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SECTION 1 ◇ WORKING WITH YOUR FIRST SPREADSHEET

What will I learn in this section?

Screen Elements

ScreenTips, Ribbon Tabs and QAT Customizing

Excel 2013/2016 Help

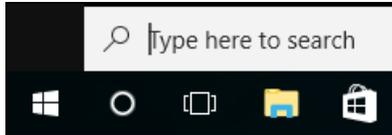
WORKING WITH YOUR FIRST SPREADSHEET

About Microsoft Excel 2013/2016

Creating basic *spreadsheets* in today's computer world is easy. Microsoft Excel 2013/2016 is a simple program that allows you to write, modify, save and print spreadsheets. As you explore Excel, you will learn about many of the features that make creating your spreadsheet fun and easy.

Working with Microsoft Excel 2013/2016

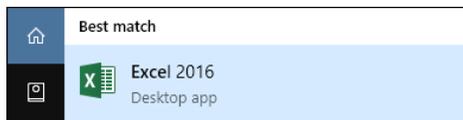
Click the **Start** button in *Windows 10* and type *Excel* in the search box.



Or **Windows 7** click the *Start* button and type *Excel* in the Start Search box. After a few seconds the menu will appear.



Click the **Excel 2013 or Excel 2016** Desktop app menu at the top.



About Screen Elements

Screen elements are consistent in all Microsoft Office applications. Therefore, once you learn how to use the screen elements in one application, you will be able to apply your knowledge in all Microsoft applications. On the next page the screenshot identifies the location of each screen element on the ribbon. The table following it defines each element.

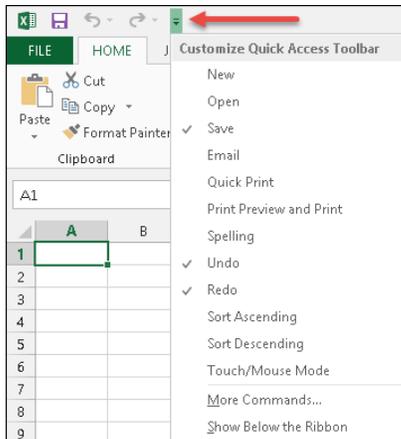
For the rest of the book you will use the ribbon configuration shown in this screenshot. The **default** (*the way your computer is first setup*) is with the Quick Access Toolbar (QAT) at the top over the Home tab. You can change this setting, so the Quick Access Toolbar is under the ribbon. This is a personal choice and has no effect on functionality. Generally, most individuals like the QAT below the ribbon.

Customizing Microsoft Excel

Do the following steps to make the change needed to place the Quick Access Toolbar (QAT) below the ribbon. In all of Microsoft applications you will find the QAT. The menu for the QAT can be accessed by clicking on the More  button on the right end of the tool bar. You will find the more button in different places in all the Microsoft applications.

1. Click the **More** button next to the **Quick Access Toolbar** right above the Home tab. (See screenshot below.)

Your screen should look like this in 2013:



In Excel 2016, it is in the same location, but the coloring is different.

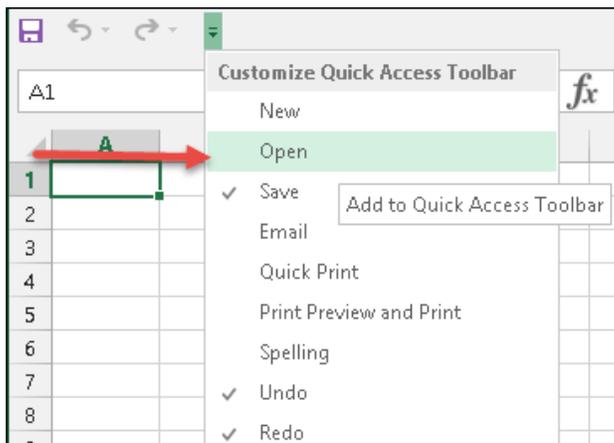


2. Click the **Show Below the Ribbon** menu.

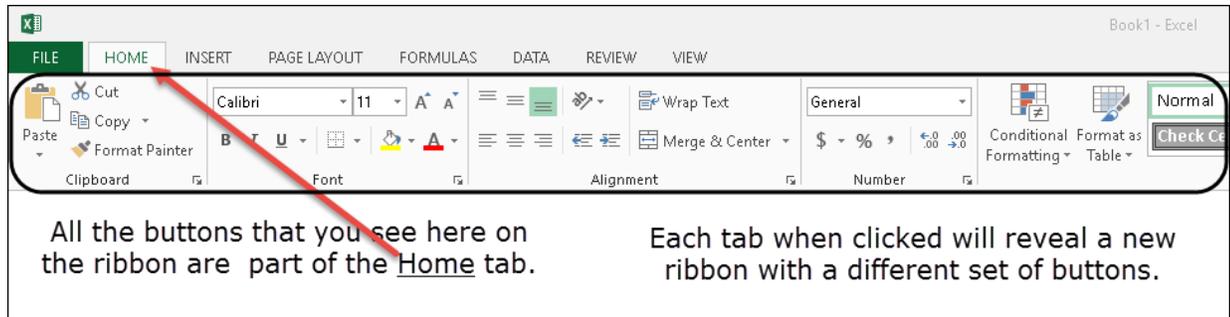


3. Click the **More** button again and click *Open* menu to add to your QAT.

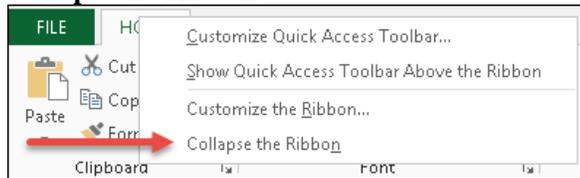
Your screen should look like this:



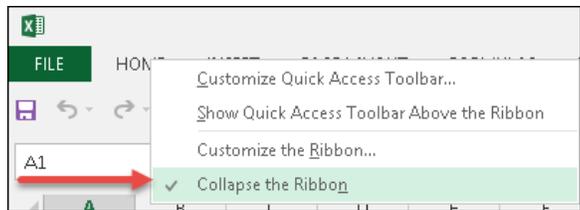
Working with Microsoft Excel 2013 or Excel 2016 Ribbon



You can hide the ribbon to add additional screen space, by a simple right-click on any tab and select **Collapse the Ribbon**.

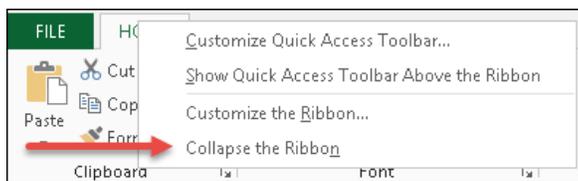


To have the ribbon return, right-click any tab and click **Collapse the Ribbon**.



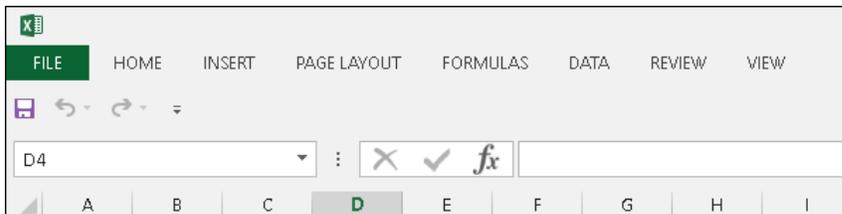
The ribbon can be collapsed or expanded by press the key combination: **[CTRL + F1]**
 This will toggle the ribbon to hide or unhide based on its current state.

1. Right-click the **Home** tab.



2. From the short cut menu, click on the **Collapse the Ribbon** menu item.

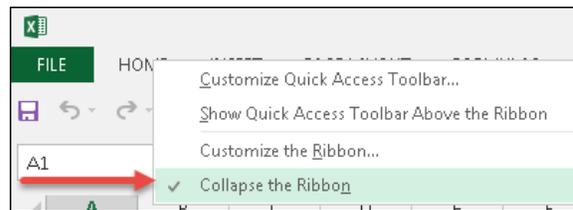
Your screen should look like this:



Tip: You can Double-click the active tab or press **[CTRL + F1]** to collapse or expand the ribbon.

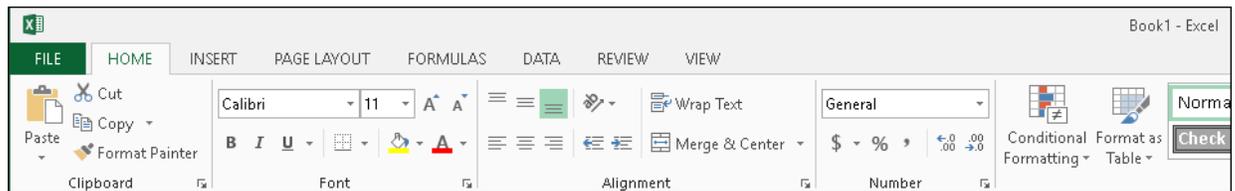
Notice this allows you to see a few more rows on your spread sheet while working.

3. Right-click the **Home** tab and click the **Collapse the Ribbon** menu again.



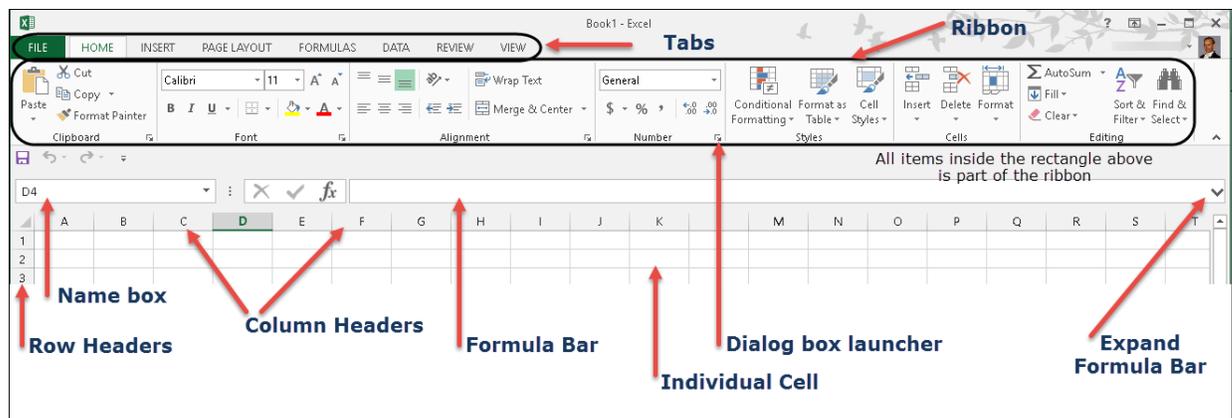
This will unhide the ribbon.

Your screen should look like this: (*Your ribbon has returned.*)



Main Screen Elements

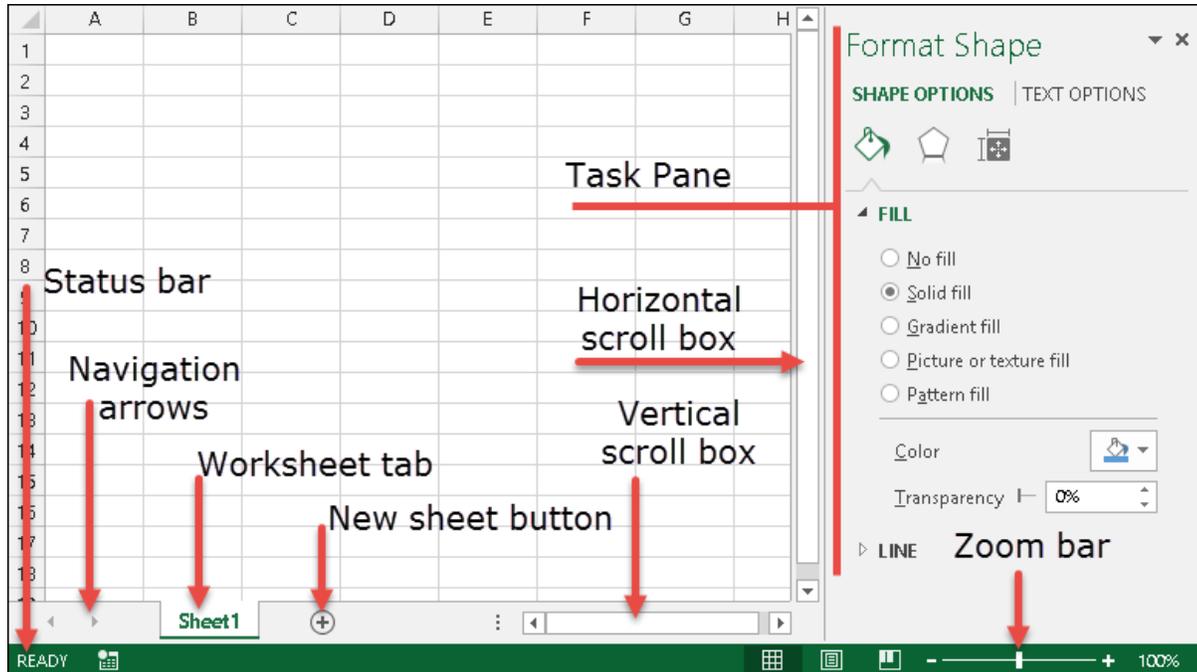
On the next page, you will see a layout of the main parts of your screen. Review this page from time to time to help you remember what things are called. By knowing the names of objects on your screen you will be able to communicate better with others. Sharing what you learn with others will make you more productive.



Element Title	Description
Active/Individual Cell	The active cell is the location of your cursor (sometimes called <i>focus</i>). This is where you have clicked on the spreadsheet to place a number or text. If you start typing your characters will go into that cell. Notice in the screenshot above cell address D4 is selected. If it was your spreadsheet and you started typing your characters would end up in cell D4 .
Dialog box launcher	The small down arrow at the bottom right corner of most command groups on the ribbon.
Expand Formula Bar	This down arrow will expand the formula bar to expose more content in the cell that is selected.
Tabs	The tabs are the horizontal listing of words across the top of the Excel application. The tabs start with Home and continue with Insert , Page Layout , Formulas , Data , Review and View .
Name box	Identifies the cell you are in and acts as a box if you type an address in the Name box and press [ENTER].
Ribbon	The Ribbon is below the tab names. The more common commands/functions are located here. As you click on a tab a different ribbon (<i>group of commands</i>) will appear.

Row & Column Headers	The row and column headers are used to make changes to row(s) or column(s). If you need to change the width, insert, delete or format either; you would right click the header.
Formula Bar	In Excel, you can create a formula in a cell or in the formula bar. The formula bar can be expanded to allow you to better see what you are creating.

Additional Screen Elements



Element Title	Description
Task Pane	The Task Pane displays normally on the right side of your screen. The Task Pane shows you options that support the feature in Excel it goes with.
Vertical and Horizontal Scroll Bars	The vertical and horizontal bars are located on the right side and on the bottom of the screen. Use the scroll box to move up or down, right and left, on larger spreadsheets to navigate to other parts of the spreadsheet.
Tab Scroll buttons	The Tab Scroll buttons allow you to move the tabs in your workbook from left to right. When you have multiple sheets with long names, some sheets could be out of site/hidden. To bring them in to view, you click the arrow heads to move the tabs left or right.
Sheet tab	Sheet tabs can be named and you click an individual sheet tab to make it active.
New sheet tab	When you need to add another sheet to your workbook, click this tab.
Status Bar	The Status bar is located at the bottom of the screen below sheet tabs and the horizontal scroll bar. The status bar displays useful information as you work. The word <i>Ready</i> is normally displayed on the left side when you first open a spreadsheet.
Zoom	The Zoom bar allows for increasing or decreasing the magnification of your worksheet. This is for viewing only and does not affect printing.

About Using ScreenTips, the Ribbon Tabs and Customization Options

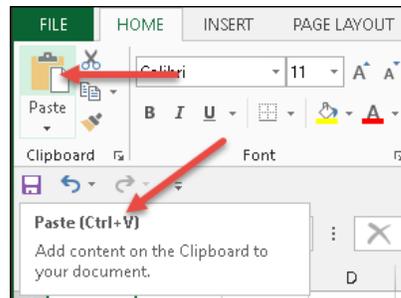
Every tool necessary to create and manipulate spreadsheets in Excel is found using one of the tabs. Many of the more commonly used commands are available by clicking a button on the ribbon. You do not need to memorize the buttons on a ribbon because each button has a description called a *ScreenTip*. A *ScreenTip* pops up when you rest (or *hover*) your mouse pointer on a button. If the button has a shortcut key, that will be displayed within the screen tip. Like screen elements, *ScreenTips*, menus and customization options are also consistent in all the Microsoft Office programs. In this book, you will be working with tabs, ribbons, and dialog boxes. The *ScreenTips* will come in handy as you learn the various buttons.

Understanding how the tabs are organized will assist you in finding a command that is not found on the currently displayed ribbon. The table below lists and defines the types of commands you will find on each tab choice.

Tab Choice	Description
Home	The Home tab contains common commands to work with your entire workbook. For example, New, Open, Save, Save As, Print, Prepare, Send, Publish and Close workbooks.
Insert	The Insert tab contains buttons that you click on to insert; a Table, Picture, Clip Art, Charts and Header and Footer in your workbook, to name a few.
Page Layout	Page Layout help you format your page for printing. Changing font color, effect, margins, background and print titles.
Formulas	This ribbon list the categories where different Formulas are stored. You can insert a function of any type from here.
Data	Data tab helps you manage large list of information. You can sort, filter, add subtotals, group and delete duplicate rows with the button on this ribbon.
Review	The View tab helps support Spell check, Thesaurus, Insert comments and protecting sheets or workbooks.
View	The View tab give you the ability to change how you view your spreadsheet. You can Zoom in or out, remove or add gridlines, even switch between spreadsheets.
Developer	The Developer tab will not appear unless you have entered the Excel Options on the File menu and check the box to view this tab. The check box is part of the Popular selection in the group labeled “Top options for working with Excel”.
Add-Ins	The Add-Ins tab will not appear unless you have add-ins. Meaning some other application that added a part of their program to Excel.

Working with ScreenTips

1. With the **Home** tab selected, rest your mouse pointer on the **Paste** button. *The Paste ScreenTip displays.*



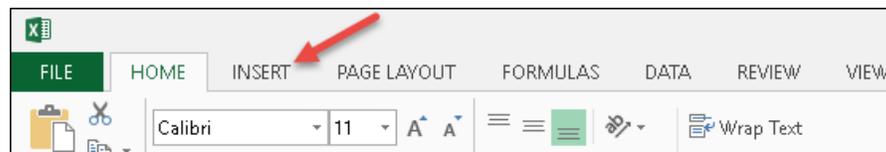
Tip: Press the [ALT] key to activate the menu keyboard commands.

Notice the shortcut key for this button is displayed with the screen tip.

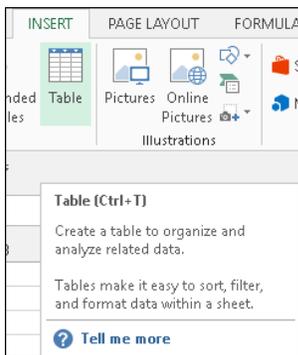
2. Rest your mouse pointer on other buttons to view **ScreenTips**.

Working with the Ribbon tabs

1. Click the tab labeled **at** the top, a new ribbon is displayed.



2. Rest/hover your mouse pointer on the **Table** button to view Screen Tip. *The Table ScreenTip displays.*



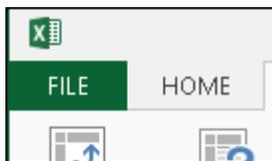
Notice the shortcut key for this button is displayed

3. If you would like to close the screen tip quickly, press the **ESC** key on the keyboard.
The screen tip closes.

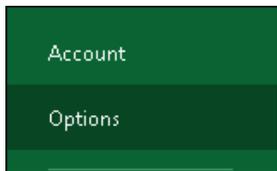
Working with Excel Options

In the Excel Options dialog box you can change the number of sheets that will be in a new workbook, you can change the default format the file will be saved in when you do a normal save, change the **default font** that will be used in future new workbook, and many other standard setting in Microsoft Excel.

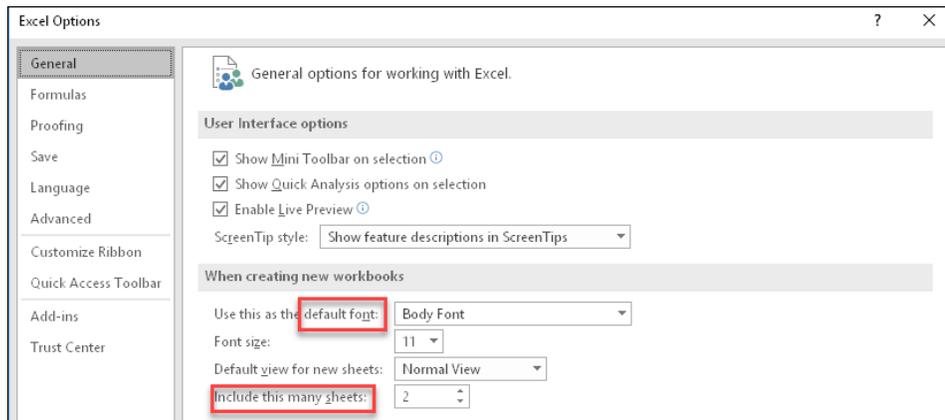
1. Click the **File** tab.



2. Click the **Excel Options** button at the bottom.



Your screen should look like this:



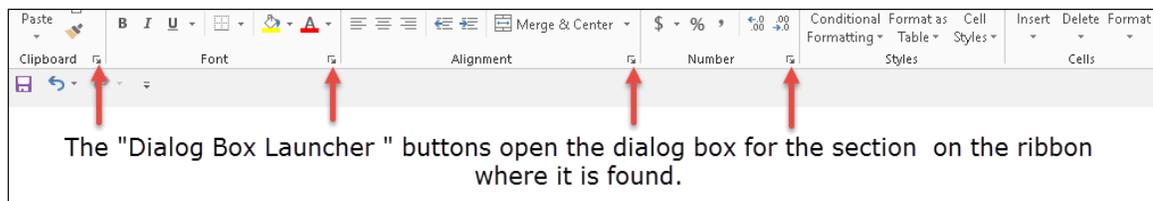
Notice that here you can change the default font and the number of sheets to include in a new workbook.

1. Click the **Down arrow** for “Use this font:” and select **Times New Roman**.



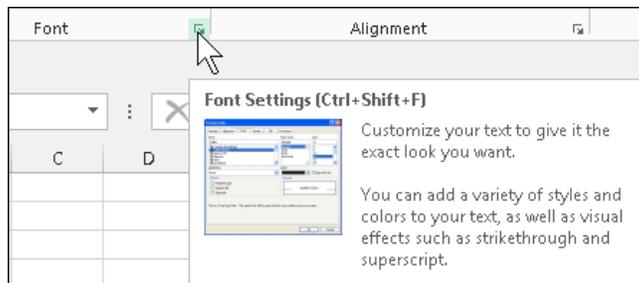
2. Click the **OK** button.
3. **Note:** The next new spreadsheet you open will have **Times New Roman** as your default font.
4. Click the message **OK** button to close the Excel message.
Remember you must close Excel to have the new font take effect.

Working with Dialog Box Launcher buttons



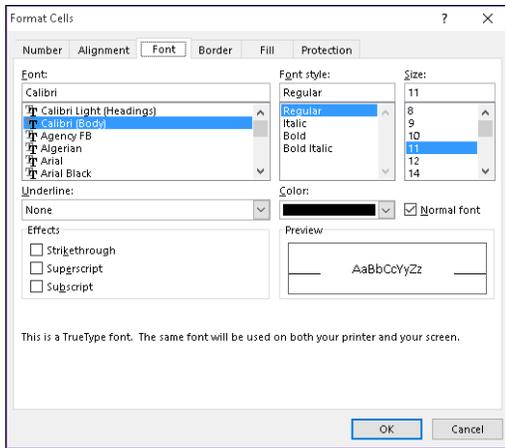
1. Locate the **Font Dialog box Launcher** button.

Your screen should look like this:



2. Click the **Font Dialog Box Launcher** button and the Format Cells dialog box appears.

Your screen should look like this:



Tip: The keyboard shortcut key to open this dialog box is:
[CTRL + Shift + F]
 OR
[CTRL + 1]

Notice that the Font tab is selected in the dialog box. You will not use any now, but later in the book you will use the Format Cells dialog box.

3. Click the **Cancel** button to close the **Format Cells** dialog box.

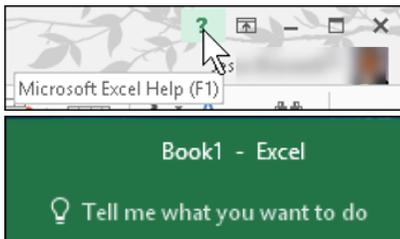
General Information about Worksheet

As you look at your spreadsheet, notice that there are letters across the top and number down the side. The letters are to identify the columns and the numbers are to identify the rows. One thing that you may not have noticed is the large size of your spreadsheet. How large is it you ask? There are *16,384 columns* across and *1,048,576 rows* down. The columns use letters, starting out with A and end with XFD. The rows use numbers, starting with 1 and end with 1,048,576.

A few other interesting facts about Excel –2013/2016: Limited only by available memory and system resources; Column width 255 characters, Row height 409 points, a Cell can hold 32,767 characters, Filter drop-down list holds 10,000, Undo levels 100 and nested levels in a formula = 64.

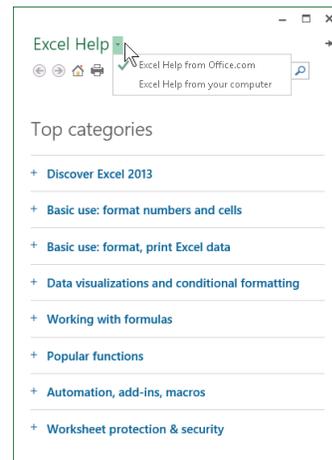
About Using Excel 2013/2016 Help

All software programs come with help that you may need in your daily tasks. You can access help one of two ways – either through the **Help menu button**. (See screenshot below this paragraph.) Or, you can press the **F1** function key on your keyboard. F1 is located at the top left of the keyboard. Either way, a Microsoft Excel Help window will display on your screen. The help files searches in two ways: Searching Office.com and the Excel help file on your computer. (See second screenshot, the one on the right, to see the menu for these two.)



question mark in Excel 2013
 text box in Excel 2016

The Search feature gives you the ability to search for information or explanations about the topic you would like to learn more about. If you have a connection to the internet this feature will also search the Microsoft web site for information. Click the down arrow to turn off the “Excel Help from Office.com”.

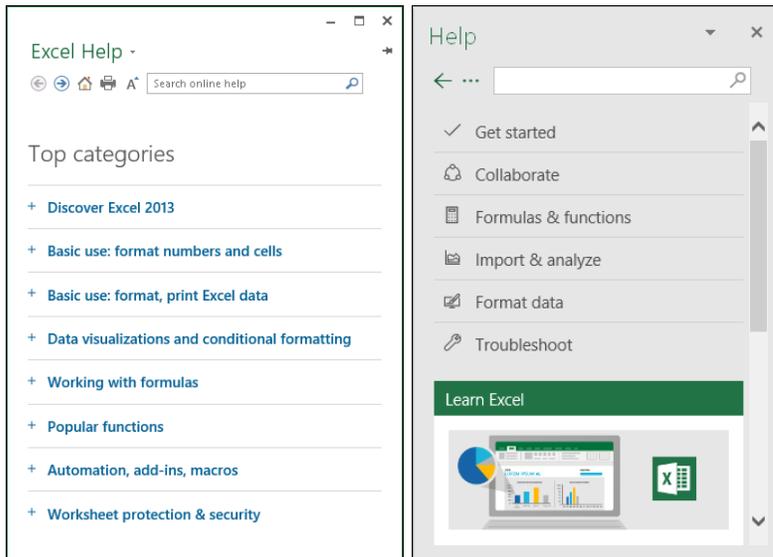


The Help dialog is arranged by the *Top Categories* when it first opens. The top categories are further broken down into subcategories. To see the subcategories, just click on the plus sign (+) next to the category you would like to open. When you find a topic you are interested in, click the title and you will see the help information appear in the help dialog box.

Working with Help

1. Press [F1] on your keyboard.

Your screen for Excel 2013 on the left for Excel 2016 on the right.

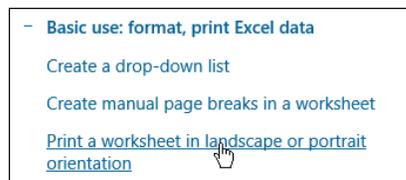


Note: When help appears in 2013, it should be on top of Excel. To make sure that your help dialog box does not hide when you click on Excel, make sure the “Keep on Top” pin is pushed in.

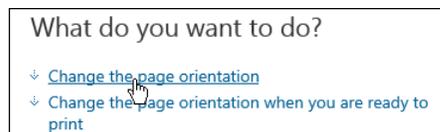
2. Click the plus sign (+) for **Basic use: format, print Excel data**.



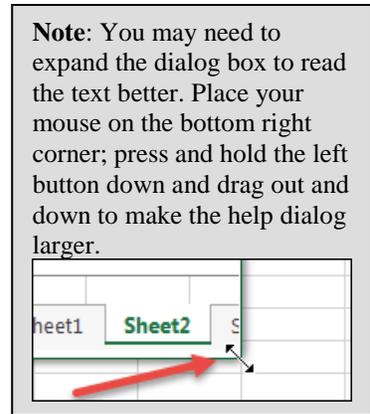
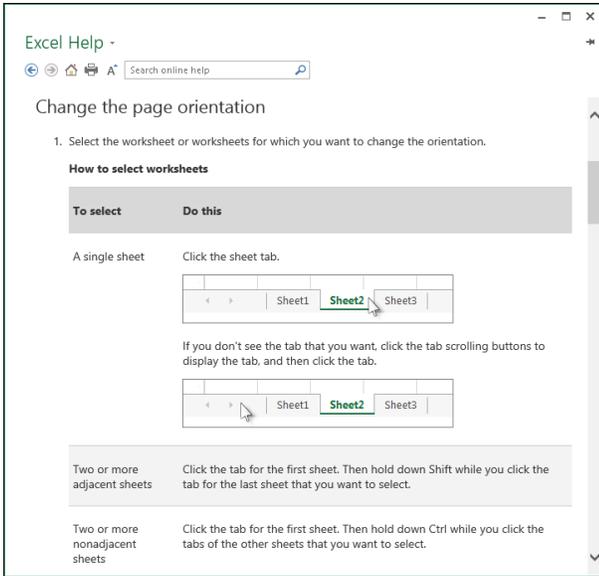
3. Under the heading, click *Print a worksheet in landscape or portrait orientation*.



4. In the center of this screen click *Change the page orientation* under the heading *What do you want to do?*

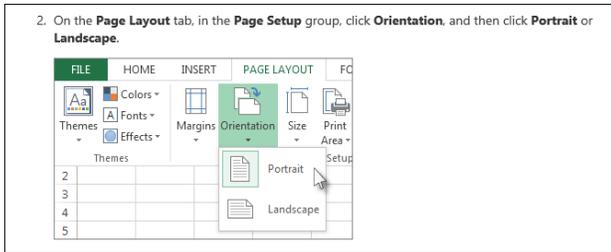


Your screen should look like this:

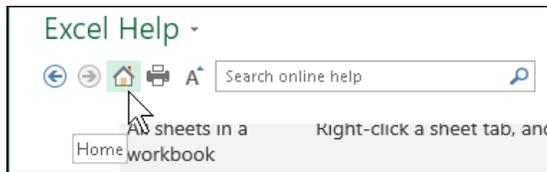


5. Scroll down to number 2 and **Read** your instruction to change Orientation.

Your screen should look like this:



6. Click the **Home** button.



Note: The Microsoft Excel 2013/2016 Help Home button returns you to the beginning state of the Excel Help dialog box.

7. Click the **C**lose button in the top right corner of the Help dialog box.
This will close your help dialog box.



Close a workbook

1. Click the **File** tab

The keyboard shortcut is [CTRL + W] to close the workbook.



2. Click the **Close** button.

The keyboard shortcut is [CTRL + W] to close the workbook.





Section 1 – Exercise

Scenario

You need to start Excel, control the toolbars and use Help to make adjustments in Excel.

What to Do: Change worksheet number to 8 for New Workbook, change the setting for Menu to animations

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**.
For an example, refer to page 4.
2. How do you move the Quick Access Toolbar?
For an example, refer to page 5.
3. Change the Font used in Excel to Arial. Remember this is for all future spreadsheets.
For an example, refer to page 11.
4. Click the **Close** button to close the Customize dialog box.
5. Open the **Excel options** and change the Sheets in a New Workbook to 3.
6. Click **OK** when done.
7. Press [**F1**] to start help and write down the main areas or menu items that help you find a topic of interest.
8. Close the **Help window**.
9. Close the blank workbook.

Section 1 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. What steps do you follow to move your Quick Access toolbars?
2. What are the steps to change the number of worksheets that a new workbook will have when Excel first opens?
3. What is the keyboard command for help?
4. What are the three ways to search for information in the Help window?

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: Options, Customize, and Help

SECTION 2 ♦ USING EXCEL BASICS FEATURES

What will I learn in this section?

Navigating in a spreadsheet

Selecting cells

Entering text and numbers

Save As and Save

Drag and Drop to move text

Replacing, Editing and Deleting

Undo and Redo

Print Preview

Printing

USING MICROSOFT EXCEL BASICS FEATURES

Navigation and selection when working with a Worksheet

First you will open an existing workbook to learn about navigation. As you build your foundation with Microsoft Excel, you will learn how to create and modify the cells, columns and rows.

There are five basic parts to a spreadsheet; columns, rows, column headings, row headings and a cell. The cell is the smallest part and has an individual address. The first cell address on your spreadsheet is A1. This cell address tells you the location of this cell. Cell A1 is the first cell on the first row in the first column.

The row heading is the gray box to the far left with the number inside. The column heading is the gray box at the top of each column where letter(s) identify the column. Our rows are displayed horizontally and columns are displayed vertically, these make up the gridlines in our spreadsheet.

Just a few statistics for you:

A Cell holds:	<i>32,767 characters, 1,024 display in a cell; all 32,767 display in the formula bar.</i>
A worksheet holds:	<i>1,048,576 rows and 16,384 columns.</i>
Sheets in workbook:	<i>limited by available memory</i>
Undo levels:	<i>100</i>
Zoom range:	<i>10 to 400 percent</i>

Open an existing workbook

1. Click the **File** tab.

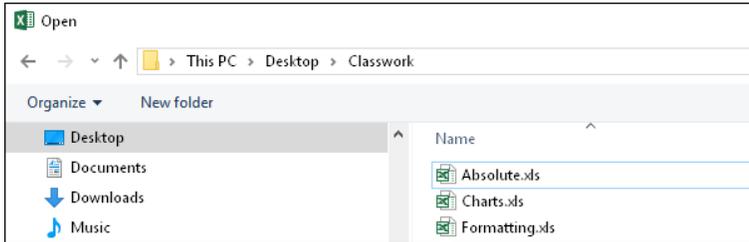


2. Click the Open menu area click the **Browse** menu.



3. Navigate to the **location** the instructor indicates if needed.
4. Double-click **Classwork** folder on the desktop.
The Classwork folder for class will be on the Desktop.

Your screen should look like this:



5. Double-click **Classwork** folder on the desktop.
6. Double-click **Navigate** workbook to open.



Your screen should look like this:

	A	B	C	D	E	F
1						
2						
3		Jan	Feb	Mar	Qtr Totals	
4	North	300	298	321	919	
5	South	298	276	302	876	
6	East	302	279	337	918	
7	West	311	321	342	974	
8						
9						

The following table list, some of the more common keyboard shortcuts.

KEYBOARD SHORTCUTS

KEY TO USE	ACTION
[ALT + PAGE DOWN]	Moves right one screen space
[ALT + PAGE UP]	Moves left one screen space
[CTRL + .] (<i>period</i>)	Moves clockwise to the next corner of a selected range
[CTRL + BACKSPACE]	Moves your screen to the active cell
[CTRL + END]	Moves active cell to last row and column with data
[CTRL + HOME]	Moves active cell to address A1
[CTRL + LEFT ARROW]	Moves left to end of data or end of sheet
[CTRL + PAGE DOWN]	Makes next sheet to the right active
[CTRL + PAGE UP]	Makes next sheet to the left active
[CTRL + RIGHT ARROW]	Moves right to end of data or end of sheet
[CTRL + ALT + LEFT ARROW]	With nonadjacent cells or ranges selected, move to the next selection to the left

[CTRL + ALT + RIGHT ARROW]	With nonadjacent cell or ranges selected, move to the next selection to the right
[DOWN ARROW]	Moves active cell one row – down
[END + ARROW]	Moves to the end of data in the direction of the arrow
[HOME]	Moves active cell to beginning of the row
[LEFT ARROW]	Moves active cell one column – left
[PAGE DOWN]	Moves down one screen space
[PAGE UP]	Moves up one screen space
[RIGHT ARROW]	Moves active cell one column – right
[SHIFT + ENTER]	Moves up to cell above current cell
[SHIFT + TAB]	Moves active cell left one cell
[TAB]	Moves active cell right one cell
[UP ARROW]	Moves active cell one row – up

Navigate on a spreadsheet

1. Press [**CTRL + HOME**].
Cell A1 is now selected and the active cell.
2. Press [**DOWN ARROW**] three times.
3. Press [**CTRL + RIGHT ARROW**].
4. Press [**HOME**].
5. Press [**ALT + PAGE DOWN**] three times.
6. Press [**HOME**].

Tip: To select a column of data, click in the first cell with data; hold the [CTRL + SHIFT] and tap the **down arrow**. Also to select a column of data; hold the Shift, then tap the [END], then tap the **down arrow**.

Move between sheets

1. Press [**CTRL + PAGE DOWN**].
2. Press [**CTRL + PAGE DOWN**].
Sheet 3 is displayed.
3. Press [**CTRL + PAGE UP**] twice.
Moves you back to sheet1.

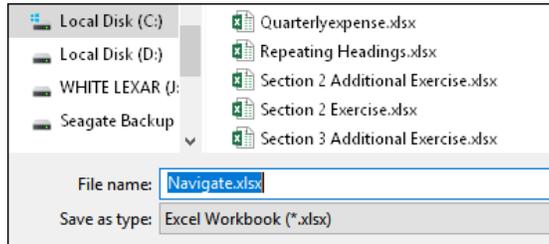
Using the Save As command

The **Save As** command allows you to save your existing document with a different name and if you need a different location. It is in the backstage area once you click the **File** tab. The hotkey for Save As is **F12**.

Save a file with a different name

1. Click the **File** tab, click **Save As** and click the **Browse** menu item to the right.
Verify that the Classwork folder is displayed in the Address bar.
2. Verify that **Navigate** is selected in the File Name box.
Verify that the Classwork folder is displayed in the Address bar.

Your screen should look like this:



Tip: The keyboard shortcut key for Save As is [**F12**].

3. Type: **Practice Navigate** in the File name text box.
4. Click the **Save** button.
Your original workbook (Navigate) is closed. The new workbook (Practice Navigate) is displayed.

Tip: The keyboard shortcut key for Save As... is [**F12**]. To save is [**CTRL + S**] To save your updates easily.

Selecting cells

The following table identifies a few ways to select an area in an Excel spreadsheet.

Select	Description
Click cell	By clicking (using the left mouse button) once while your mouse pointer is over a cell you select that single cell.
Hold [SHIFT] & click	By clicking on cell A1 (to make it the active cell) and then moving your mouse pointer to cell address D5, you press down the [SHIFT] key and click D5. This will select the range from A1 to D5 and all cells between.
Hold [CTRL] & click	Non-contiguous cell selection. To select more than one group of cells in two or more separate areas.
Press & drag	By pressing down the left mouse button while over a cell and dragging to a new location you select the area that is between the starting point and the ending point.
[CTRL] & A	Click inside the table area and press [CTRL] + A. The old keyboard shortcut is: [CTRL] and [SHIFT] together, and press the [EIGHT]. (<i>Not the number keypad.</i>)
CTRL +] (<i>closing bracket</i>)	Selects Formulas that directly reference the active cell – if there is not one a message will appear.

1. Select cell **A4**.
Click once on the word North.
2. Hold down the [**SHIFT**] key and click **E7**.
The area from A4 to E7 is select.

Your screen should look like this:

A4		fx North			
	A	B	C	D	E
1					
2					
3		Jan	Feb	Mar	Qtr Totals
4	North	300	298	321	919
5	South	298	276	302	876
6	East	302	279	337	918
7	West	311	321	342	974
8					

Tip: If your mouse has a wheel it can also be used to navigate the spreadsheet. Roll the wheel away from you, you scroll up the spreadsheet. Roll the wheel to you, you scroll down the spreadsheet. If you click the wheel the movement feature is turned on and as you move the mouse left, right, up or down you scroll in that direction. Click the wheel a second time to turn it off.

3. While over **B3**, press and hold down the left mouse button. Move the mouse to cell **E3**.
4. Release the mouse button.

Your screen should look like this:

B3		fx Jan			
	A	B	C	D	E
1					
2					
3		Jan	Feb	Mar	Qtr Totals
4	North	300	298	321	919
5	South	298	276	302	876
6	East	302	279	337	918
7	West	311	321	342	974
8					

5. Click cell **B5**.
This is the same as Clicking on cell B5.
6. Press [**CTRL**] + [**A**].

Your screen should look like this:

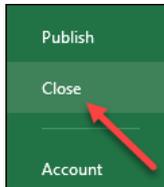
B5		fx 298			
	A	B	C	D	E
1					
2					
3		Jan	Feb	Mar	Qtr Totals
4	North	300	298	321	919
5	South	298	276	302	876
6	East	302	279	337	918
7	West	311	321	342	974
8					

Close the workbook

1. Click the **File** tab.
The keyboard shortcut is **[CTRL + W]** or **[CTRL + F4]** to close the workbook.



2. Click the **Close** button.
The keyboard shortcut is **[CTRL + W]** or **[CTRL + F4]** to close the workbook.

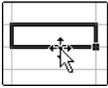
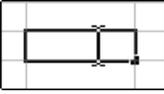


Creating a Workbook and Modifying a Worksheet

You create a workbook by opening Excel or while in Excel clicking the, New menu item on the Office Button menu. After you have opened a new workbook you will enter text and numbers to build our first worksheet. As you type text into a cell you create labels. With a few labels to structure your worksheet you can enter data, formulas, and functions to make your worksheet complete.

As you start to enter data, remember that **[ENTER]** completes the entry and pressing **[ESC]** cancels it. You will work with both keys as you go through the next section.

Before you start editing a single cell or multiple cells you need to review the mouse pointer. Excel is a very powerful application and using the mouse can be a great tool, once you learn its signs. The way the mouse communicates with us is by changing its symbol or sign. The table below will help you identify each pointer's sign and its function.

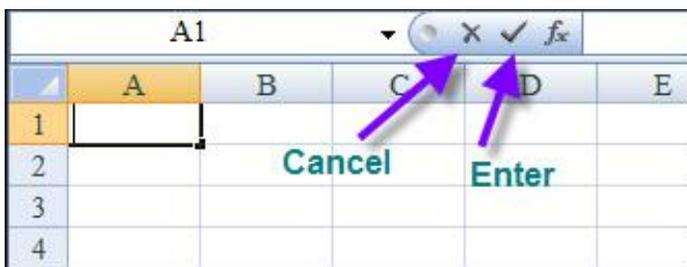
Pointer	Function
	The white plus symbol identifies that your mouse is able to select cell(s). If you click the left mouse button you will select the cell underneath. If you press and drag the mouse you can select more than one cell.
	The standard white arrow head mouse pointer with the four black arrows identifies that your mouse is able to move cell(s). If you press and hold your left mouse button down and drag, when you release the mouse button at the new location the contents of the cell you are dragging will be moved to the new location. 
	The black plus symbol in the lower right corner of a selected cell, identifies that you are over the AutoFill handle. You will use the AutoFill handle later in this book. 
	The I-beam symbol identifies that you are over a cell that is in edit mode. Edit mode means that you can type, edit and make correction to the contents of the active cell. If the cell has a formula or text, you can place the cursor between any characters by moving the I-beam to the desired location and click.

Creating a New Workbook

In this section, you learn the basics of creating a workbook and adding information. After you complete the text or numbers in an individual cell you will press [ENTER] or [TAB]. If you press the [ENTER] key the active cell moves down one. If you press [TAB] the active cell moves to the right. Press [Shift + TAB] the active cell moves to the left. Press [Shift + ENTER] moves you up a row.

There is one more item that you should be aware of. The Enter and Cancel button located to the right of the Name box is a handy button when you have your hand on the mouse. The red X is for Cancel and the green check mark is for Enter. The trick is that you cannot see them unless you are in edit mode (*typing in a cell*). Remember that if you are in edit mode most of your menu commands will not work. Clicking on the red X is the same as pressing the [ESC] key and clicking on the green check mark is the same as pressing [CTRL + ENTER].

The [CTRL + ENTER] key combination is the same as [ENTER] but the active cell dose not move.

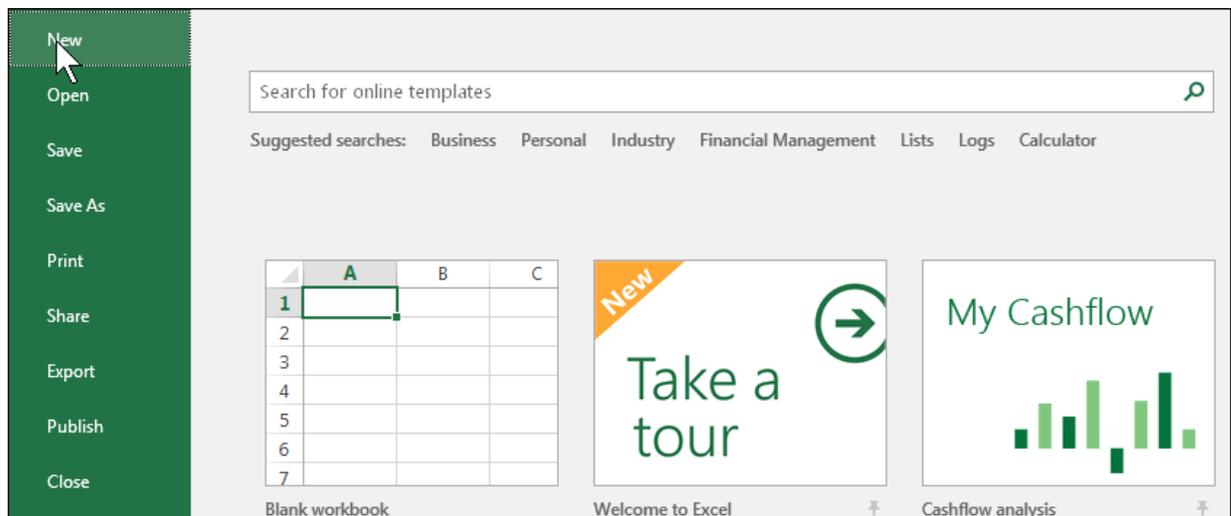


Adding labels

Next you will create a new workbook to begin filling in information on your spreadsheet.

1. Click the **File** tab and click **New**.

Your screen should look like this:



2. Double-click the **Blank workbook** template to create a new workbook.
3. Type: **First Quarter Sales** and press [ENTER] three times.

4. Type: **Widget 201** and press [**ENTER**].
5. Type: **Widget 202** and press [**ENTER**].
6. Type: **Widget 203** and press [**ENTER**].
7. Type: **Widget 204** and press [**ENTER**].

Your screen should look like this:

	A	B	C	D	E
1	First Quarter Sales				
2					
3					
4	Widget 201				
5	Widget 202				
6	Widget 203				
7	Widget 204				
8					

8. Click cell **B3**.
9. Type: **Jan** and press [**TAB**].
10. Type: **Feb** and press [**TAB**].
11. Type: **Mar** and press [**TAB**].
12. Type: **Totals** and press [**TAB**].

Your screen should look like this:

	A	B	C	D	E
1	First Quarter Sales				
2					
3		Jan	Feb	Mar	Totals
4	Widget 201				
5	Widget 202				
6	Widget 203				
7	Widget 204				

Adding numbers

1. Click the cell **B4**.
2. Type: **231** and press [**TAB**].
3. Type: **243** and press [**TAB**].
4. Type: **252** and press [**ENTER**].
5. Type: **523** and press [**TAB**].
6. Type: **487** and press [**TAB**].
7. Type: **544** and press [**ENTER**].
8. Type: **345** and press [**TAB**].
9. Type: **367** and press [**TAB**].

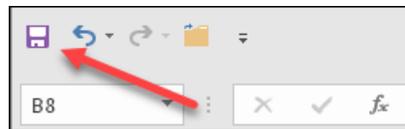
10. Type: **398** and press [**ENTER**].
11. Type: **439** and press [**TAB**].
12. Type: **401** and press [**TAB**].
13. Type: **458** and press [**ENTER**].

Your screen should look like this:

	A	B	C	D	E
1	First Quarter Sales				
2					
3		Jan	Feb	Mar	Totals
4	Widget 20	231	243	252	
5	Widget 20	523	487	544	
6	Widget 20	345	367	398	
7	Widget 20	439	401	458	
8					
9					

Save the workbook

1. Click the **Save** button on the Quick Access toolbar.



Tip: The keyboard shortcut key for Save As... is: [F12]
The keyboard shortcut for Save is: [CTRL + S]

2. Verify that the **Classwork** folder is selected in the address bar, and Type: **First Quarter Sales**.

Your screen should look like this:

File name:	First Quarter Sales
Save as type:	Excel Workbook (*.xlsx)

3. Click the **Save** button.
Your new workbook has been saved.

Your screen should look like this:

	A	B	C	D	E
1	First Quarter Sales				
2					
3		Jan	Feb	Mar	Totals
4	Widget 20	231	243	252	
5	Widget 20	523	487	544	
6	Widget 20	345	367	398	
7	Widget 20	439	401	458	
8					

Moving text on a spreadsheet

You move cell content around on your spreadsheet just by selecting it and dragging the cell contents with the mouse. In the next few steps you will learn to move and copy information around on your spreadsheet.

1. Click cell **A1**.
2. Place your mouse pointer on the **bottom border** of cell A1.
Notice the four way symbol that appears on the tip of your mouse pointer.

	A	B	C
1	First Quarter Sales		
2			
3		Jan	Feb

3. Press the **left** mouse button down and **hold**, move your mouse pointer to **C1**.
4. **Release** the mouse button.
The text “First Quarter Sales” has been moved to cell C1.

Move and copy text

To move text or numbers on your spreadsheet and copy at the same time, you need to add the [CTRL] key to the mouse action. It will take two hands to complete this action.

1. Click cell **E3**.
2. Place your mouse pointer on the **bottom border** of cell **E3**.
You now have a four way pointer added to your mouse pointer.
3. Hold down [**CTRL**] key with one hand.
The pointer now has a plus symbol next to it not the four way pointer.

ar	Totals		
252			

4. Press the **left** mouse button down and hold, move your mouse pointer to **A8**.
5. **Release** the mouse button and then the [**CTRL**] key.

Your screen should look like this:

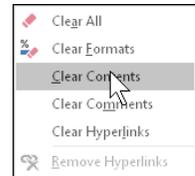
	A	B	C	D	E
1			First Quarter Sales		
2					
3		Jan	Feb	Mar	Totals
4	Widget 20	231	243	252	
5	Widget 20	523	487	544	
6	Widget 20	345	367	398	
7	Widget 20	439	401	458	
8	Totals				

6. Click the **Save** button or press [**CTRL** + **S**] to save.

Editing and Deleting text

As you work on your spreadsheet you will need to make changes. When you select a cell you can type over the current text or numbers, delete the contents or double click the cell to edit. In the next few steps you will do all three. First you will replace the heading by typing over the cell content. Edit cell A8 by changing the text in the cell and delete the contents of a cell using the right mouse button.

On the *Home* tab in the *Editing* group you have the Clear feature. This can be used to Clear Content as well as items. The Clear Content can also be accessed by pressing the right mouse button to view a menu and selecting Clear Content.



1. Click cell **C1** and press **[F2]**.
2. Press the **[Space bar]** and type: Report
3. Press **[ENTER]**.
4. Right-click cell **E3** and select **Clear Contents** from the shortcut menu.

Your screen should look like this:

	A	B	C	D	E
1			First Quarter Sales Report		
2					
3		Jan	Feb	Mar	
4	Widget 20	231	243	252	
5	Widget 20	523	487	544	
6	Widget 20	345	367	398	
7	Widget 20	439	401	458	
8	Totals				

Undo and Redo

In Excel you can undo 100 edits. As you need to correct a last minute change or add something back in that you have removed this can be done with a few steps. Your Undo and Redo buttons are on your Quick Access Toolbar.



1. Click the **Undo** button.
The text Total is placed back into cell E3.



2. Click the **Redo** button.



3. Click the **Undo** button to place Totals back in cell E3.

Print Preview and Printing a workbook

After you save your workbook, you may need a printed copy. With the Print feature, you can print one or more copies. You can even specify Active sheet(s), Selection, or Entire workbook to print. If all you need to print is a single copy of your workbook, click the Print button on the Standard toolbar. If you choose the File | Print command from the menu bar, you can specify Active sheet(s), Selection, Entire workbook, or print multiple copies of any of the three. The Print Preview button shows you a simulated print of the selected item. This is a good way to save paper.

Print Preview the workbook

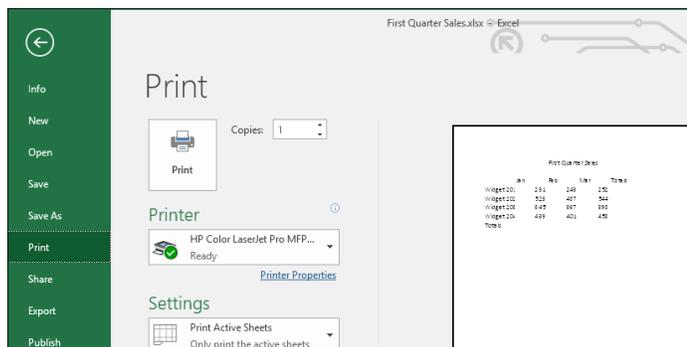
1. Click the **File** tab.



2. Click **Print** and a **Print Preview** of your documents appears within the print dialog box.

The keyboard shortcut is [CTRL +P] to open the print dialog box.

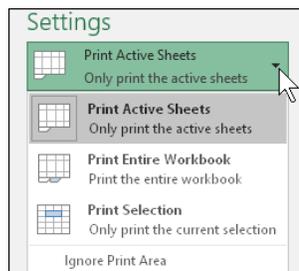
Your screen should look like this:



3. Press the **[ESC]** key to close the print dialog box.
4. Press the **[CTRL + P]** keyboard shortcut to re-open the print dialog box.

Notice under the Settings title you have Print Active Sheets. When selected you have four choices: Print Active Sheets, Print Entire Workbook, Print Selection and Ignore Print Area.

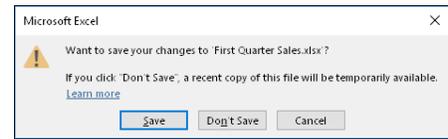
5. Click the **down arrow** for *Print Active Sheets* button.



6. Select from the drop down, **Ignore Print Area**.
7. No, you will not print. Press **[ESC]** key to return to your workbook.

Close the workbook

1. Press **[CTRL + W]** to close the workbook.
The keyboard shortcut is [CTRL + F4] to close the workbook also.
2. If prompted to save the workbook, click the **Don't Save** button.





Section 2 – Exercise

Scenario

Your manager has given you the task of navigating a new spreadsheet and making minor changes.

What To Do: Add, Copy and Edit

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**.
For an example, refer to page 4.
2. Open the file, **Section 2 Exercise** file.
For an example, refer to page 19.
3. Select (highlight) the complete table from **B4** to **G8**.
For an example, refer to page 22.
4. In cell **H4** add the label **Totals**.
For an example, refer to page 25.
5. Copy the label **Totals** in cell **H4** to cell **B9**.
For an example, refer to page 28.
6. Change the label in cell **B4** to **Sales Staff**.
For an example, refer to page 29.
7. Save and close all open files.

Section 2 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. What is the keyboard shortcut to return the active cell to A1?
2. How do you save your workbook with new/different name?
3. Name one way to select an area on your spreadsheet?
4. How do you move the contents of a cell from one location to another?
5. Where is the Print Preview menu?

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: file name (rename a file), Select (select data or cells) and Print preview (Print preview commands)

SECTION 3 ♦ CREATING FORMULAS

What will I learn in this section?

Creating Formulas

Mastering AutoFill

Moving and Copying Formulas

CREATING FORMULAS

Creating and Using Formulas

In this section, you learn how to create formulas. Formulas are the way that you take advantage of the power and flexibility of an electronic spreadsheet. When you create a formula the cell address(es) are always used to complete the mathematical calculation. By using the cell address(es) and not the actual number(s) your formula remains correct no matter how many times the numbers may change. When you create a formula, your numbers can be calculated in any fashion you like.

A formula in Excel always starts with the Equal symbol [=], and cell addresses are normally separated by math operators; but other characters can be used to accomplish the desired math operation. Text as well as numbers can be manipulated using formulas.

Simple formula example: = **B2 + C2 + D2**

This formula would add the contents of the three cells together, and appear in the cell where the formula is written. All formulas in Excel are read from Left to Right. The below table lists the math operators that can be used in creating a formula. You may have learned in school the following: “**P**lease **E**xcuse **M**y **D**ear **A**unt **S**ally” This is a way to remember order of Precedence.

Operators	Action	Order of Precedence
()	Parenthesis encases an operation for control	First
^	Exponent	Second
*	Multiplication	Third or
/	Division	Third
+	Addition	Fourth or
-	Subtraction	Fourth

Simple example:

$20 * 4 + 10 = 80 + 10 = 90$	Here we have no parenthesis.
$20 * (4 + 10) = 20 * 14 = 280$	Here we are using parenthesis.

Take a look at this formula to follow the order of operation. If you just type it in to the cell the answer would be:

= 200+100*10% the answer would be 210

We know that 10% of 300 is 30! So what happens here?

Excel used the order of precedents to do the math. Multiplying 100 times 10% which gives the answer of 10. Then Excel took the 10 and added the 200 to complete the formula with an answer of 210. Which we know is incorrect.

The correct way to type the formula would be: =(200+100) * 10%

The answer would then be 30.

Needless to say, putting thing in the right order is very important. Remember the parentheses will be done first when they are included and your math teacher’s rule: “Please Excuse My Dear Aunt Sally”.

Mastering AutoFill

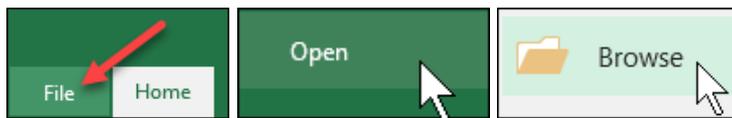
In Microsoft Excel, AutoFill is a feature that allows the user to extend a series of numbers, dates, or even text to the necessary range of cells. This little option gives you plenty of possibilities. *See table below for lots of examples.*

Double Needed	Initial selection	Extended series
Yes	1, 2, 3	4, 5, 6,...
	9:00	10:00, 11:00, 12:00,...
	Mon	Tue, Wed, Thu,...
	Monday	Tuesday, Wednesday, Thursday,...
	Jan	Feb, Mar, Apr,...
Yes	Jan, Apr	Jul, Oct, Jan,...
	Jan-17	Feb-17, Mar-17, ..., Jan-08,...
Yes	15-Jan, 15-Apr	15-Jul, 15-Oct,...
Yes	2007, 2008	2009, 2010, 2011,...
	1-Jan, 1-Mar	1-May, 1-Jul, 1-Sep,...
	Qtr3 (or Q3 or Quarter3)	Qtr4, Qtr1, Qtr2,...
Yes - # increments	text1, textA	text2, textA, text3, textA,...
	1st Period	2nd Period, 3rd Period,...
	Product 1	Product 2, Product 3,...
Yes - # increments	Widget 201, Widget 202	Widget 203, Widget 204, Widget 205,...

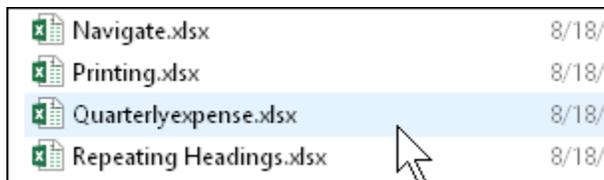
Open workbook to entering a formula

In the next file, you will create a few basic formulas to add your columns.

1. Click the **File** tab, **Open** menu and **Browser** menu.



2. Verify **Classwork** folder is listed in the **Address bar**.
3. Select the **Quarterlyexpense** workbook and click **Open**.



4. Press the [**F12**] key.
The Save As shortcut key.
5. Verify that the **Classwork** folder is selected in the **Address bar**.
6. In the File name text box, type: **Practice Quarterlyexpense**
7. Press [**ENTER**] or click the **Save** button.

Entering a formula

1. Click in cell **B8**.
2. Type: **=B4+B5+B6+B7** and press [**CTRL + ENTER**].
3. Click in cell **C8**.
4. Type: **=C4+C5+C6+C7** and press [**CTRL + ENTER**].

Tip: By pressing [**CTRL + ENTER**] you stay on the cell that you are typing in. It helps you confirm your formula before moving off the cell.

Your screen should look like this:

		C8			fx =C4+C5+C6+C7			
	A	B	C	D	E	F	G	H
1			Eastern Quarterly Report					
2								
3		Jan	Feb	Mar				
4	Widget 20	2310	2430	2520				
5	Widget 20	5230	4870	5440				
6	Widget 20	3450	3670	3980				
7	Widget 20	4390	4010	4580				
8		15380	14980					
9								

More about AutoFill

As you work on a spreadsheet you can speed up the process by using the **AutoFill handle**. You can use this fill handle to fill in a series, repeat values or copy formulas. The fill handle is a small green square in the lower-right corner of the selected cell or range. To select the **AutoFill** handle, you place the mouse over the green box, press the left mouse button down and drag to the new location. You will know your mouse is over the green box when it changes into a black plus.

6	Widget 203	3450	3670	
7	Widget 204	4390	4010	
8	Totals	15380	14980	
9				

1. Using the selected cell C8, place the mouse pointer over the AutoFill handle. When it changes to a **black plus**, (+) press and drag your mouse to cell **D8**.

Widget 204	4390	4010	4580
Totals	15380	14980	

2. **Release** the mouse button.

Your screen should look like this:

4390	4010	4580	
15380	14980	16520	
			

The small icon that you see after you release the mouse is called the AutoFill Options button.

Creating an additional formula

1. Select cell **B17**.
2. Type: `=B13+B14+B15+B16` and press [**CTRL** + **ENTER**].
3. Place the mouse over the **green box**.

Salaries	6000	
Totals	7465	

4. When it changes to a black plus, (+) press and drag your mouse to cell **D17**.
5. **Release** the mouse button.

Your screen should look like this:

11	Expenses			
12		Jan	Feb	Mar
13	Rent	1000	1000	1000
14	Electric	225	225	225
15	Phone	240	263	229
16	Salaries	6000	6000	6000
17	Totals	7465	7488	7454
18				
19	Profit			

*Notice the **AutoFill Option** button that appeared once you released the mouse.*

Depending on what you have used the AutoFill handle for, you will get different menus.

If you click now you will get the menu shown below.

17	Totals	7465	7488	7454	
18					
19	Profit				
20					
21					
22					
23					
24					

Creating a new formula to show profits earned for each month.

1. Click in cell **B19**.
2. Type: **=B8-B17** Notice the color coding that appears on your spreadsheet.
3. Press [**CTRL + ENTER**].

Your screen should look like this:

15	Phone	240	263	229
16	Salaries	6000	6000	6000
17	Totals	7465	7488	7454
18				
19	Profit	7915		
20				

4. Place the mouse pointer over the AutoFill handle, when the **black plus** appears; press down and drag to **D19**.

Edit data using the Formula bar

1. Select cell **C1**.
2. Click after the word “**Eastern**” in the Formula bar.
3. Type: **`s**
4. Click [**SPACEBAR**] and type: **First** click [**SPACEBAR**]
5. Click after the word “**Quarterly**” and [**BACKSPACE**] twice.
6. Press [**CTRL + ENTER**].

Your screen should look like this:

C1		Eastern's First Quarter Report					
	A	B	C	D	E	F	G
1			Eastern's First Quarter Report				
2							
3		Jan	Feb	Mar			

7. Press [**F2**]. *The [F2] key is the keyboard shortcut for edit.*
8. Press [**HOME**]
9. Press [**DELETE**] until you remove all of the word “Eastern’s”.
10. Type: **Regional** and press [**SPACEBAR**]
11. Press [**CTRL + ENTER**].

Your screen should look like this:

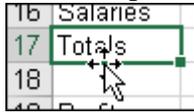
C1		Regional First Quarter Report					
	A	B	C	D	E	F	G
1			Regional First Quarter Report				
2							
3		Jan	Feb	Mar			

12. Click the **Save** button or press [**CTRL + S**] to save.

Moving Cell Content

You can use the mouse to drag and drop the content of a cell to a new location. The edit menu can also be used to copy, cut and paste. In the following step, you will move the word “Sales”.

1. Click on cell **A17**.
2. Place the point of the mouse pointer on the **bottom** border.



3. Press the [**CTRL**] key down and hold with one hand.
4. Press the left mouse button down with the other hand and drag the mouse to cell **E3**.
5. Release mouse and then the [**CTRL**].

Your screen should look like this:

B	C	D	E	F
	Regional First Quarter Report			
Jan	Feb	Mar	Totals	
2310	2430	2520		
5230	4870	5440		

Copying Cell Content

You can copy the contents of any cell using the same technique by adding the [CTRL] key to the process. Press the [CTRL] key down first and then drag to the cell address where a copy is needed. The important part is to release the mouse button before you release the [CTRL]. In the following step you will copy the word “Totals”.

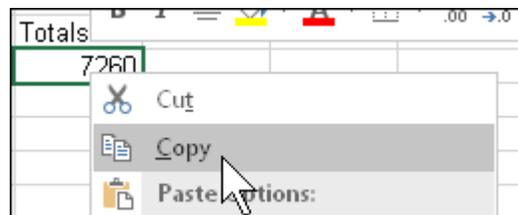
1. Place the point of the mouse pointer on the bottom border of cell **E3**.
2. Hold down the [**CTRL**] key with the other hand and drag the mouse to cell **E12**.
3. Release [**CTRL**] and then the mouse.

Your screen should look like this:

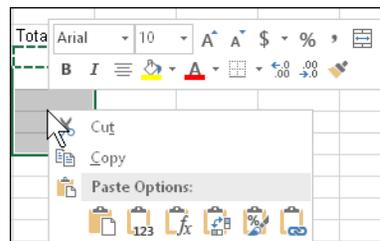
11	Expenses				
12		Jan	Feb	Mar	Totals
13	Rent	1000	1000	1000	
14	Electric	225	225	225	
15	Phone	240	263	229	
16	Salaries	6000	6000	6000	
17	Totals	7465	7488	7454	
18					
19	Profit				

Copying a formula to a new cell

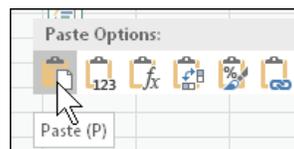
1. Click on cell **E4**.
2. Type: **=B4+C4+D4** and press [**CTRL + ENTER**].
3. Right click **E4** and select **Copy** from the shortcut menu.



4. Select **E5** to **E8** and right click the highlight.



5. Under the Paste Options menu, click the first clipboard to **Paste**.



Your screen should look like this:

3		Jan	Feb	Mar	Totals	
4	Widget 20	2310	2430	2520	7260	
5	Widget 20	5230	4870	5440	15540	
6	Widget 20	3450	3670	3980	11100	
7	Widget 20	4390	4010	4580	12980	
8	Totals	15380	14980	16520	46880	
9						
10						

6. Click the **Save** button or press [**CTRL + S**] to save.

Relative Reference

A relative cell reference is one where the location is relative to the originating cell that contains the formula. When you copy, or drag the AutoFill handle down a column Excel changes the original formula cell addresses by adding a number.

For example:

3	Totals	
4	=B4+C4+D4	← Here in the example to the left the original formula was on row four .
5	=B5+C5+D5	
6	=B6+C6+D6	← When you copy down to the next row Excel increments the number(s) in the cell by one.
7	=B7+C7+D7	
8	=B8+C8+D8	

As you see here $B4+C4+D4$ changed to $B5+C5+D5$ and $B6+C6+D6$ etc. This change in cell addresses is called a Relative Reference.

There will be more on **relative** and **absolute** references in the next section.

1. To see your formulas on a spreadsheet you can click the *Formulas* tab and in the *Formula Auditing* group, click **Show Formulas** button. Click the button again to hide the formulas.
2. Close all open files.



Section 3 – Exercise

Scenario

You have just been given a new workbook file that needs a few formulas added.

What To Do: Add the formulas where needed

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**.
For an example, refer to page 4.
2. Create a formula in **E4** to total **B4** to **D4** so the answer is in **E4**.
For an example, refer to page 36.
3. Add all the numbers together from **B4** to **B7** so the answer is in **B8**.
For an example, refer to page 36.
4. Using the **AutoFill** handle complete the totals from **B8** to **D8**.
For an example, refer to page 37.
5. Copy **A8** to **E3**.
For an example, refer to page 40.
6. Copy the formula in formula in **E4** to cells **E5** to **E8** using the copy – paste method.
For an example, refer to page 41.
7. Save and close all open files.

Section 3 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. What is the first character for all formulas?
2. How do you use the AutoFill handle to copy formulas?
3. There are three ways of editing a formula on a spreadsheet, name two.
4. How do you copy content or a formula to a new cell?

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: Navigate, Save, and Editing.

SECTION 4 ◊ FUNCTIONS

What will I learn in this section?

Using Functions

Relative and Absolute reference

Creating Functions in different ways

FUNCTIONS

Creating and Using Functions

In the next few steps, you learn to use functions. By using functions, you can quickly perform a set of predefined calculations. Many common formulas have been summarized into functions. In a function, you do not specify math operations or order of precedence. You only specify the function command, and then enter the cells referenced in the argument of the function.

A function is a built-in formula; a named and stored procedure that performs a specific operation and returns a value using a few letters to identify a type of function to be performed in Excel. A set of parentheses follows the letters to place your range or item into. An argument consists of numbers, range references, text, logical values, arrays, or error values.

The most common function used in today's spreadsheet is the SUM function. This function is used to add numbers together and has a button on the tool bar to help you create it. When a function is used it normally includes an argument. In the two functions you will use a range of cells for our argument.

A range of cells is from one cell address to another. Example: (B16:D16) This range could be used in a cell, along with the function SUM to calculate a total. Example: =SUM(B16:D16)

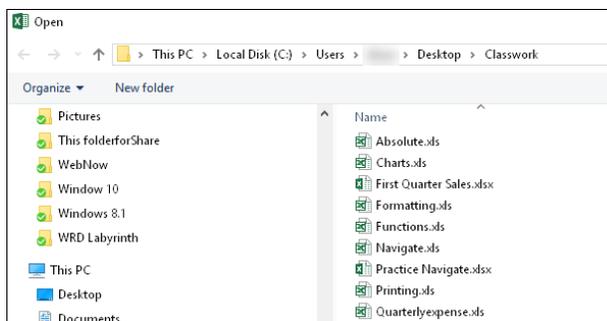
Functions can be upper case or lower case. There are over 500 functions in Excel, in this training book, however, you only create two but this will provide a foundation for you to understand how many of the other functions are utilized.

Creating a Function

1. Click the **File** tab, **Open** menu and **Browser** menu.



2. Verify **Classwork** folder is listed in the **Address bar**.



3. Select the **Functions** workbook and click **Open**.
4. Press the [**F12**] key.
This is the Save As shortcut key.
5. Verify that the **Classwork** folder is selected in the Save in drop down list.
6. In the File name text box, type: **Practice Functions**

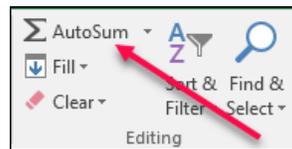
- Press [**ENTER**] or click the **Save** button.

Working with AutoSum

Select the cell or cells where you want the SUM function to appear. When you first click the AutoSum button, a marquee will appear selecting a range. If the selected range is correct, click the AutoSum button again. If the suggested range of cells is incorrect, then use the mouse to select the correct range of cells, and click the AutoSum button.

Use AutoSum to calculate a total

- Select cell **E4**.
- Click the **AutoSum** button on the *Home* tab, in the *Editing* group.
- Click the **AutoSum**.



Tip: By pressing [ALT + =] (equal sign). The AutoSum formula is created. After pressing the above key combination press: [CTRL + ENTER] to complete the AutoSum formula.

Your screen should look like this:

2	Sales				
3		Jan	Feb	Mar	Totals
4	Wiget 201	2310	2430	2520	=SUM(B4:D4)
5	Wiget 202	5230	4870	5440	SUM(number1, [number2], ...)
6	Wiget 203	3450	3670	3980	
7	Wiget 204	4390	4010	4580	

- Click the **AutoSum** a second time.
This completes the formula.

Your screen should look like this:

2	Sales				
3		Jan	Feb	Mar	Totals
4	Wiget 201	2310	2430	2520	7260
5	Wiget 202	5230	4870	5440	
6	Wiget 203	3450	3670	3980	
7	Wiget 204	4390	4010	4580	

- Select cells **E5:E8**, and click the **AutoSum** button.

Your screen should look like this:

2	Sales				
3		Jan	Feb	Mar	Totals
4	Wiget 201	2310	2430	2520	7260
5	Wiget 202	5230	4870	5440	15540
6	Wiget 203	3450	3670	3980	11100
7	Wiget 204	4390	4010	4580	12980
8	Totals	15380	14980	16520	46880
9					

- Select cells **E13:E17**, and click the **AutoSum** button.

Your screen should look like this:

11	Expenses				
12		Jan	Feb	Mar	Totals
13	Rent	1000	1000	1000	3000
14	Electric	225	225	225	675
15	Phone	240	263	229	732
16	Salaries	6000	6000	6000	18000
17	Totals	7465	7488	7454	22407
18					
19	Profit	7915	7492	9066	

- Click the **Save** button or press [**CTRL** + **S**] to save.

Understanding Relative Reference

You have just completed a **relative cell reference** step. A *relative* reference is when you copy a formula from one cell to another. If a cell has a formula of $=B4+C4+D4$ and you use AutoFill or copy the formula down one row, Excel changes the formula to $=B5+C5+D5$. Notice that the only item that changed in the formula was the number. When you copy down over rows Excel will increase the number in your formula by one for each row you pass. This way the formula is always correct for the new row.

3	Totals	
4	$=B4+C4+D4$	← Here in the example to the left the original formula was on row four .
5	$=B5+C5+D5$	
6	$=B6+C6+D6$	← When you copy down to the next row Excel increments the number(s) in the cell by one.
7	$=B7+C7+D7$	
8	$=B8+C8+D8$	

When you copy over columns; copying from left to right over columns, Excel will change the letters. If a cell has a formula of $=SUM(B4:B7)$ and you copy the formula across one column to another, Excel changes the formula to $=SUM(C4:C7)$. Notice that the only item that changed in the formula was the letter. When you copy from left to right to the next column, Excel will increase the letter by one for each column you pass.

Example: **A** becomes **B**, **B** becomes **C**, **C** becomes **D**, etc.

	B	C	D
7	4390	4010	4580
8	$=SUM(B4:B7)$	$=SUM(C4:C7)$	$=SUM(D4:D7)$
9			

Comparing Relative Formulas

- Select cell **E4**.
- Look at the Formula Bar above.

Your screen should look like this:

		E4				fx		=SUM(B4:D4)	
	A	B	C	D	E	F	G		
1			Regional First Quarter Report						
2	Sales								
3		Jan	Feb	Mar	Totals				
4	Wiget 201	2310	2430	2520	7260				
5	Wiget 202	5230	4870	5440	15540				
6	Wiget 203	3450	3670	3980	11100				
7	Wiget 204	4390	4010	4580	12980				
8	Totals	15380	14980	16520	46880				

3. Observe that currently the formula in the Formula Bar is: **=SUM(B4:D4)**.
4. Press the [**down arrow**].
5. Observe that your formula is now: **=SUM(B5:D5)**.
Only the numbers have changed in the formula.
6. Select cell **B8**.

Your screen should look like this:

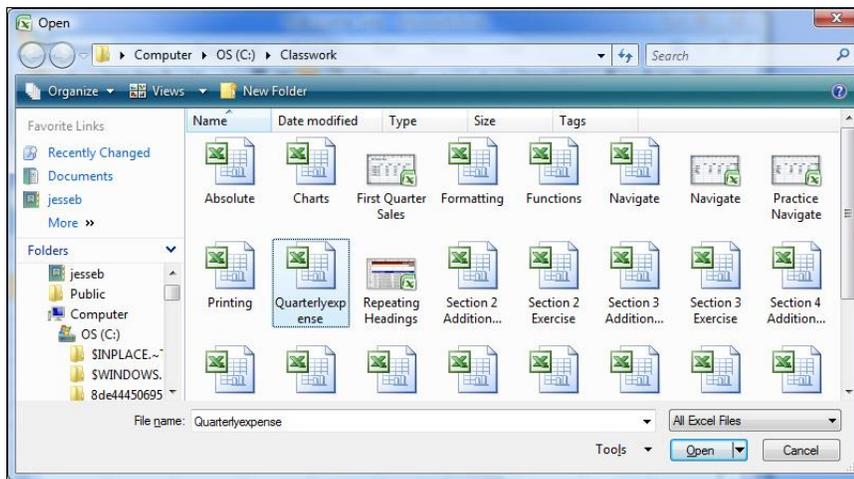
		B8				fx		=B4+B5+B6+B7	
	A	B	C	D	E	F	G		
1			Regional First Quarter Report						
2	Sales								
3		Jan	Feb	Mar	Totals				
4	Wiget 201	2310	2430	2520	7260				
5	Wiget 202	5230	4870	5440	15540				
6	Wiget 203	3450	3670	3980	11100				
7	Wiget 204	4390	4010	4580	12980				
8	Totals	15380	14980	16520	46880				

7. Look at the **Formula Bar** above.
8. Observe that currently the formula in the Formula Bar is **=B4+B5+B6+B7**.
9. Press the [**right arrow**].
10. Observe that your formula is now: **=C4+C5+C6+C7**.

Note: As you can see, this formula changed in relationship to the number of columns passed as you copied it from the prior column. Only the letters changed in this group.

Working with Absolute References

1. Click the **Office Button** and click **Open**.
2. Verify **Classwork** folder is listed in the **Address bar**.



3. Select the **Absolute** workbook and click **Open**.
4. Press the [**F12**] key.
This is the Save As shortcut key.
5. Verify that the **Classwork** folder is selected in the **Address bar**.
6. In the File name text box, type: **Practice Absolute**
7. Press [**ENTER**] or click the **Save** button.

Understanding an Absolute in a Formula

At this point if you select the AutoFill handle and drag down to F7 all of the new formulas will be incorrect (F5:F7). That is because you have not added an *Absolute*. You must tell Excel that H2 is not to change as you copy your formula down. (Remember how the Relative Reference worked in the examples above.)

Absolute is a way to identify to Excel that a cell address must not change as you copy your formula.

By placing a dollar sign next to the letter and number of a cell address, Excel understands not to change that address. Example: \$H\$2

In the formula you just created, H2 needs to be identified in the formula as an absolute reference. This tells Excel not to change the address as you copy the formula to a new location.

1. Select cell **F4**.
2. Type: = E4 * H2
3. Press [**CTRL + ENTER**].
This keyboard shortcut keeps you on the current cell.

Note: This is not an Absolute reference yet.

Your screen should look like this:

	A	B	C	D	E	F	G	H	I	
1	Auto Sales for First Quarter									
2							Percent of Commission:	6%		
3		Salesperson	# Cars Sold		Total Amount	ComPaid				
4		J. Barnes	6		21,000.00	1,260.00				
5		B. Johnson	4		15,000.00					
6		T. Parker	7		70,000.00					
7		P. Thomas	3		23,000.00					
8										
9										

Creating an Absolute in a Formula

1. Moving to the Formula Bar, click between the **H** and **2**.
2. Press the function key [**F4**].

The dollar symbols tell Excel that this cell address is an absolute.

Your screen should look like this:

	A	B	C	D	E	F	G	H	I	
1	Auto Sales for First Quarter									
2							Percent of Commission:	6%		
3		Salesperson	# Cars Sold		Total Amount	ComPaid				
4		J. Barnes	6		21,000.00	=E4*\$H\$2				
5		B. Johnson	4		15,000.00					
6		T. Parker	7		70,000.00					
7		P. Thomas	3		23,000.00					
8										

3. Press [**CTRL + ENTER**].
4. Select the **AutoFill** handle and drag down to cell **F7**.
5. **Release** the mouse.

Your screen should look like this:

	A	B	C	D	E	F	G	H	I	
1	Auto Sales for First Quarter									
2							Percent of Commission:	6%		
3		Salesperson	# Cars Sold		Total Amount	ComPaid				
4		J. Barnes	6		21,000.00	1,260.00				
5		B. Johnson	4		15,000.00	900.00				
6		T. Parker	7		70,000.00	4,200.00				
7		P. Thomas	3		23,000.00	1,380.00				
8										
9										

Creating Functions with different approaches

Now that you have learned to create the AutoSum Function, it is time to look at a few others. You will now look at Average and Max. There are three approaches to creating a formula when using a function. You can just type the formula with the type of function you would like to use (Sum, Average, Max, Min, etc.), or use the built-in tools in Excel to assist you. The other two are using the Insert Function button on the Formulas tab or the Name box menu that appears after you type equal.

Average formula

In the next few steps you will look at creating formulas using all three approaches.

First way is just to type out the formula.

1. Select cell **H20**.
2. Type: `=average(B20:D20)`
3. Press [**CTRL + ENTER**].

Your screen should look like this:

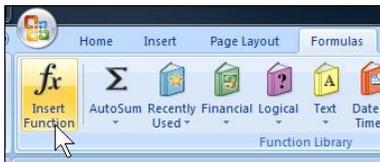
First Quarter Report					
Feb	Mar	Totals			
2430	2520	7260			
4870	5440	15540			
3670	3980	11100			
4010	4580	12980			
14980	16520	46880	Average Sales:	15626.67	

4. Select cell **H31**.

Average Formula

The second way is to use the Insert Function symbol on the Formula Bar. You can also click the Formulas tab and the first button on this ribbon is the Insert Function button.

Regardless of the way you wish to insert a function you should always start with a blank cell.



Tip: By pressing [SHIFT + F3] you can display the **Insert Function** dialog box.

1. Click the **Insert Function** symbol on the Formula Bar.

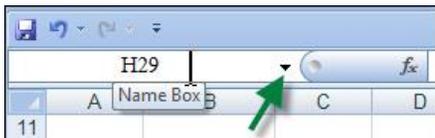
H31										
	A	B	C	E	F	G	H			
22										
23	Expenses									
24	Jan	Feb	Mar	Totals						
25	Rent	1000	1000	1000	3000					
26	Electric	225	225	225	675					
27	Phone	240	263	229	732					
28	Salaries	6000	6000	6000	18000					
29	Totals	7465	7488	7454	22407					
30										
31	Profit	7915	7492	9066			Average Profit:			
32										

Your screen should look like this:

fx		=AVERAGE(B31:D31)				
C	D	E	F	G	H	I
1st Quarter Report						
b	Mar	Totals				
2430	2520	7260				
4870	5440	15540				
3670	3980	11100				
4010	4580	12980				
14980	16520	46880		Average Sales:	15626.67	
b	Mar	Totals				
1000	1000	3000				
225	225	675				
263	229	732				
6000	6000	18000				
7488	7454	22407				
7492	9066			Average Profit:	8157.667	

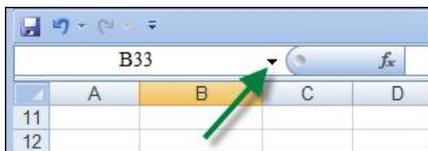
Maximum Formula

The third way is to type the equal symbol and click the down arrow on the right side of the Name box.

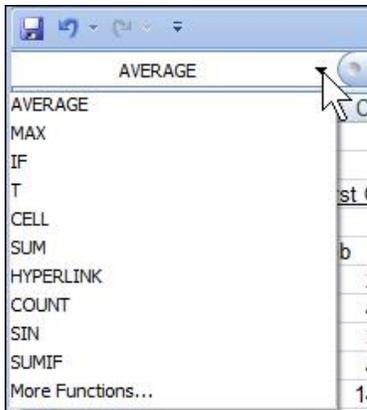


You create a formula using the Maximum function; it returns the largest number in a range. This next formula will be built using equal sign and the name box.

1. Select cell **A33**.
2. Type: **Max** :
3. Press the [**TAB**] key.
4. Type: **=**
5. Click the down arrow to the right of the **Name Box**.



Your screen should look like this:



6. Select **MAX** from the drop down list.
7. Place the mouse pointer over cell **B31**, press and drag to cell **D31**.
Notice the range in the dialog box is B31:D31.
8. Release the mouse and click **OK**.

Your screen should look like this:

B33		fx =MAX(B31:D31)					
	A	B	C	D	E	F	G
23	Expenses						
24		Jan	Feb	Mar	Totals		
25	Rent	1000	1000	1000	3000		
26	Electric	225	225	225	675		
27	Phone	240	263	229	732		
28	Salaries	6000	6000	6000	18000		
29	Totals	7465	7488	7454	22407		
30							
31	Profit	7915	7492	9066			Average
32							
33		9066					
34							

9. **Save** and **close** the file.



Section 4 – Exercise

Scenario

You have been task with calculating the commission for the sales staff and adding some additional functions to the monthly spreadsheet.

What To Do: Create the Absolute formula and add additional functions

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**.
For an example, refer to page 4.
2. Open the workbook file **Section 4 Exercise**.
3. Create an absolute formula to calculate the commission rate for the sales staff.
For an example, refer to page 51.
4. Click in cell **H19** and create an average function for range **B19:D19**.
For an example, refer to page 51.
5. Click in cell **H30** and create an average function for range **B30:D30** try to use a different approach in creating this second function.
For an example, refer to page 51.
6. Save and close all open files.

Section 4 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. In Excel what makes a function?
2. What is the difference between a Relative and an Absolute reference?
3. Can you create a function more than one way?
4. Where is the “Insert Function” symbol? (*It is in more than one place.*)

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: Formula and Function

SECTION 5 ◇ **HANDLING DATA**

What will I learn in this section?

Sorting Data

Sort Options

Remove Duplicates

Filtering Data

AutoSum when Filtering

HANDLING DATA

Working with Sort and Filter features

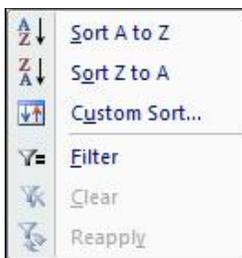
You can do a quick sort by clicking on the sort buttons on your toolbar. To do a basic sort, first click inside the data area / table area and then click the appropriate button. There is a keyboard shortcut for selecting a table. Click in the table and then press [**CTRL + A**]

This key combination will select all of your data that is contiguous and you will be able to see if any data is outside of the highlighted area.

You can sort from A to Z or from Z to A depending on your needs. Excel will sort text, dates or numbers in ascending or descending order.

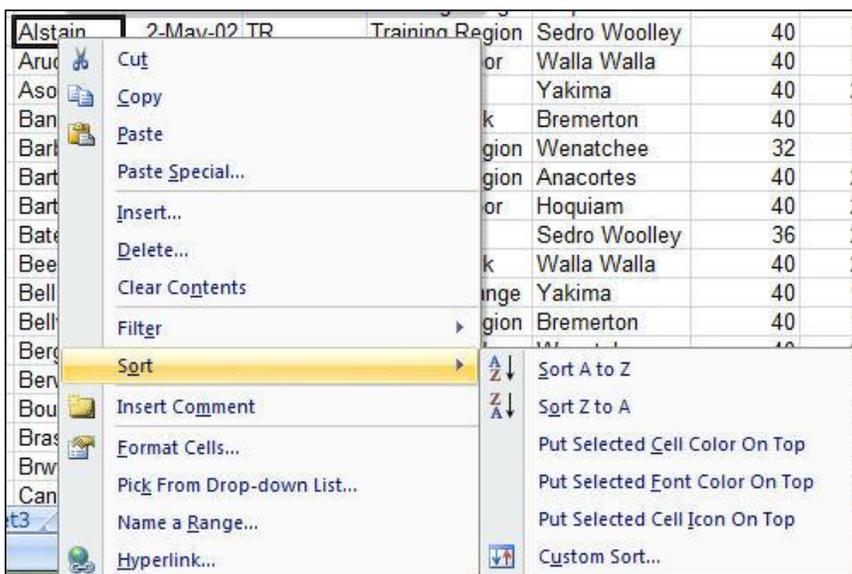


This button is on the Home tab ribbon, on the far right side. When you click this button, you will see the menu for sorting A to Z, or Z to A.



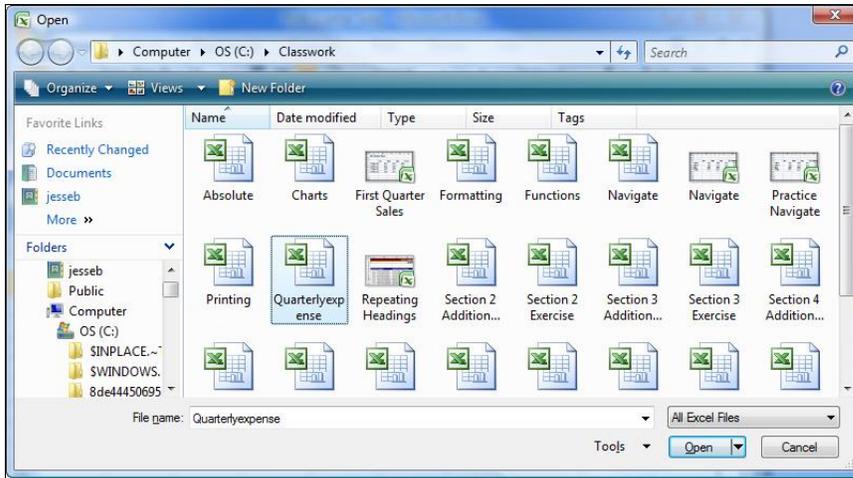
Your first step to sort your data is to make sure that the active cell is in the column you wish to sort. **Do NOT** select a single column when you are about to sort by clicking the column header.

The easiest way to sort is to right-click in the column you wish to sort and select A to Z, or Z to A. The Custom Sort feature is also available when using the right-click shortcut menu.



Working with Sort

1. Click the **Open** button.
2. Verify **Classwork** folder is listed in the **Address bar**.



3. Select the **Sort&Filter2013** workbook and click **Open**.
Scroll down to bottom of list.
4. Press the [**F12**] key.
The Save As shortcut key.
5. Verify that the **Classwork** folder is selected in the **Address bar**.
6. In the File name text box, type: **Practice Sort&Filter2013**
7. Press [**ENTER**] or click the **Save** button.

Your screen should look like this:

	A	B	C	D	E	F	G
1	Employee's Pay Roll List						
2							
3							
4		EmpID	FirstName	LastName	DateHired	Dept Code	DeptName
5		EMP123	Hazel	Abdul	22-Jul-02	TR	Training Region
6		EMP124	Liza	Able	4-Jul-02	BF	Backup Floor
7		EMP125	Robert	Albert	20-Oct-02	NB	North Bank
8		EMP126	Howard	Alexi	23-Apr-02	PP	Pepper Park
9		EMP127	Maxine	Al-Sabah	19-Mar-02	DR	Docking Range

Basic Sort

1. Click in the **Division** column, cell H7 of the “Employee’s Pay Roll List”.

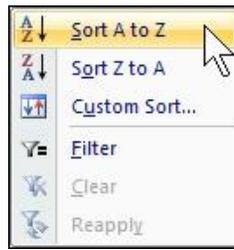
DeptName	Division	Hours
Training Region	Yakima	40
Backup Floor	Bremerton	32
North Bank	Wenatchee	40
Pepper Park	Anacortes	40

Tip: Right-click in any column to sort. Using the shortcut menu is another way to sort.

2. Click the **Sort & Filter** button.



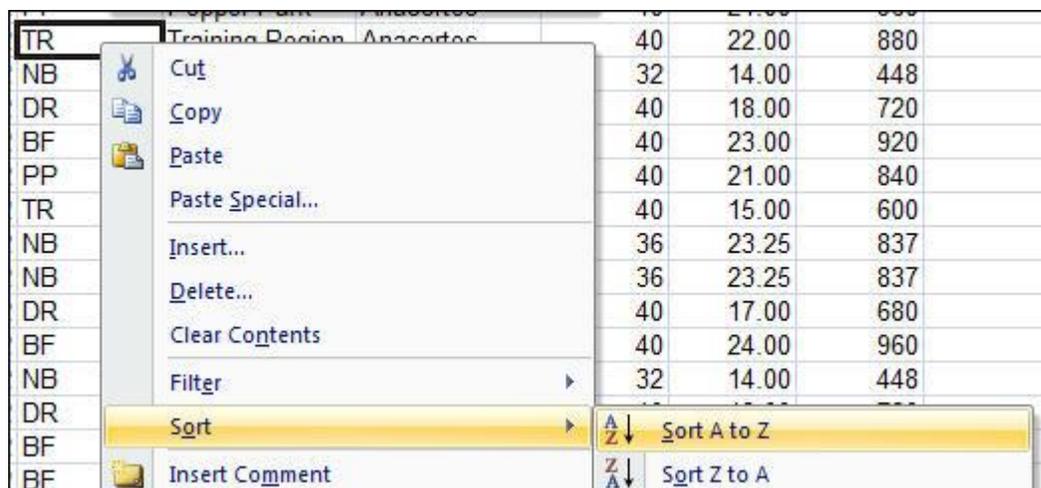
3. Click the **Custom Sort...** button.



4. Click in the **DeptName** column.

DateHired	Dept Code	DeptName
23-Apr-02	PP	Pepper Park
29-May-02	TR	Training Region
4-Nov-02	NB	North Bank
11-May-02	DR	Docking Range

5. Right-click **F6**, move mouse pointer to **Sort** and click **Sort A to Z**.



Your screen should look like this:

EmpID	FirstName	LastName	DateHired	Dept Code	DeptName	Division	Hours	PayRate	GrossPay
EMP154	Donald	Dixon-Wai	2-May-02	BF	Backup Floor	Anacortes	40	23.00	920
EMP189	Rose	Miller	23-Apr-02	BF	Backup Floor	Anacortes	40	24.00	960
EMP208	Donald	Wiggs	2-May-02	BF	Backup Floor	Anacortes	40	23.00	920
EMP124	Liza	Able	4-Jul-02	BF	Backup Floor	Bremerton	32	22.25	712
EMP159	Mary	Hodge	22-Jul-02	BF	Backup Floor	Bremerton	36	15.45	556.2
EMP213	MaryAnne	Fontaine	22-Jul-02	BF	Backup Floor	Bremerton	36	15.45	556.2
EMP134	Ellen	Barton	23-Apr-03	BF	Backup Floor	Hoquiam	40	21.50	860
EMP169	Sandra	Hodge	11-May-02	BF	Backup Floor	Hoquiam	40	22.00	880
EMP149	Sandrae	Corwick	22-Jul-02	BF	Backup Floor	Sedro Woolley	40	14.00	560
EMP184	Evelyn	Mann	9-Aug-02	BF	Backup Floor	Sedro Woolley	40	23.00	920
EMP203	Sandrae	Harley	22-Jul-02	BF	Backup Floor	Sedro Woolley	40	14.00	560
EMP129	Gail	Aruda	11-May-02	BF	Backup Floor	Walla Walla	40	18.50	740
EMP164	Susan	Gonzales	19-Mar-02	BF	Backup Floor	Walla Walla	32	17.00	544
EMP144	Linda	Cash	19-Mar-03	BF	Backup Floor	Yakima	40	24.75	990

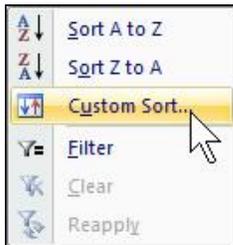
Multiple Sort - sorting more than one column

Next you will use the Sort dialog box to sort Last Name and First Name together. With the sort dialog box you can sort up to sixty-four criteria at one time.

1. Click the **Sort & Filter** button.



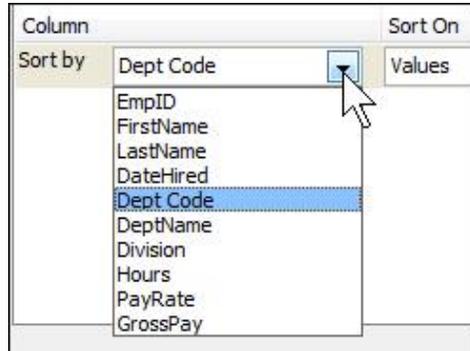
2. Click the **Custom Sort...** menu item.



Your screen should look like this:



3. Click the down arrow for **Sort by** section.



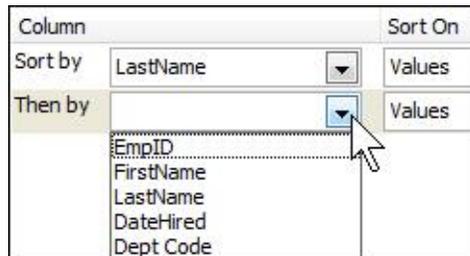
4. Select **LastName** from the list.
5. In the **Order** column, confirm that **A to Z** is selected.



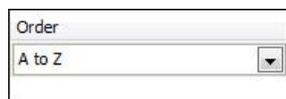
6. Click the **Add Level** button in the Sort dialog box.



7. Click the down arrow for **Sort by** section.



8. Select **FirstName** from the list.
9. In the **Order** column, confirm that **A to Z** is selected.



10. Click the **OK** button.

Your screen should look like this:

	A	B	C	D	E	F	G	H
1	Employee's Pay Roll List							
2								
3								
4		EmpID	FirstName	LastName	DateHired	Dept Code	DeptName	Division
5		EMP123	Hazel	Abdul	22-Jul-02	TR	Training Region	Yakima
6		EMP124	Liza	Able	4-Jul-02	BF	Backup Floor	Bremerton
7		EMP125	Robert	Albert	20-Oct-02	NB	North Bank	Wenatchee
8		EMP126	Howard	Alexi	23-Apr-02	PP	Pepper Park	Anacortes
9		EMP127	Maxine	Al-Sabah	19-Mar-02	DR	Docking Range	Hoquiam
10		EMP128	Joe	Alstain	2-May-02	TR	Training Region	Sedro Woolley
11		EMP129	Gail	Aruda	11-May-02	BF	Backup Floor	Walla Walla
12		EMP130	Alyssa	Asonte	11-May-02	NB	North Bank	Yakima
13		EMP131	Sheryl	Bankler	20-Oct-02	PP	Pepper Park	Bremerton
14		EMP132	Molly	Barber	14-Sep-02	TR	Training Region	Wenatchee
15		EMP133	Kendrick	Barth	29-May-02	TR	Training Region	Anacortes

Notice: Scroll down in the LastName column and find Cash and Chu; notice the first names are sorted correctly also.

EMP209	Ellen	Cartwright
EMP198	Johnny	Cash
EMP144	Linda	Cash
EMP145	Burt	Chu
EMP199	Linda	Chu
EMP146	Matt	Constance

Remove duplicate records

When you have large amounts of data (especially in the corporate world), you want to make sure that you remove any duplicate records in your list. Excel 2013 introduced a new feature that will help you delete/remove any duplicates in your list. This feature is found on the Data tab ribbon.

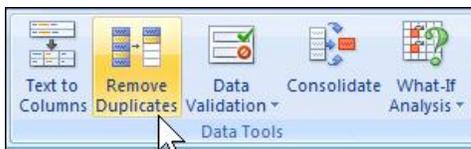
To use this feature, you would first click in the table of your data, click the Data tab and then click the **Remove Duplicates** button. When the Remove Duplicates dialog box appears, you will see two buttons; one for Select All column headers and one for Unselect All column headers. Below the two buttons you will see the name of each column header. In the example in this book you will use the EmpID heading; this is a unique column of items. When selecting a column, remember that unique items like; Employee number, Social Security number, product ID, Product number are good choices. Using this feature will make short work of any list where you may have duplicates.

If you Sort the EmpID column first, you will notice after EMP174 there are a number of duplicates. You will now remove those duplicates.

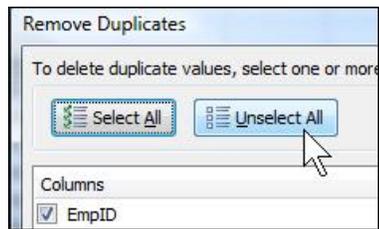
1. Click the **Data** tab.



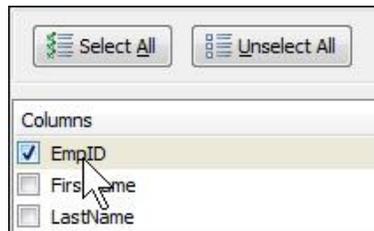
2. Click the **Remove Duplicates** button.



3. Click the **Unselect All** button.
All the items listed in the columns window are unchecked.



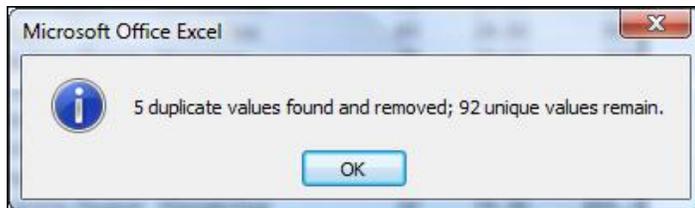
4. Click the **EmpID** item at the top of the Columns list.



5. Click the **OK** button.

Notice: A message will appear indicating the number of duplicate records found and the number of records remaining.

Your screen should look like this:



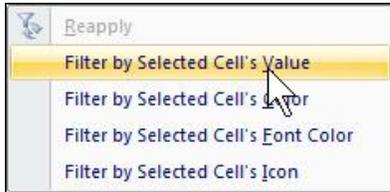
6. Click the **OK** button again.
7. Click the **Save** button.

Basic Filter

Filtering is a way to hide the rows you do not want to see, while seeing the rows that fall within a chosen criteria. In the current data on sheet1, what if you only wanted to see the records of individual employees who work for the Wenatchee division? Using the filter feature you can separate these individuals. The next few steps in this section will show you the power of filtering.

1. Right-click on the word **Wenatchee** in the **Division** column.
2. Move the mouse pointer to the **Filter menu** and then click **Filter by Selected Cell's Value**.

Tip: When you right-click and use the shortcut menu, you can filter by the item you right-clicked on.



Your screen should look like this:

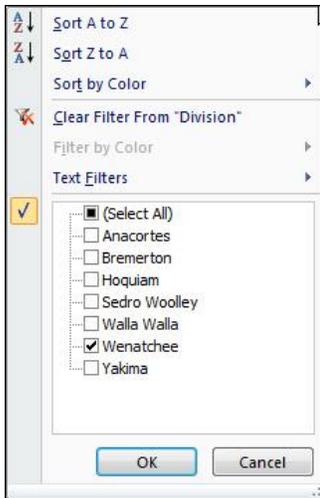
EmpID	FirstNan	LastNa	DateHir	Dept Co	DeptName	Division	Hours	PayRat	GrossP
EMP125	Robert	Albert	20-Oct-02	NB	North Bank	Wenatchee	40	21.00	840
EMP132	Molly	Barber	14-Sep-02	TR	Training Region	Wenatchee	32	15.35	491.2
EMP139	Sam	Berg	9-Aug-02	PP	Pepper Park	Wenatchee	40	23.75	950
EMP146	Matt	Constance	25-Nov-02	PP	Pepper Park	Wenatchee	40	17.00	680
EMP153	Bobby	Davison	23-Apr-02	TR	Training Region	Wenatchee	40	24.45	978
EMP160	Tadeuz	Foss	7-Nov-02	NB	North Bank	Wenatchee	40	22.00	880
EMP167	Cindy	Hardy	2-Oct-02	PP	Pepper Park	Wenatchee	36	14.25	513
EMP174	Pam	Kegler	27-Aug-02	TR	Training Region	Wenatchee	40	18.00	720
EMP181	Alexandra	Levine	2-May-02	PP	Pepper Park	Wenatchee	40	23.35	934
EMP188	Theo	Melendez	11-May-02	TR	Training Region	Wenatchee	32	21.25	680
EMP200	Matt	Cooper	25-Nov-02	PP	Pepper Park	Wenatchee	40	17.00	680
EMP207	Roberta	Davison	23-Apr-02	TR	Training Region	Wenatchee	40	24.45	978
EMP214	Tadeuz	Flores	7-Nov-02	NB	North Bank	Wenatchee	40	22.00	880

Notice that the column headers all have buttons with down arrows. Take a close look at the Division column and you will see that it has a small down arrow and funnel. The funnel icon let you know that your table is filtered by this column.



3. Click the down arrow for **Division**.

Your screen should look like this:



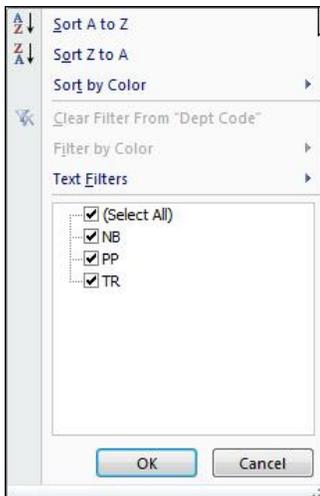
Notice the only item selected is the Wenatchee division.

4. Click the **Cancel** button.

Selecting a Second Filter

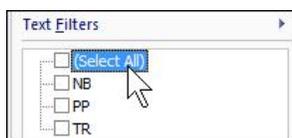
1. Click the down arrow for **Dept Code**.

Your screen should look like this:



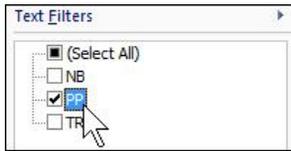
Notice that all the items are selected. To select only one item or more you first must click the Select All item to remove or clear all the checked items.

2. Click the **Select All** selection.



Notice all the items are unchecked. To select only one item or more you click the item you would like to include in the filter.

3. Click the **PP** item.



4. Click the **OK** button.

Your screen should look like this:

DateHire	Dept Code	DeptName	Division	Hours
9-Aug-02	PP	Pepper Park	Wenatchee	40
25-Nov-02	PP	Pepper Park	Wenatchee	40
2-Oct-02	PP	Pepper Park	Wenatchee	36
2-May-02	PP	Pepper Park	Wenatchee	40
25-Nov-02	PP	Pepper Park	Wenatchee	40

Notice the Dept Code and the Division columns, all the items are selected. Wenatchee and Pepper Park are the only records showing within the spreadsheet.

Using AutoSum to total a filtered column

An additional feature that is available when you are in a filtering condition is the AutoSum button. As you saw earlier in the book AutoSum will total numbers for you. However, the AutoSum button works differently when you are in a filter condition. The formula is no longer a SUM function, it becomes a SUBTOTAL function. This function will total only the rows showing and not the ones hidden.

Creating a SUBTOTAL

1. Click in cell **K97**.
2. Click the **AutoSum** button.

Your screen should look like this:

Division	Hours	PayRat	GrossP
Wenatchee	40	23.75	950
Wenatchee	40	17.00	680
Wenatchee	36	14.25	513
Wenatchee	40	23.35	934
Wenatchee	40	17.00	680
			=SUBTOTAL(9,K5:K96)

SUBTOTAL(function_num, ref1, [ref2], ...)

3. Click the **AutoSum** again.

The total GrossPay for the PP department is now calculated.

- Click the down arrow for **Dept Code** column and select **TR**.
- Uncheck **PP** and click the **OK** button.

The total GrossPay for the TR department is now calculated.

Your screen should look like this:

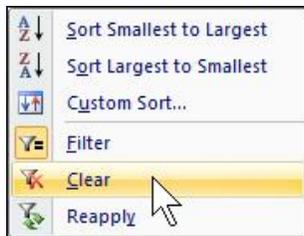
Dept Code	DeptName	Division	Hours	PayRat	GrossP
TR	Training Region	Wenatchee	32	15.35	491.2
TR	Training Region	Wenatchee	40	24.45	978
TR	Training Region	Wenatchee	40	18.00	720
TR	Training Region	Wenatchee	32	21.25	680
TR	Training Region	Wenatchee	40	24.45	978
					3847.2

Restore Data – no filtered items

- Click the **Sort & Filter** button.



- Click the **Clear** menu item.



Notice: No data is filtered but the AutoFilter feature is still active. Your total is still calculating correctly. If you scroll down to row 97 you will see the total for all records.

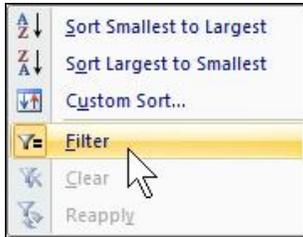
Turning AutoFilter off

- Click the **Sort & Filter** button.



Tip: To un-filter a single column, click the filter button of the filtered column and click the **Select All** item.

2. Click the **Filter** menu item.



Your screen should look like this:

	A	B	C	D	E	F	G	H	I	J	K
1	Employee's Pay Roll List										
2											
3											
4		EmpID	FirstName	LastName	DateHired	Dept Code	DeptName	Division	Hours	PayRate	GrossPay
5		EMP123	Hazel	Abdul	22-Jul-02	TR	Training Region	Yakima	40	15.00	600
6		EMP124	Liza	Able	4-Jul-02	BF	Backup Floor	Bremerton	32	22.25	712
7		EMP125	Robert	Albert	20-Oct-02	NB	North Bank	Wenatchee	40	21.00	840
8		EMP126	Howard	Alexi	23-Apr-02	PP	Pepper Park	Anacortes	40	24.00	960
9		EMP127	Maxine	Al-Sabah	19-Mar-02	DR	Docking Range	Hoquiam	36	23.00	828
10		EMP128	Joe	Alstain	2-May-02	TR	Training Region	Sedro Woolley	40	17.00	680

Notice there are no filter buttons across the top of your columns. The AutoFilter feature has been turned off.

The formula you created on row 97 remains and are still calculating correctly. If you scroll down to row 97 you will see the total for all records.

3. **Save** and **close** the file.



Section 5 – Exercise

Scenario

You need to work with a payroll list in Excel for your company breaking down the list by department so you can get a total for each department.

What To Do: Sort, then filter by department, then create a subtotal for each department

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**. Open the file **Section 5 Exercise**.
For an example, refer to page 4.
2. Sort by **Division** using the **A to Z** button on the **Standard toolbar**.
For an example, refer to page 61.
3. Using the multiple sort feature, sort **Division** and **DeptName** in ascending order.
For an example, refer to page 62.
4. Turn on the **AutoFilter** feature and select **Anacortes** to show only **Anacortes**.
For an example, refer to page 64.
5. Total the Gross Pay column using the AutoSum button.
For an example, refer to page 67.
6. Turn off the AutoFilter feature.
For an example, refer to page 69.
7. Save and close all open files.

Section 5 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. What steps do you take to do a basic sort?
2. Can you sort more than one column at a time?
3. How do you sort more than one column at a time?
4. How do you turn on the AutoFilter feature?
5. How do you turn off the AutoFilter feature?

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: Sort, Filter, and AutoFilter.

SECTION 6 ◊ FORMATTING FOR REPORTS

What will I learn in this section?

Cells Text and Numbers

Copying Format with Format Painter

Worksheet Formatting

FORMATTING FOR REPORTS

Formatting a Worksheet

As you open a workbook there may be formatting already applied or you may need to dress up your worksheets so your print outs will be more appealing. Consistency and readability are important points to remember. You will apply formatting in this section and as you are doing so, you will become familiar with Excel’s formatting features.

Working with Text Formatting

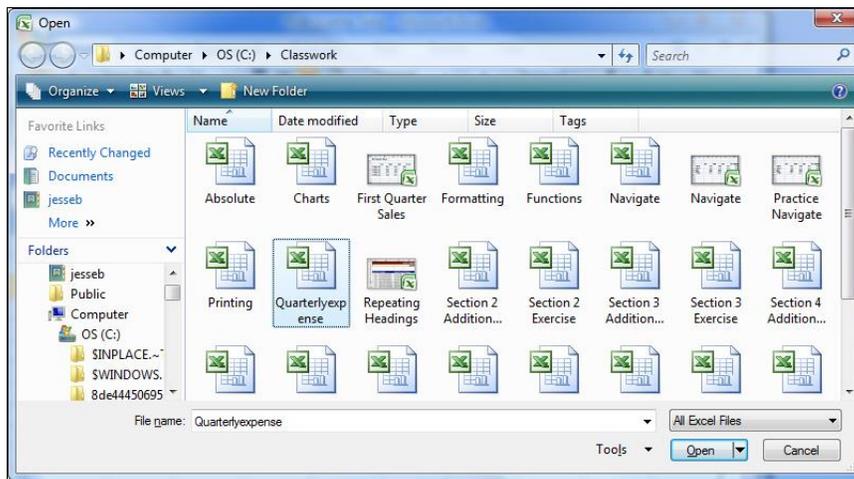
You will apply fonts, font size, font attributes and alignment of cells. The following are the buttons you will use.



Buttons	Description																												
	<p>Font style drop down selection list. From this drop down list, you pick the font style that you would like your text or numbers to be.</p> <p>Font size drop down selection list. From this drop down list, you pick the size you would like your text or numbers to be. You can also type in the number.</p> <p>The two capital A’s at the end of this bar can be clicked to make your selected text larger or smaller.</p>																												
	<p>The first three buttons are Bold, Italic and Underline. You click on the appropriate button for the effect you need. The middle button is the Border button. (See next row.)</p> <p>The last two buttons give you color. The little bucket is for background color of your cell. The A is for coloring your text. In both cases the cell or text must be selected.</p>																												
<p style="text-align: center;">Border Menu</p>	<table border="1"> <thead> <tr> <th>Borders</th> <th>Draw Borders</th> </tr> </thead> <tbody> <tr> <td> Bottom Border</td> <td> Draw Border</td> </tr> <tr> <td> Top Border</td> <td> Draw Border Grid</td> </tr> <tr> <td> Left Border</td> <td> Erase Border</td> </tr> <tr> <td> Right Border</td> <td> Line Color</td> </tr> <tr> <td> No Border</td> <td> Line Style</td> </tr> <tr> <td> All Borders</td> <td> More Borders...</td> </tr> <tr> <td> Outside Borders</td> <td></td> </tr> <tr> <td> Thick Box Border</td> <td></td> </tr> <tr> <td> Bottom Double Border</td> <td></td> </tr> <tr> <td> Thick Bottom Border</td> <td></td> </tr> <tr> <td> Top and Bottom Border</td> <td></td> </tr> <tr> <td> Top and Thick Bottom Border</td> <td></td> </tr> <tr> <td> Top and Double Bottom Border</td> <td></td> </tr> </tbody> </table>	Borders	Draw Borders	Bottom Border	Draw Border	Top Border	Draw Border Grid	Left Border	Erase Border	Right Border	Line Color	No Border	Line Style	All Borders	More Borders...	Outside Borders		Thick Box Border		Bottom Double Border		Thick Bottom Border		Top and Bottom Border		Top and Thick Bottom Border		Top and Double Bottom Border	
Borders	Draw Borders																												
Bottom Border	Draw Border																												
Top Border	Draw Border Grid																												
Left Border	Erase Border																												
Right Border	Line Color																												
No Border	Line Style																												
All Borders	More Borders...																												
Outside Borders																													
Thick Box Border																													
Bottom Double Border																													
Thick Bottom Border																													
Top and Bottom Border																													
Top and Thick Bottom Border																													
Top and Double Bottom Border																													
	<p>There are six basic alignment buttons in the left half of this group. The three top left buttons allow for aligning the cell content vertical. The bottom left three alignment buttons allow for aligning the cell content horizontally; left, right and center buttons.</p> <p>On the right side of this group are two additional commands. Wrap Text and the Merge & Center buttons.</p>																												

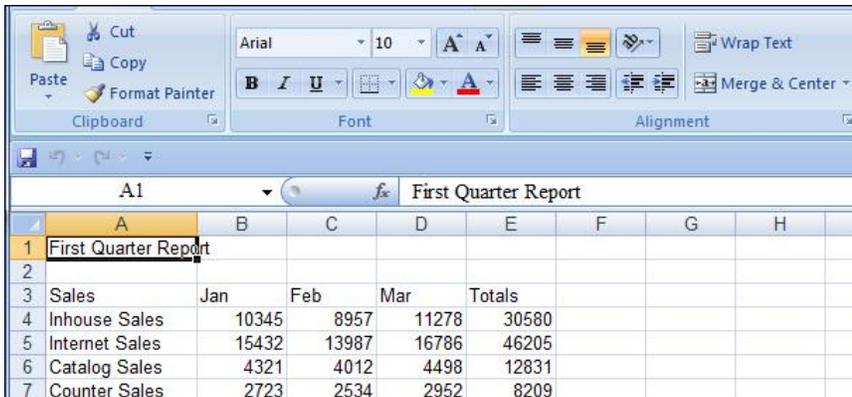
Text Formatting

1. Click the **Open** button.
2. Verify **Classwork** folder is listed in the **Address bar**.



3. Select the **Formatting** workbook and click **Open**.
4. Press the [**F12**] key.
The Save As shortcut key.
5. Verify that the **Classwork** folder is selected in the **Address bar**.
6. In the File name text box, type: **Practice Formatting**.
7. Press [**ENTER**] or click the **Save** button.

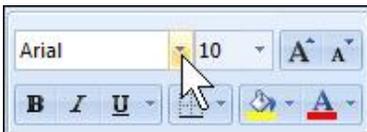
Your screen should look like this:



	Jan	Feb	Mar	Totals
Inhouse Sales	10345	8957	11278	30580
Internet Sales	15432	13987	16786	46205
Catalog Sales	4321	4012	4498	12831
Counter Sales	2723	2534	2952	8209

Working with Font and Font Size

1. Select cells **A3:A9**, press [**CTRL**], and select cells **A12:A18**.
2. Click the **Font** down arrow.



3. Scroll down and select **Times New Roman**.
4. Click the **Font Size** down arrow.



5. Click the number **14**.
6. Select **A1**.
7. Click the **Font** down arrow.
8. Scroll down and select **Time New Roman**.
9. Click the **Font Size** down arrow.
10. Click the number **16**.

Tip: To reach a part of the font list you can just type the letter of the section you wish to reach. For Times New Roman, you just type the letter T.

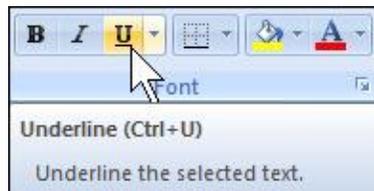
Working with Font Attributes

1. Select cells **B3:E3**.

- Click the **Bold** button.



- Click the **Underline** button.



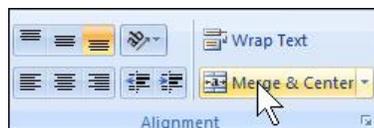
- Click the **Underline** button again to remove the attribute.

Working with Alignment

- Click the **Align Right** button.



- Select cell **A1:E1** and click the **Merge and Center** button.
This will align your heading based on the selected area.



Your screen should look like this:

	A1	First Quarter Report				
	A	B	C	D	E	F
1	First Quarter Report					
2						
3	Sales	Jan	Feb	Mar	Totals	
4	Inhouse Sales	10345	8957	11278	30580	
5	Internet Sales	15432	13987	16786	46205	
6	Catalog Sales	4321	4012	4498	12831	

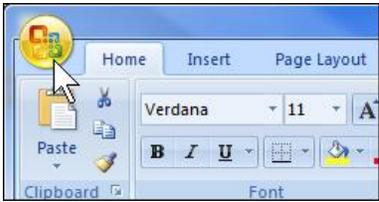
- Select cell **G2** and type: **Report Date**

4. Press [**ENTER**].
5. Press [**CTRL + ;**] to insert today's date.
Using the semi-colon with control key inserts the current computer date.
6. Press [**CTRL + ENTER**]

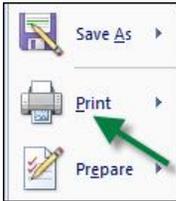
Tip: [CTRL + ;] (*semi-colon*) inserts the current computer date. The [CTRL + **SHIFT** + :] (*colon*) inserts the current computer time.
The [CTRL + '] (*apostrophe*) copies the contents from the cell above.

Working with Print Preview

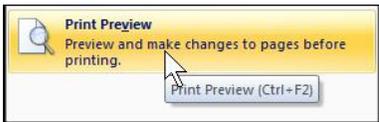
1. Click the **Office** button .



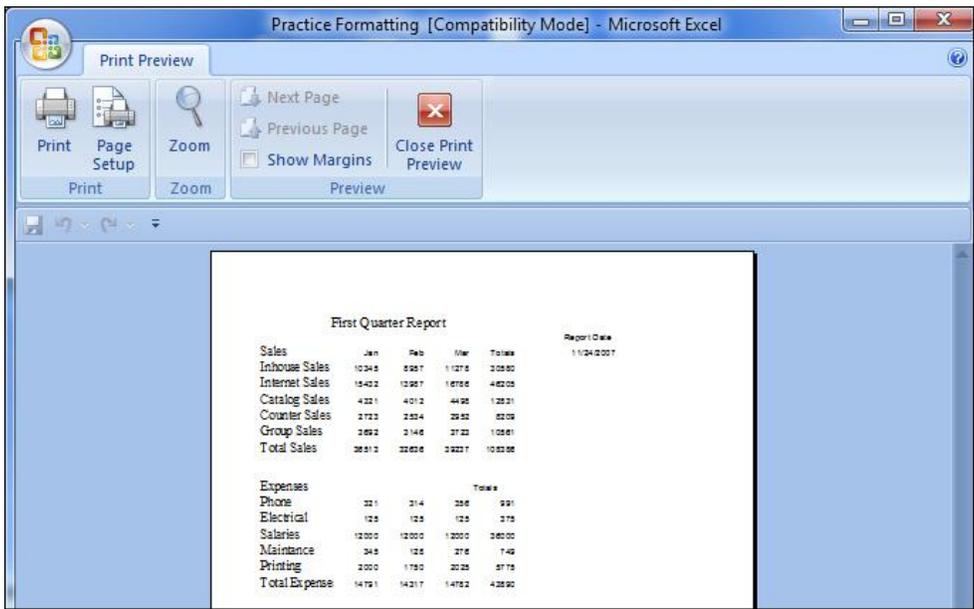
2. Move mouse pointer to **Print** menu item.



3. Click the **Print Preview** menu item.

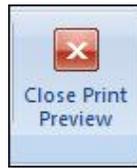


Your screen should look like this:



Notice your report is beginning to take shape.

- Click the **Close** button on the **Print Preview** toolbar.



Tip: Notice the dotted line on the right side of your spreadsheet after you close the Print Preview window. The dotted line indicates the right edge of the print area. If you scroll down you will see the bottom edge of the print area. These are the borders of page 1. Being aware of these dotted lines, will help you stay aware of where information will print on a page.

- Click the **Save** button or press [**CTRL + S**] to save.

Format as Table

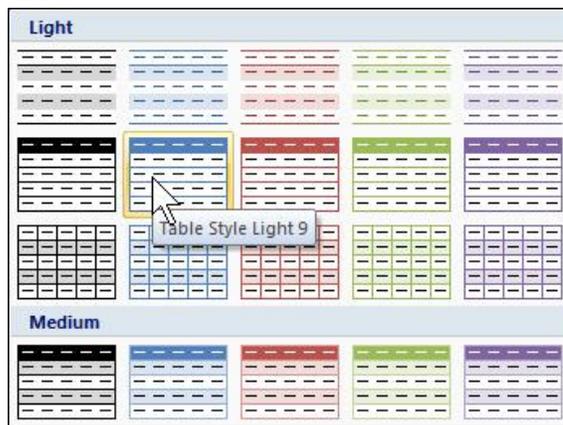
The Format as Table feature is a fast way to dress up your spreadsheet when time might be short. The Format as Table feature applies, color, alignment and attributes to the selected area based on the pattern you select from the preview list. You can click on the New Table Style at the bottom of the Format as Table dialog box and add or remove some parts of the attributes.

Working with Format as Table

- Select cells **A3:E9**.
- Click the **Format as Table** button.



Your screen should look like this:



- Click on **Table Style Light 9**, second row, second column of the Light section.
- Click the **Data** tab.

5. Click the **Filter** button.
This will turn off the Filter feature on your table.



Your screen should look like this:

	A	B	C	D	E	F
1	First Quarter Report					
2						
3	Sales	Jan	Feb	Mar	Totals	
4	Inhouse Sales	10345	8957	11278	30580	
5	Internet Sales	15432	13987	16786	46205	
6	Catalog Sales	4321	4012	4498	12831	
7	Counter Sales	2723	2534	2952	8209	
8	Group Sales	3692	3146	3723	10561	
9	Total Sales	36513	32636	39237	108386	
10						
11						

Format Painter

The Format Painter is a great feature to save time and stay consistent with your formatting throughout your report. The Format Painter copies attributes from one area and allows you to apply them to another.



If you have cell(s) already formatted and you would like other cell(s) to have this format, you select the formatted cell(s), click the Format Painter button and then select the new cell(s) where you would like the same formatting to be applied.

Working with Format Painter

1. Select cells **A3:E9**.
2. Click the **Format Painter** button.



Note: The area that you are applying the copied attributes, must be the same size when clicking only a single cell to apply.
Note: If you double click the Format Painter button, this will lock it in the on position. To turn off the Format Painter click the button again or press the **[ESC]** key.

3. Click cell **A12**.

Your screen should look like this:

	A	B	C	D	E	F	G
1	First Quarter Report						
2							Report Date
3	Sales	Jan	Feb	Mar	Totals		11/24/2007
4	Inhouse Sales	10345	8957	11278	30580		
5	Internet Sales	15432	13987	16786	46205		
6	Catalog Sales	4321	4012	4498	12831		
7	Counter Sales	2723	2534	2952	8209		
8	Group Sales	3692	3146	3723	10561		
9	Total Sales	36513	32636	39237	108386		
10							
11							
12	Expenses				Totals		
13	Phone	321	314	356	991		
14	Electrical	125	125	125	375		
15	Salaries	12000	12000	12000	36000		
16	Maintance	345	128	276	749		
17	Printing	2000	1750	2025	5775		
18	Total Expenses	14791	14317	14782	43890		
19							
20							

4. Click on cell **E3**.
5. Click the **Format Painter** button.



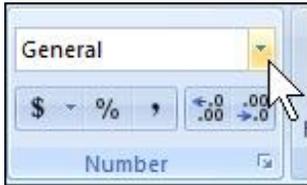
6. Click on cell **H2**.
Notice the blue background and the white text color.

Your screen should look like this:

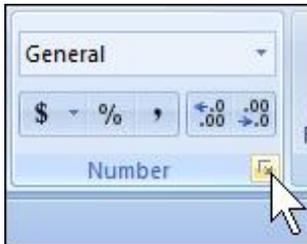
	A	B	C	D	E	F	G	H
1	First Quarter Report							
2							Report Date	
3	Sales	Jan	Feb	Mar	Totals		11/24/2007	
4	Inhouse Sales	10345	8957	11278	30580			
5	Internet Sales	15432	13987	16786	46205			
6	Catalog Sales	4321	4012	4498	12831			
7	Counter Sales	2723	2534	2952	8209			
8	Group Sales	3692	3146	3723	10561			
9	Total Sales	36513	32636	39237	108386			

Formatting Numbers

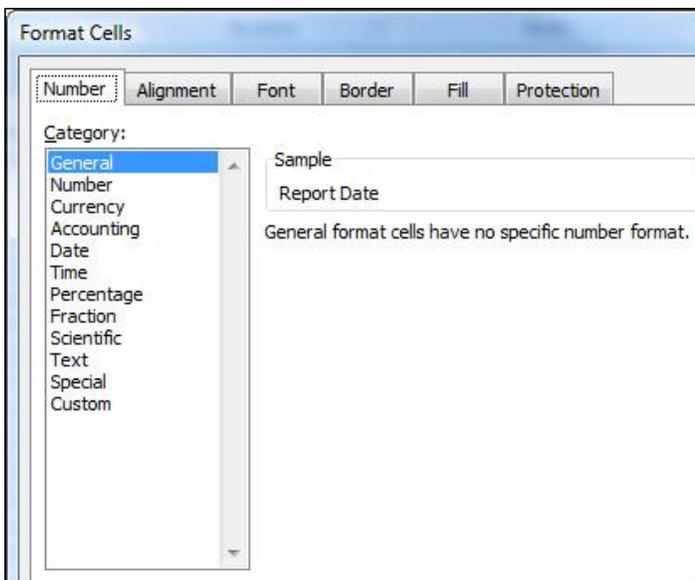
In Excel, you can apply many number formats to your numbers. The number section on the Home tab ribbon gives you a quick and easy way to select these formats as needed.



There are 12 number categories to select from. When you click on the category down arrow you will see 11 of the categories. If you click the Number launcher you will open the Format Cells dialog box.



The Format Cells dialog box gives options for Number Categories as well as for alignment, font, border, and fill formatting.

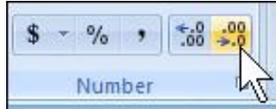


In the next few steps you will do some formatting of your cells.

1. Select cells **B9:E9**.
2. Click the **Currency Style** button.



3. Click the **Decrease Decimal** button twice.



4. Click the **Format Painter** button.



5. Select cells **B18:E18**.

Your screen should look like this:

	A	B	C	D	E	F	G	
1	First Quarter Report							
2							Report Date	
3	Sales	Jan	Feb	Mar	Totals		11/24/2007	
4	Inhouse Sales	10345	8957	11278	30580			
5	Internet Sales	15432	13987	16786	46205			
6	Catalog Sales	4321	4012	4498	12831			
7	Counter Sales	2723	2534	2952	8209			
8	Group Sales	3692	3146	3723	10561			
9	Total Sales	\$ 36,513	\$ 32,636	\$ 39,237	\$ 108,386			
10								
11								
12	Expenses				Totals			
13	Phone	321	314	356	991			
14	Electrical	125	125	125	375			
15	Salaries	12000	12000	12000	36000			
16	Maintance	345	128	276	749			
17	Printing	2000	1750	2025	5775			
18	Total Expenses	\$ 14,791	\$ 14,317	\$ 14,782	\$ 43,890			
19								

6. Click the **Save** button.

Worksheets Formatting

When planning ahead you may like to format more than one sheet at a time. In Excel this feature is called grouping. You can select more than one sheet by clicking on the first sheet in the group and then hold down the [SHIFT] key to select all sheets in between. If all the sheets are not together in a group you can use the [CTRL] key to pick and choose the sheets to include.

Formatting a group of sheets

1. Click the [**CTRL + N**] keyboard shortcut.

This gives you a new workbook.

Notice that Sheet1 has a white background.

2. Click on the **Insert Worksheet** tab.

A new worksheet is added. The new sheet name is Sheet2. A number will be added to each sheet as new sheets are inserted in your workbook.



3. Click on the **Insert Worksheet** tab again.
You should now have 3 blank sheets.
4. Click on the **Insert Worksheet** tab again.
You should now have 4 blank sheets.
5. Hold down the **Shift** key and click on **Sheet1**.
This will select all three sheets. This is called grouping sheets.
6. Click on cell **A4** and type: **Sales**
7. Press [**ENTER**].
8. Type: **Expenses** and press [**ENTER**].
9. Type: **Profit** and press [**ENTER**].
10. Click on cell **B6** and type: **=B4-B5**
11. Right-click **Sheet4** tab.
12. Select **Ungroup Sheets** from the shortcut menu.

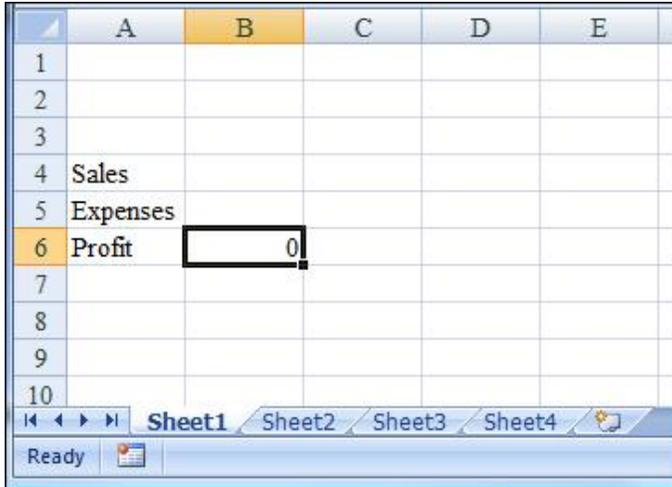


13. Click on **each sheet tab** to check for text and formulas on each sheet.

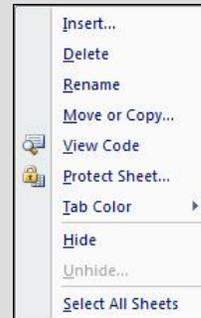
Notice that all the sheets have the same text and formulas on each.

14. Click on **Sheet1**.

Your screen should look like this:



Tip: You can right-click a sheet tab to name it also. When you right-click a sheet tab notice that you have a number of choices.

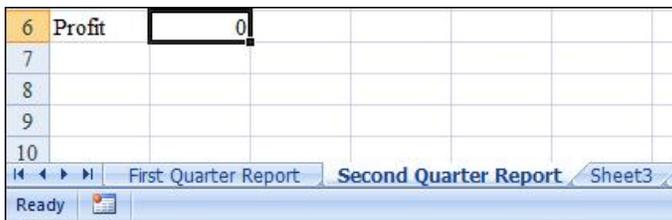


The Tab Color menu item is great for giving each tab a different color.

Naming a Sheet

1. Double click on **Sheet1** tab.
 2. Type: **First Quarter Report**
 3. Press the **[ENTER]** key to accept your new name.
 4. Double click on **Sheet2** tab.
 5. Type: **Second Quarter Report**.
- If you like you can name the last two sheets, Third and Fourth Quarter Reports.

Your screen should look like this:



Close the workbook and exit Excel

1. Click on **File | Close** from the Office button to close any open files.
If you are prompted to save the workbook, click No.
2. Click on **File | Exit** from the Office button.



Section 6 – Exercise

Scenario

Department presentation is due and you have been tasked with formatting.

What to Do: Format worksheet to enhance the printout.

A place to start

1. Use the **Start** button on the taskbar to open **Microsoft Excel**.
For an example, refer to page 4.
2. Open the workbook file **Section 6 Exercise**.
3. View your workbook and select **A3 through A9**.
4. Change the font to **Times New Roman** and font size to **12**.
For an example, refer to page 76.
5. Apply **Bold** to the selected group, **A3:A9**.
For an example, refer to page 76.
6. With **A3:A9** still selected, click the **Format Painter** button and select **A12:A18**.
For an example, refer to page 80.
7. Format **B9:F9** as **Currency**.
For an example, refer to page 82.
8. Save the file as **Practice Section 6 Exercise**.
9. Save and close all open files.

Section 6 – Review

You must be able to answer the following questions on your own. As you review the questions below, write in your answer below each one.

1. What is the name of the tab and group you use to format your worksheet?
(*Hint: It has the Bold, Italic & Underline in the group.*)
2. In what group is the button that allows you to merge cells and center your heading?
3. What is the name of the button described in question 2?
4. How do you connect two or more worksheets together for formatting?

Additional Study

Use the Microsoft Excel Help features to look up the key words from this section for additional information. Example: AutoFormat, Font, and Format Painter

Glossary of Terms

AutoFill Options	This option allows you to select a way to complete your fill. An example would be Fill Formatting Only, Fill Without Formatting and/or copy cells.
Drag-and-drop	Using the mouse to move or copy content to a new location. Place the mouse pointer on the border of the active cell, press and hold the left mouse button down and drag the mouse to the new cell address.
Drag-and-drop (<i>Object</i>)	A technique identified when using the mouse to drag an object on the screen from one location to another.
Font	The look of a letter on the screen or print. A font style would be named Arial, Times New Roman or Courier New, for example. When using a font style, you can also make it larger or smaller as you apply; bold, italic or underline.
Footer	The footer section of a document is normally the last one inch at the bottom of a page.
Header	The header section of a document is normally the first one inch at the top of a page.
Sheet	A single page in a workbook to store numbers, formulas, list and charts.
Table	A collection of data organized into rows and columns.
Workbook	An electronic file that stores multiple worksheets, charts and chart sheets.
Worksheet	An individual sheet used to store data such as text, numbers, and formulas in a workbook. A worksheet is organized into rows and columns.