably the reason of adding up those files in "Startup Folder". To set right this phenomenon, follow these steps:

Choose **Tools > Options** and select the **General** tab.

All files listed in the **At startup, open all files in:** box will be loaded automatically when Excel starts. Simply, alter or remove this list.

Troubleshooting

Have ever experienced the following errors/behaviour in Excel?

1. Excel freezes at startup and you have to repeated reboots
2. Excel crashes on regularly
3. Excel caused an invalid page fault...
4. Illegal Operation Error at startup
5. Excel crashes on opening / closing / prompts "not enough resources".

To Do List:

1. Try opening Excel without any **add-ins** or **hidden workbooks**. If your error disappears, there is either an "add-in" or a "hidden workbook" which is causing problems.
 - On the Windows taskbar, click the **Start** button
 - Choose **Run** (Win Key + R)
 - Type "C:\Program Files\Microsoft Office\Office\Excel.Exe"/Automation (include the quotes).
2. Try locating the **XLSTART** directory, move everything from there.
3. In Excel: **Tools> Add-ins...**, note the ones checked and uncheck them one at the time, and restart Excel each time.
4. In Excel, **Tools>Options>General**. Check if a path is entered after **Alternate startup file location**. Clear it.
5. Another option is to open Excel in **Safe mode** using **Run**:
"C:\Program Files\Microsoft Office\Office\Excel.exe" /Safe
6. Also, you might try using **Run**:
"C:\Program Files\Microsoft Office\Office\Excel.exe" /Regserver
7. Another possible problem is a corruption of toolbar customization file:
 - Locate all files with extension **.xlb**
 - Rename the extension(s) to something like **.old**
 - Now try to start Excel again.

Paste a selecting range as Picture or Picture Link

1. Select the range
2. **Edit | Copy** in the menu bar (or Ctrl-C)
3. Go to the new worksheet and with the **Shift** key pressed click on **Edit | Paste Picture Link**.
4. Go back and do the same for the other areas.

If you change the original range, the picture will change too (values and formatting!). You can use this sheet always to print because it will always update if you change the original data.

Note: You see that the edit menu will change when you press the shift button while you click on **Edit**.

Change Formulas to Values

You can do this to convert all formula cells on a worksheet to values:

1. First select all cells on the sheet with the shortcut **Ctrl+A** or click on the space above the first row header and on the left of the first column header.
2. Click **Edit > Copy** (or right click the selection and choose **Copy**)
3. Click **Edit > Paste Special** (or right click the selection and choose **Paste Special**)
4. Check "**Values**"
5. Click OK to complete the process
6. Press **Esc** key to clear the clipboard
7. Press **Home** key to go to cell A1

Note: This function is irreversible, so think beforehand. By applying this feature, all your formulas will be permanently converted to simple values.



20 GREAT EXCEL TIPS

How to get the most from Excel:

Warning:

First, some of these functions work only when the Analysis ToolPak add-in is enabled. To do this, choose *Tools | Add-ins*, select the check box titled **Analysis ToolPak**, and click on OK. If *Analysis ToolPak* is not installed, you'll be prompted to install it.

COUNTIF Function

The COUNTIF function counts the number of times a condition is met. For example, if you have a list of days in a month in column A (cells A1:A31) and your sales receipts for those days in column B, you can count the number of days that your sales exceeded \$5,000 with this function: =COUNTIF(B1:B31,">5000"). A similar function, SUMIF, totals values instead of counting them.

CHOOSE Function

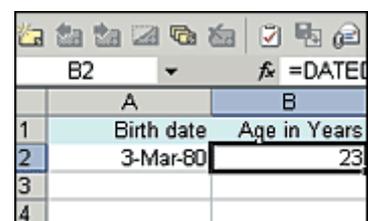
The CHOOSE function takes a number from 1 to 29 and a list of items (up to 29) and returns the item that corresponds to the number. One use for this function is to return the day of the week for a given date. To do this, couple it with the WEEKDAY function, which gives a day number (1 to 7) for a date, then use CHOOSE to turn the number into a day name. Assuming your date is in cell B2, use this function to get the day of the week it falls on: =CHOOSE(WEEKDAY(B2), "Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat")

MOD Function

MOD (or modulus) returns the remainder when one number is divided by another. For example, =MOD(4,3) returns 1. Use this function to format every other row of a worksheet by selecting the cells to format and choosing *Format | Conditional Formatting*. Choose *Formula Is* and type this formula: =MOD(ROW(),2). (ROW returns the current row number.) Click on *Format* and set a pattern for alternate rows on the *Patterns* tab. Click on OK when you're done.

DATEDIF Function

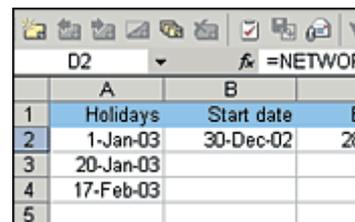
The DATEDIF function, undocumented in most Excel versions, returns the time between two dates, measured in your choice of completed years, completed months, or days. This function is handy for calculating a person's age. Put the person's birth date in cell A1 and write this formula in cell B1 to calculate the age in years: =DATEDIF(A1,NOW(),"y")



	A	B
1	Birth date	Age in Years
2	3-Mar-80	23
3		
4		

NETWORKDAYS Function

The NETWORKDAYS function calculates the number of workdays (excluding weekends) between two dates. You can specify holidays that should be excluded from the count. Place your holiday dates in column A, then select them and click on Insert | Name | Define and name the range holidays. Place the start and end dates in cells B1 and C1 and use this function to calculate the number of workdays between the two: =NETWORKDAYS(B1,C1,holidays)



	A	B	C
1	Holidays	Start date	End date
2	1-Jan-03	30-Dec-02	28
3	20-Jan-03		
4	17-Feb-03		
5			

CONVERT Function

Use the CONVERT function to convert measurements from one unit to another. For example, to convert a value in cell A2 from inches to centimeters, use this function: =CONVERT(A2,"in","cm"). Excel Help contains a complete list of the conversions and function arguments to use for each.

ISERROR Function

The ISERROR function returns True when the cell to which it refers contains an error and False when it doesn't. Combine this with NOT and an IF function to create a string that adds a range of numbers, ignoring any cells that contain errors. So, if your numbers appear in the range A2:A6, type this function and press Ctrl-Shift-Enter to enter it into the cell, as it is an array function (a function that performs multiple calculations on multiple values): =SUM(IF(NOT(ISERROR(A2:A6)),A2:A6,""))

LARGE Function

The LARGE function will return the nth largest number in a list. If you have a list of test scores in cells A2:A10, you can find the third-best score with this function: =LARGE(A2:A10,3). There is a similar function, SMALL, which finds the nth smallest number in the list.

SUBTOTAL Function

SUBTOTAL calculates a subtotal for a list, which may be useful when you are using a filtered list. The problem with using SUM with a filter is that the function totals both hidden and visible values. SUBTOTAL, however, sums only the visible values. Instead of writing the SUBTOTAL function yourself, click on the AUTOSUM button on the toolbar and it will write the correct SUBTOTAL function.

SQRT Function

To calculate the square root of a number, Excel uses the SQRT function; for example, =SQRT(25) calculates the square root of 25. When you

need, say, a cube root, you must work with the mathematical idea that the cube root is calculated by raising the number to the power of 1/3. So calculate the cube root of 27 using $=27^{(1/3)}$. This principle extends to let you find the root of any number by raising it to a fractional power.

Look-Up Functions

Look-up functions find data in tables. If you have a list of office names in column A and sales figures in columns B and C, the function $=VLOOKUP("Seattle",A2:C15,2, FALSE)$ looks for Seattle in column A of the data table (A2:C15) and returns the corresponding value from column B (the second column in the table). Use FALSE in the formula to tell Excel that the data is not sorted and that an exact match is required.

TODAY() Function

The function $=TODAY()$ places the current date in a cell. You can use this with a macro to save a file using today's date as its filename. This sample macro code saves the file using the contents of cell A1 as the filename. Simply place $=Today()$ in cell A1 and run the following macro to test it:

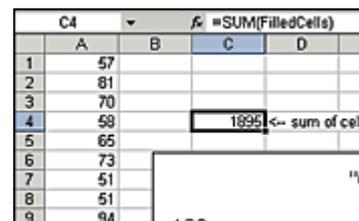
```
Sub savenamefromcell()  
Dim savename AsString  
savename=Sheets(1).Range("A1").Value & ".xls"  
ActiveWorkbook.SaveAs Filename: =savename  
End Sub
```

FREQUENCY Function

Use the FREQUENCY function to count the instances a particular number occurs in a series of values. The function requires a set of ranges (or bins) to group the values. For example, use bins of 5, 10, 15, and 20 to report the frequency of values in the ranges 0:5, 6:10, 11:15, and 16:20. Because FREQUENCY is an array function, you must first select a range of cells the same size as the bin range, then type the function $=FREQUENCY(A1:D15, F2:F5)$ then press Ctrl-Shift-Enter. This example uses bins in the range F2:F5 to count numbers in the range A1:D15.

OFFSET Function

Creating dynamic ranges is easy with the OFFSET function. For example, this function, used in the Insert | Name dialog, names a list of numbers in column A, assuming the list begins in cell A1 and there are no blank cells in the range: $=OFFSET(\$A\$1,0,0,COUNTA(\$A:\$A),1)$. If you



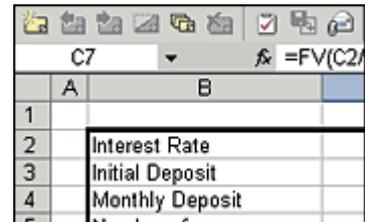
	A	B	C	D
1	57			
2	81			
3	70			
4	59		1995	← sum of cell
5	65			
6	73			
7	51			
8	51			
9	94		170	

name your range, for example, FilledCells, the function $=SUM(FilledCells)$ will sum the values in the list. The results update automatically as numbers are added or removed. The arguments for the OFFSET function are the starting or reference cell; the number of rows and columns up, down, or across from the reference cell; and the number of rows and

columns to return. The OFFSET function is quite useful for creating charts that update as new data is added.

FV Function

The future value function, FV, calculates the return on a given investment. To calculate the ten-year value of \$1,000 invested today at 5 percent interest (compounded monthly), `=FV(5%/12, 10*12,,-1000)` returns \$1,647.01. If you make additional monthly payments of \$10 per month, the future value is `=FV(5%/12,10*12,-10,-1000)` and returns \$3,199.83. Negative values are used because you are paying out money, and you should take care to scale the interest rate to match the periods used. We're assuming 12 periods per year, so the interest rate is 5%/12.



The screenshot shows an Excel spreadsheet with the following data:

	A	B
1		
2		Interest Rate
3		Initial Deposit
4		Monthly Deposit

Cell C7 contains the formula `=FV(C2/12,10*12,-10,-1000)`.

Little-known functions like these open new avenues of productivity and fun for Excel users.

IF Function

Online Extra

Much to our surprise, many readers aren't familiar with one of Excel's most useful functions—IF—which evaluates a condition and returns one value when the condition is true and another when the condition is false. For example, consider a situation in which you charge \$15 for regular shipping and an extra \$10 for expedited shipping. If cell A2 of your invoice contains a Y for expedited shipping, you can calculate the total shipping using this function: `=IF(A2="Y",25,15)`

OR and AND Functions

Online Extra

The functions OR and AND evaluate tests and return either True or False. OR returns True when any of its tests is true and False when they are all false. AND returns True only if all tests are true and returns False if one or more is not true. So `=OR(2=3,4=4)` returns True and `=AND(2=3,4=4)` returns False. These functions are often used in combination with functions like IF to configure multiple tests.

INT Function

Online Extra

The INT function rounds a number down to the nearest integer. It is useful for extracting the various parts of a real number. Use `=INT(A1)` to return the integer portion of the number in cell A1 and `=A1-INT(A1)` to return the decimal fraction portion (the part after the decimal point). One

common use for INT is with the RAND function, extracting the integer portion of a random number, like =INT(RAND()*25).

PROPER Function

Online Extra

Use the PROPER function to adjust the capitalization of a cell entry. =PROPER(A1) displays the contents of cell A1 in proper case where only the first letter of each word is capitalized. The functions UPPER and LOWER are similar and display text in all uppercase or all lowercase, respectively.

EOMONTH Function

Online Extra

The EOMONTH function calculates the last day of the month and can be handy when determining the day on which a payment is due. The function takes a date and a number of months ahead. Use 0 for the current month, 1 for next month, -1 for last month, and so on. For example, =EOMONTH(Today(),1) calculates the last day of next month.
