

Excel 2003

Creating Electronic Spreadsheets

User's Manual

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Table of Contents

INTRODUCTION TO EXCEL	1
SELECTING DATA	3
ENTERING DATA	3
SAVING A WORKBOOK	4
MOVE AND COPY DATA BETWEEN CELLS	5
FILL CELLS WITH A SERIES OF DATA	6
EDITING DATA	7
INSERT AND DELETE CELLS, ROWS AND COLUMNS	7
FIND, REPLACE, AND GO TO CELL DATA	8
SPELL CHECK A WORKSHEET	10
CREATING BASIC FORMULAS	11
CREATING A SPREADSHEET LAB	13

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Introduction to Excel

Definition of Electronic Spreadsheet

An electronic spreadsheet is a computer program that displays data (both text and numeric) in cells in a worksheet of rows and columns. Hidden formulas can perform calculations on the data stored in cells. A cell is the point where a column and row intersect. Columns are vertical and labeled with letters; rows are horizontal and labeled with numbers.

Example:

The screenshot shows the Microsoft Excel interface with a spreadsheet titled 'Book1'. The spreadsheet has columns labeled A through E and rows numbered 1 through 9. The data is as follows:

	A	B	C	D	E
1	Monthly Expenses:	January	February	March	
2	Travel	100	250	175	
3	Telephone	50	50	50	
4	Office Supplies	48	24	96	
5	Printing	35	12	23	
6					
7	Totals:	\$233	\$336	\$344	
8					
9					

Labels and arrows in the image point to the following elements:

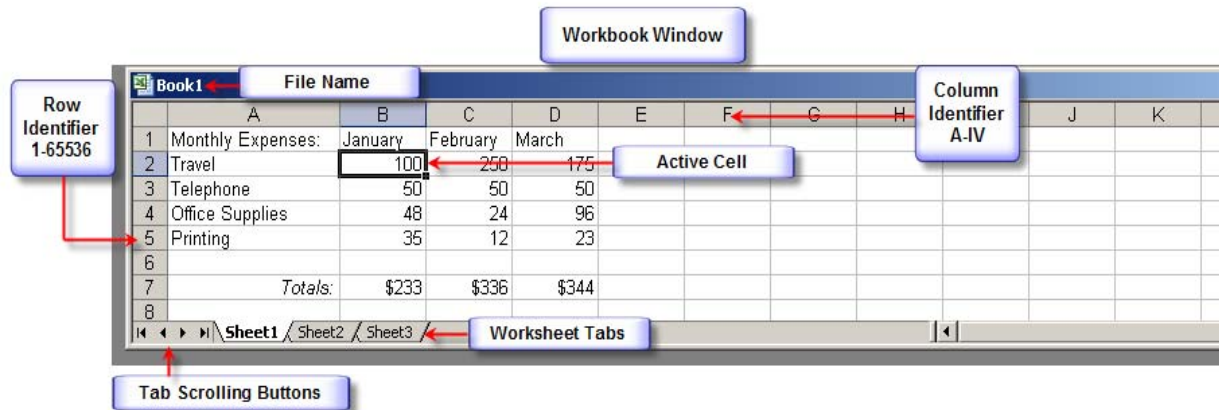
- Column:** Points to column B.
- Cell:** Points to cell B3.
- Row:** Points to row 3.
- Text:** Points to the text 'March' in cell D1.
- Numbers:** Points to the number '50' in cell D3.

Opening Excel

When you open Excel, You see a window within a window. The outer window is the Excel application window and the inner window is a blank workbook.

The screenshot shows the Microsoft Excel application window with various components labeled:

- Excel Application Window:** The entire window.
- Title Bar:** The top bar containing the window title and control buttons.
- Menu Bar:** The bar containing the File, Edit, View, Insert, Format, Tools, Data, Window, and Help menus.
- Standard Toolbar:** The toolbar containing icons for file operations and editing.
- Formatting Toolbar:** The toolbar containing icons for text and cell formatting.
- Name Box:** The box on the left showing the active cell address 'C17'.
- Formula Bar:** The bar on the right for entering data or formulas.



Navigating Your Worksheet

Use the Mouse To:

- **Move the worksheet display up or down one row at a time**, by clicking the vertical scroll arrow.
- **Move the worksheet display left or right one column at a time**, by clicking the horizontal scroll arrow.
- **Continuously move the worksheet display horizontally or vertically**, by continuously clicking the mouse button while placing the mouse pointer inside the horizontal or vertical scroll arrow.
- **Move the worksheet display one screen at a time**, by clicking between the scroll box and the scroll arrow of either the horizontal or vertical scroll bar.
- **Move rapidly, either vertically or horizontally**, through the worksheet area, by dragging the scroll boxes.
- **Move to the cell specified in the cell reference**, by clicking in the Name Box, type the cell reference, and press Enter.

Use the Keyboard To Move the Active Cell:

- **One cell at a time to the left, right, up, or down**, by pressing the corresponding arrow keys.
- **To column A of the current row**, by pressing Home.
- **Down or up by one screen's worth of rows**, by pressing Page Down or Page Up.
- **To the right, one cell at a time**, by pressing Tab.
- **To the left, one cell at a time**, by pressing Shift+Tab.
- **To cell A1 in the active worksheet**, by pressing Ctrl+Home.
- **One screen to the left or right, respectively**, by pressing Alt+Page Up to go left. Press Alt+Page Down to go right.

Selecting Data

• A single cell	Click the cell.
• The contents of a cell	Double-click the cell to place the insertion point inside the cell, and then double-click again to select the contents of the cell OR Select the cell, and then select the contents of the Formula Bar.
• A contiguous range of cells	Select the first cell in the contiguous range, navigate to the last cell in the range, press and hold Shift, and then click the last cell to select the full range. OR Click and drag from the first cell to the last cell.
• A noncontiguous range of cells	Select the first cell in the range, navigate to the next cell in the range, press and hold Ctrl, and then click the cell. (You can combine the Shift-click and Ctrl-click methods.)
• An entire worksheet	Click the gray square below the Name Box (where the column and row identifiers intersect).

Entering Data

To enter data into an Excel spreadsheet, create a new workbook or open an existing workbook. Select the cell in which you want to enter data and type the data you want the cell to contain. Press Enter or Tab to place the data into the cell and advance to a new cell. (Press Enter to move down one cell, or press Tab to move right one cell.)

Exercise 1: Creating a Spreadsheet

Use the following information to create a spreadsheet:

January revenue \$400; expenses \$225
February revenue \$650; expenses \$100
March revenue \$580; expenses \$475

Instructions:

1. Create a new, blank workbook.
 - a. Choose File→New and select Blank Workbook in the New Workbook task pane.
(A quicker way is to click on the New button on the Standard toolbar, or try Ctrl+N.)
2. Make column headings for Months, Revenue, Expenses and Totals.
 - a. Click cell A1, type *Months* and press Enter.
 - b. Select cell D1 and click in the Formula Bar; type *Revenue* and press Tab.
 - c. In cell E1, type *Expenses* and press Tab.
 - d. In cell F1, type *Totals*.


3. Enter the names of the months.
 - a. Select cell A3 and click in the Formula Bar; type *January* and press Enter.
 - b. In cell A4, type *February* and press Enter.
 - c. In cell A5, type *March* and press Enter.
4. Enter the revenue amounts.
 - a. Select cell D3, type *400* and press Enter.
 - b. Do the same in cells D4 and D5 for February and March revenues.
5. Enter the expenses.
 - a. Select cell E3, type *225* and press Enter.
 - b. Do the same in cells E4 and E5 for February and March expenses.

(Note the different methods of entry you just used.)


6. When finished, leave your workbook open.

Saving a Workbook


Both the Save and Save As commands can be used to save a file; however the Save and Save As commands are slightly different.

Use **Save**  when you want to save a brand new file; or, when you want to resave an existing file and you do not need to change the file's name, type, or directory location.

Use **Save As** when you want to resave an existing file **with** a new name or file type, or in a new directory.

When you use the File→Save command or click the Save button  to save a file for the first time, the Save As (instead of the Save) dialog box opens. This is because Microsoft gives a default name (i.e., Book1) every time you use the New Blank Document command. You need to give your new workbook a more appropriate name.

To save a new workbook:

1. With a new workbook open, choose File→Save to open the Save As dialog box.
(A quicker way is to use the Save button  on the Standard toolbar, or click Ctrl+S.)
2. Go to the directory where you want to save the file.
3. Name the file and click Save.

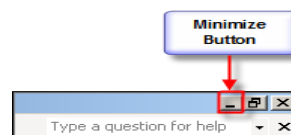
To save an existing workbook in a different directory, or with a different name or file type:


1. Click File→Save As to open the Save As dialog box. (There is no shortcut to Save As.)
2. Navigate to the directory where you want to save the file.
3. Rename the file and click Save.

Exercise 2: Saving Files and Folders

Instructions:



1. Create a new folder.
 - a. Click the Excel Minimize button.
 - b. On the Windows desktop, right-click and select New→Folder.
 - c. Type *Income&Expenses* ; press Enter.



2. Save the file.
 - a. On the Windows taskbar, click the Microsoft Excel – Book# button to maximize Excel.
 - b. Choose File→Save, or  or *Ctrl+S*.
 - c. Click the Desktop icon in the left pane of the dialog box.
 - d. Double-click the *Income&Expenses* folder.
 - e. In the File Name text box, type *MonthlyIncome&Expenses*; click Save.



3. Save the file with a new name, and then close Excel.
 - a. Choose File→Save As.
 - b. In the File Name text box, type *MonthlyIncome&Expenses_SAFE*.
 - c. Click Save; select File→Exit.
4. Find your files.
 - a. On your Desktop, double-click your *Income&Expenses* folder to view the contents.

Name	Size	Type	Date Modified
 MonthlyIncome&Expenses.xls	14 KB	Microsoft Excel Wor...	8/7/2006 11:22 AM
 MonthlyIncome&Expenses_S...	14 KB	Microsoft Excel Wor...	8/7/2006 11:22 AM

 - b. Once you have located the *MonthlyIncome&Expenses* and the *MonthlyIncome&Expenses_SAFE* files, close the *Income&Expenses* folder window.
5. Rename the folder you created, and start Excel.
 - a. On your Desktop, right-click the *Income&Expenses* folder; select *Rename* function.
 - b. Type *Financial Data* and press Enter.
 - c. On the Windows taskbar, click the Start button and select Programs→Microsoft Office→Microsoft Office Excel 2003.

Symbols

A symbol is a non-alphanumeric character, such as:


Symbol Name	Symbol
Copyright	©
Trademark	™
Registered	®


To insert a symbol:

1. Select the cell that you want to place the symbol in.
2. Click Insert→Symbol to open the Symbol dialog box.
3. Click on the symbol you want to insert and click the Insert button and then click Close.


Move and Copy data between cells

To **move** data:

1. Highlight the data you want to move and do one of the following:
 - Choose Edit→Cut.
 - Click the Cut button .
 - Press *Ctrl+X*.
2. Select the cell you want to move data to and do one of the following:

- Choose Edit→Paste.
- Click the Paste button .
- Press Ctrl+V.

To **copy** data:

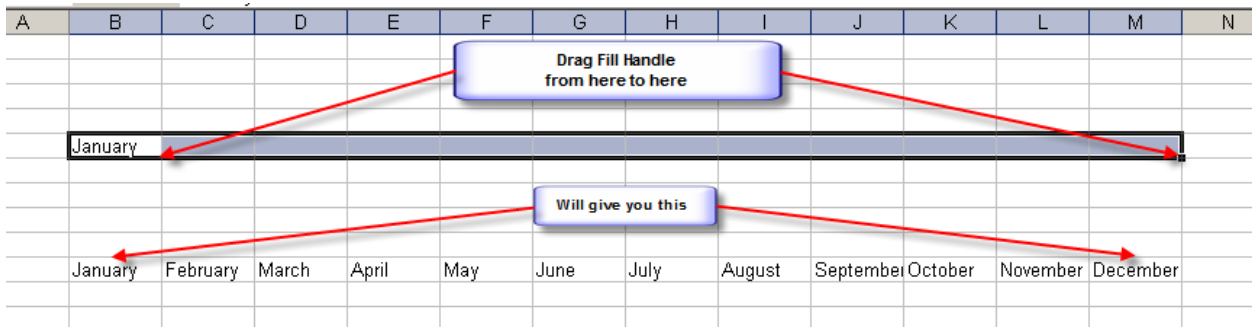
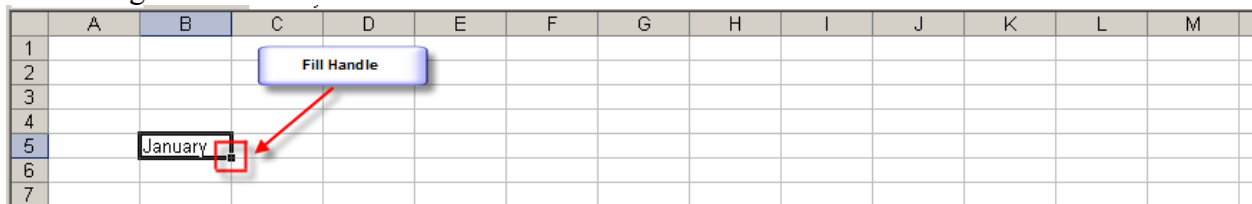
1. Highlight the data you want to copy and do one of the following:
 - Choose Edit→Copy.
 - Click the Copy button .
 - Press Ctrl+C.
2. Select the cell you want to copy data to.
3. Paste your selection in the destination cell.

(A quicker way to Cut, Copy and Paste is available when you right-click your mouse.)

Fill cells with a series of data

AutoFill (Fill cells with a series of data)

The AutoFill feature allows you to enter one or more cells with data and then by dragging the fill handle, will complete the sequence for adjoining cells you have selected, thus reducing the amount of data you need to enter. For example: Days of the Week, Months of the Year, straight numbering and incremental number.



Instructions:

1. Type *January* in a cell and press Enter.
 2. Select the cell, then drag the Fill Handle to the right 11 cells.
- Repeat these two steps, but type *Sunday* and drag the Fill Handle down 6 rows.
- Now try it with typing *1*, advance one cell and type *2*, advance another cell and type *3*.
- Try this again but type *5*, *10*, *15*.

Editing Data

Editing data ensures data integrity. Being able to edit your data allows you to make changes without having to recreate a new spreadsheet. There are a few different ways to edit data:

- You can click on the cell you wish to change, type the new information and exit the cell.
- You can double-click on the cell you wish to change and edit part of the data in the cell.
- You can click on the cell you wish to change and edit the data in the Formula Bar.

Undo and Redo Commands



The Undo and Redo commands are located on the Edit menu; however, the Undo and Redo buttons are located on the Standard toolbar and are more quickly accessible. The Undo command allows you to reverse one or more of your most recent actions while the Redo command will cancel one or more of your most recent Undo actions.

- A note of caution, not all actions can be undone in Excel; for example, you can't Undo File→Save.

Instructions:

1. Type *Winter* in a cell and press Enter.
2. Click on the same cell again and type *Fall* and press Enter.
3. Go to another cell and type *Summer* and press Enter.
4. Double click the cell again and highlight *Summ*; type *Wint* and press Enter.
5. Click on the cell again and move your cursor to the formula bar, highlight *Winter* and type *Spring*.
6. Now try out the Undo and Redo commands. *Note: The Redo button is not activated until you have used the Undo command.*

Insert and Delete Cells, Rows and Columns

The Insert and Delete commands allow you to modify the layout of your spreadsheet rather than creating a new one.

To Insert Rows:

1. Click on the row heading (numbers on left side of worksheet) where you want a new row inserted above.
2. Click Insert→Row.

To Insert Columns:

1. Click on the column heading (letters at top of worksheet) where you want a new column inserted before, or directly to the left.
2. Click Insert→Column

To Insert Cells:

1. Click on the cell where you want to insert a new cell either above or to the left of.
2. Click Insert→Cells. You will have four options:
 - Shift Cells Right
 - Shift Cells Down
 - Entire Row
 - Entire Column
3. Select your option and Click OK to close the Insert Dialog Box.

To Insert more than one row, column or cell, select the number of rows, columns or cells. For example, if you want to insert 5 new rows, select 5 numbers in the row headings. The selection can be either contiguous or noncontiguous.


To Delete Cells, Rows and Columns:

1. Click on the specific cell, row heading or column heading
2. Click Edit→Delete.
 - Rows and Columns will automatically delete;
 - If you selected a cell to delete, you will have four options:
 - a. Shift Cells Left
 - b. Shift Cells Up
 - c. Entire Row
 - d. Entire Column
3. Select your option and Click OK to close the Delete Dialog Box.

(There are buttons for Inserting Rows, Inserting Columns, Inserting Cells, Deleting Rows, Deleting Columns and Deleting cells that you can add to any toolbar; however, both the Insert and Delete commands are available when you Right-Click your mouse, .)

Find, Replace, and Go To Cell Data

The *Find* command locates specified data in a spreadsheet. It opens the *Find and Replace* dialog box:

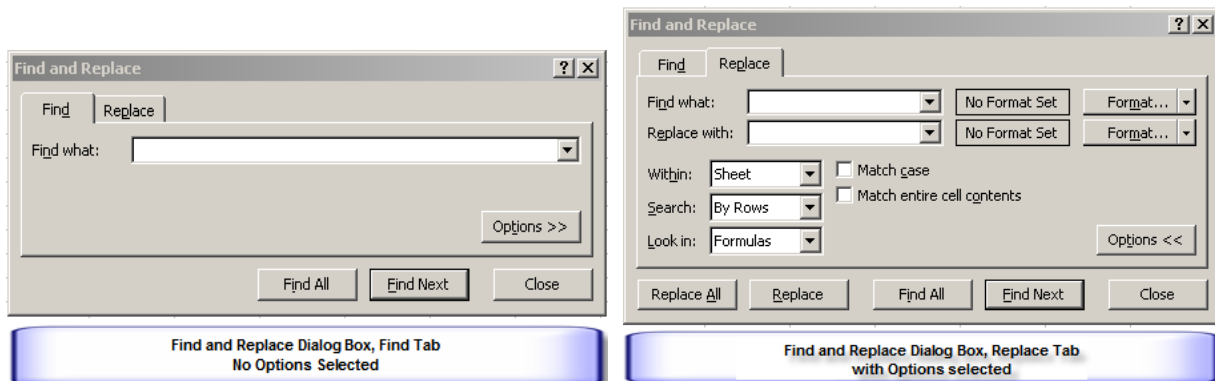
1. Click Edit→Find; or
2. Press Ctrl+F; or
3. Add the Find button  to a toolbar.

The *Replace* command replaces that certain data with new data you specify. The *Replace* command also opens the *Find and Replace* dialog box.

1. Click Edit→Replace; or
2. Press Ctrl+H.

(There is no button for the *Replace* command.)

The *Find and Replace dialog box* has options for searching, such as by format, by case if using text, and searching in formulas and comments. Both commands will search either for the next occurrence or for all occurrences.



Cell Names

You can give cells names rather than identifying them by their column number and row number (A1, B3, D5). You can also name a range of cells. Cell names can make it easier to locate certain data on a spreadsheet. They can also be used in formulas and make the formulas easier to understand. The cell name will appear in the Name Box (instead of the column/row identifier) when you select the cell.

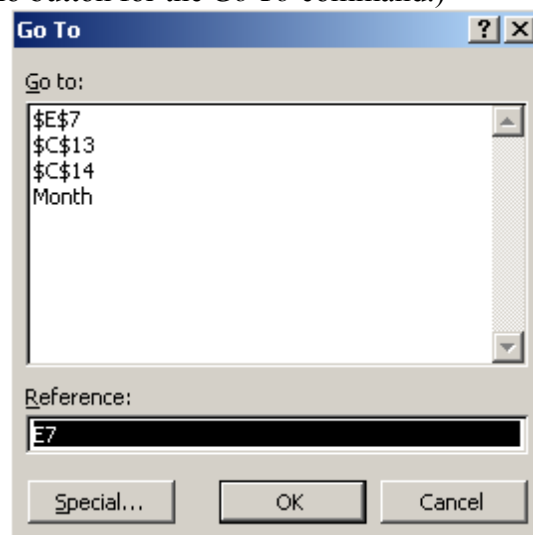
Go To

The *Go To* command takes you to a specific cell by the cell reference (A1, B3) or by the cell name. You can access the *Go To* command by:

1. Click Edit→Go To; or

2. Press Ctrl+G.

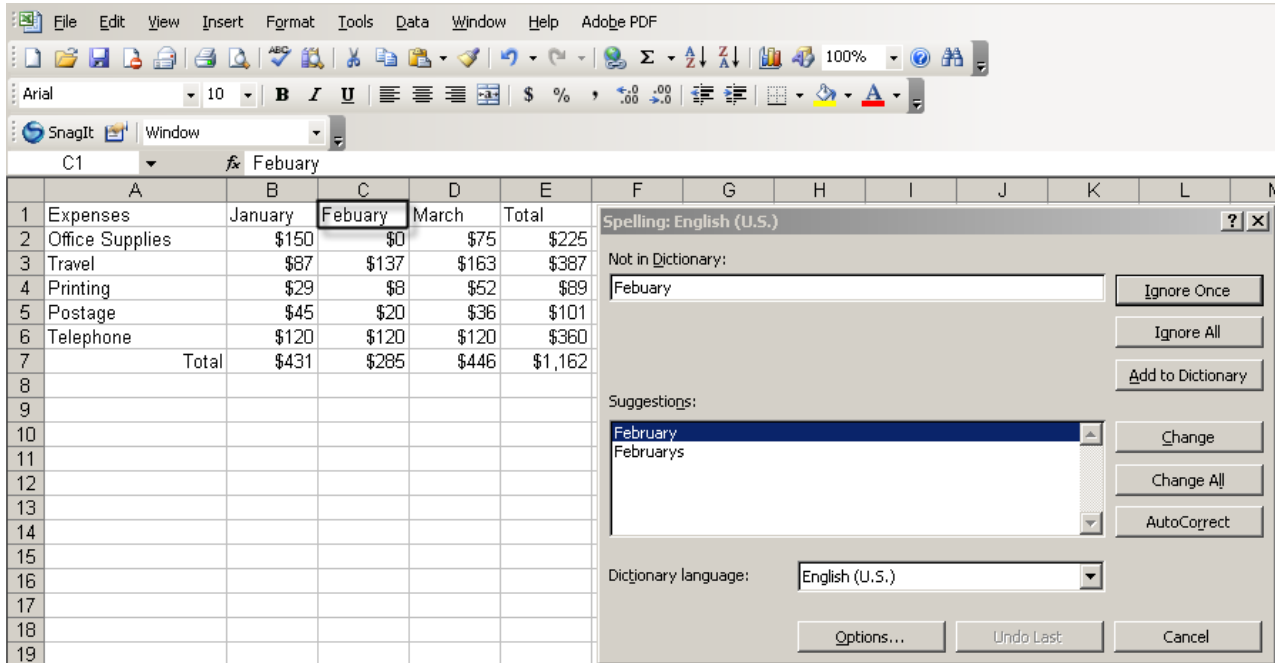
(There is no button for the *Go To* command.)



Go To Dialog Box

Spell Check a Worksheet

The *Spell Check* feature will check spelling for all of the text in your worksheet, just like any word processing program. To access *Spell Check*, click Tools→Spelling. This is the dialog box:



Spelling Dialog Box

Creating Basic Formulas

A *formula* is a set of mathematical instructions that performs calculations. Some common symbols are:

- The plus sign (+) for addition.
- The minus sign (-) for subtraction.
- The asterisk (*) for multiplication.
- The forward slash (/) for division.
- The caret symbol (^) for exponents.
- The open and close parentheses () to group computation instructions.

An *order of operations* is a sequence of computations that a formula follows to arrive at a desired result. The order of operations follows this sequence;

1. Computations enclosed in Parentheses, no matter where they appear in the formula.
2. Computations involving exponents .
3. Computations involving multiplication and division. Because they are equal with regard to the order in which Excel performs them, Excel performs them in the order in which it encounters them (from left to right).
4. Computations involving addition and subtraction, also performed in order in which Excel encounters them (from left to right).

Procedure:

1. Select cell where you want the formula to appear.
2. In the formula bar, type an equal sign (=), and then type the formula you want to perform.
3. Press Enter.

In Excel, all formulas begin with an equal sign (=). You can also write formulas with cell references rather than numbers. For example, if cell A1 contains a value of 3 and cell A2 contains a value of 6, you would write your formula as =A1+A2 in any cell and that cell will contain the result of the calculation: 9.

Type this data into a new spreadsheet:

	A	B	C	D	E
1	Expenses	January	February	March	Total
2	Office Supplies	\$150	\$0	\$75	
3	Travel	\$87	\$137	\$163	
4	Printing	\$29	\$8	\$52	
5	Postage	\$45	\$20	\$36	
6	Telephone	\$120	\$120	\$120	
7	Total				

Try these different ways to enter a simple formula of addition:

1. Select cell B7 and type the equals (=) sign.
2. Click cell B2, then press the plus (+) sign.
3. Click cell B3, then press the plus (+) sign.
4. Click cell B4, then press the plus (+) sign.
5. Click cell B5, then press the plus (+) sign.
6. Click cell B6, then press Enter.

The formula should look like this: =B2+B3+B4+B5+B6. (You could also manually type the cell identifiers in the formula bar but it is time consuming and gives opportunity for errors.)

A different way to create the same formula is:

1. Select cell C7 and type the equals (=) sign.
2. Type SUM(.
3. Click on cell C2 and then type a colon (:).
4. Click on cell C6,type a), then press Enter.

The formula will look like this: =SUM(C2:C6).

The quickest way would be:

1. Select cell D7 and click on the large Sigma button  located on your standard toolbar.

Try these different ways to enter an average formula:

1. Select cell E2 and type the equals (=) sign.
2. Type a (and click on cell B2, then type a +.
3. Type C2, then type a + and type D2.
4. Type a), then type a / and 3. Press Enter.

The formula will look like this: =(B2+C2+D2)/3.

Another way to write the formula would be:

1. Select cell E3 and type the equals (=) sign.
2. Type AVERAGE.
3. Type (B3:D3) and press Enter.

The formula will look like this: =AVERAGE(B3:D3).

The quickest way to write an average formula is:

1. Select cell E3 and click the Down Arrow on the large Sigma button .
2. Select *Average*.

Creating a Spreadsheet Lab

1. Create a new worksheet based on this information:								
	A	B	C	D	E	F	G	H
1	Expenses	January	February	March		Total		Average
2	Office Supplies	\$150	\$0	\$75				
3	Travel	\$87	\$137	\$163				
4	Printing	\$29	\$8	\$52				
5	Postage	\$45	\$20	\$36				
6	Telephone	\$120	\$120	\$120				
7			\$285					
8	Total							
9								
10	Average							
2. Remove the value in cell C7.								
3. Insert 2 rows below Row 6.								
4. Type <i>Utilities</i> in cell A7 and <i>Maintanance & Repiars</i> in cell A8.								
5. Enter the value \$100 in cells B7, then copy to cells C7 and D7.								
6. Enter the value \$50 in cells B8, then copy to cells C8 and D8.								
7. Insert 3 columns between existing Column D and Column E.								
8. Fill cells E1 through G1 with <i>April, May</i> and <i>June</i> .								
9. Edit cell A5 so that it reads <i>Postage & Frieght</i> .								
10. Create an Average formula in cells E2 through E8 that calculates the average value for the first three months.								
11. Type those values in cells F2 through G8								
12. Write formulas for the Totals for each expense item and each month.								
13. Delete Row 12.								
14. Write formulas for the Averages for each expense item and Average monthly total..								
15. Spell check the worksheet and correct any misspelled words.								
16. Save your work and close the file.								

The finished worksheet should look like this:

	A	B	C	D	E	F	G	H	I	J	K
1	Expenses	January	February	March	April	May	June		Total		Average
2	Office Supplies	\$150	\$0	\$75	\$75	\$75	\$75		\$450		\$75
3	Travel	\$87	\$137	\$163	\$129	\$129	\$129		\$774		\$129
4	Printing	\$29	\$8	\$52	\$30	\$30	\$30		\$179		\$30
5	Postage & Freight	\$45	\$20	\$36	\$34	\$34	\$34		\$203		\$34
6	Telephone	\$120	\$120	\$120	\$120	\$120	\$120		\$720		\$120
7	Utilities	\$100	\$100	\$100	\$100	\$100	\$100		\$600		\$100
8	Maintenance & Repairs	\$50	\$50	\$50	\$50	\$50	\$50		\$300		\$50
9											\$0
10	Total	\$581	\$435	\$596	\$537	\$538	\$538		\$3,225		\$538