


EXCEL BASICS

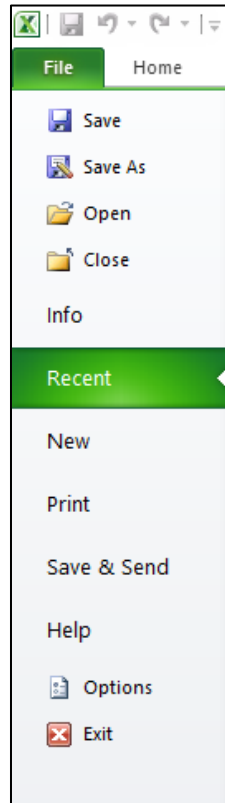
Microsoft Excel I

OFFICE TAB	1
RIBBONS & GROUPS.....	2
OTHER SCREEN PARTS.....	4
APPLICATION SPECIFICATIONS	5
THE BASICS.....	6
The Mouse	6
What Are Worksheets?	6
What is a Workbook?	6
THE FORMULA BAR.....	7
name box.....	7
functions box.....	7
MOVING AROUND THE SPREADSHEET.....	8
The Name Box	8
The Scroll Bar or Scroll Wheel (Mouse)	8
The Keyboard	8
moving to different sheets.....	8
KEYSTROKE SHORTCUTS	9
DIFFERENT INFORMATION THAT CAN BE ENTERED IN EXCEL.....	10
Text	10
Date.....	11
Time	11
NUMBERS.....	12
FORMATTING A CELL AS YOU TYPE	13
EDITING THE CONTENTS OF A CELL	14
While Entering The Data	14
After Entering the Data.....	14
STATUS MODE.....	15
SELECTING CELLS.....	16
Selecting One Cell	16
Selecting a Group of Adjacent Cells.....	16
Selecting a Group of Non-Adjacent Cells	17

Selecting The Entire Spreadsheet	17
Selecting A Row	17
Selecting a Column.....	17
THE AUTO CALCULATE FEATURE	18
SIMPLE FORMULAS	19
Rules For Creating Formulas	19
OPERATORS IN FORMULAS	20
Order of Operation.....	20
USING EXCEL FUNCTIONS.....	21
Rules for Creating Formulas With Functions	21
Referencing Adjacent Cells In A Formula	22
Referencing Non-Adjacent Cells In A Formula	23
MOST COMMONLY USED FUNCTIONS	24
AUTOSUM 	25
DATA MENU FEATURES.....	26
Setting Up The Spreadsheet.....	26
Inputting Data Using The Data Form	26
Finding Data Using The Data Form	27
Auto Filter.....	28

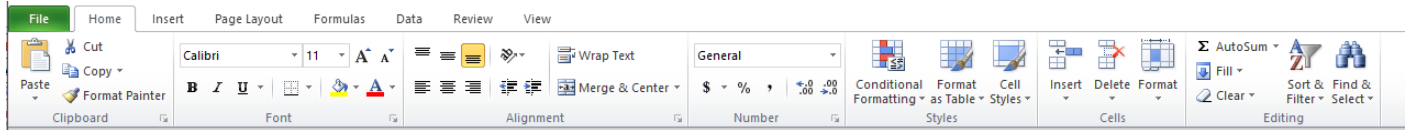
OFFICE TAB

The features to manage your Excel files are found on the Office Tab:



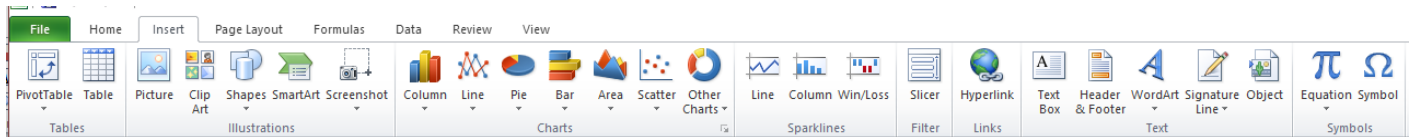
RIBBONS & GROUPS

HOME RIBBON



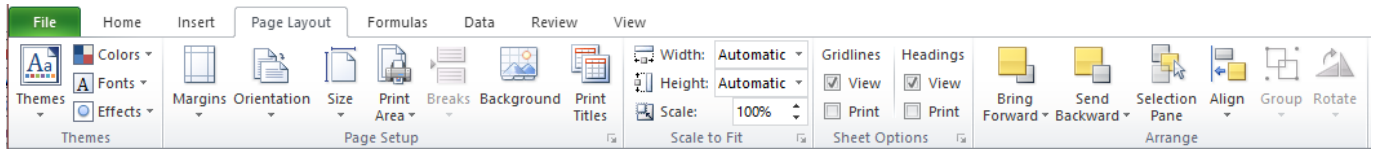
GROUPS: Clipboard, Font, Alignment, Number, Styles, Cells, Editing

INSERT RIBBON



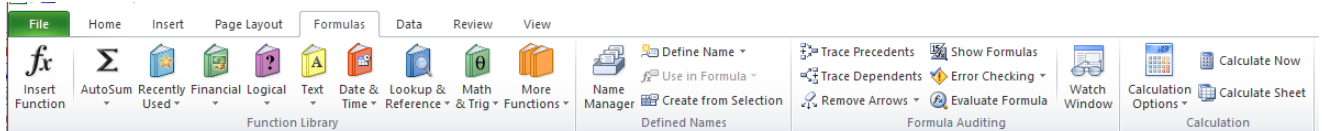
GROUPS: Tables, Illustrations, Charts, Sparklines, Filter, Links, Text, Symbols

PAGE LAYOUT RIBBON



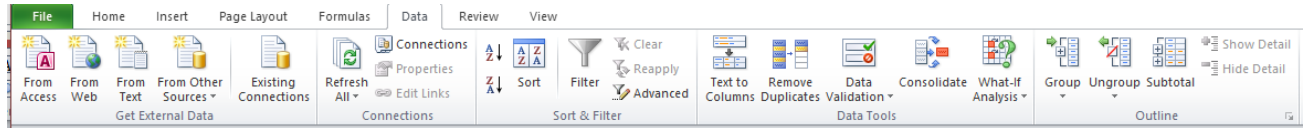
GROUPS: Themes, Page Setup, Scale to Fit, Sheet Options, Arrange

FORMULAS RIBBON



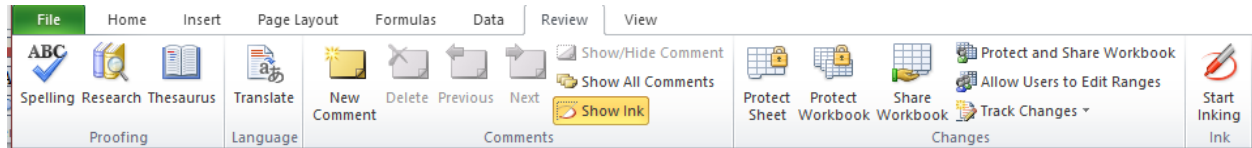
GROUPS: Function Library, Defined Names, Formula Auditing, Calculation

DATA RIBBON



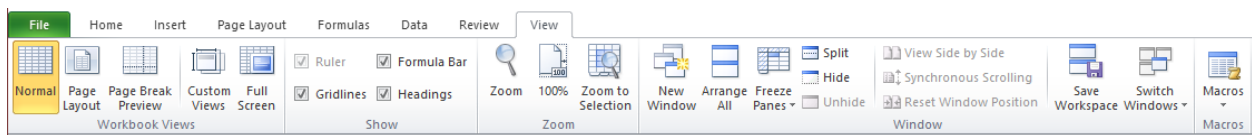
GROUPS: Get External Data, Connections, Sort & Filter, Data Tools, Outline

REVIEW RIBBON



GROUPS: Proofing, Language, Comments, Changes, Ink

VIEW RIBBON



GROUPS: Workbook Views, Show, Zoom, Window, Macros

OTHER SCREEN PARTS



<i>Name Box</i>	Gives you the cell address of the active cell. Can also be used to move quickly to a range or to a specific cell address. It also can be used to name ranges in the workbook.
<i>Formula Bar</i>	Displays the text or formulas that are in the active cell. Can also be used to edit the contents of a cell.



<i>Status Bar</i>	Lets you know the status of your worksheet – Ready, Edit or Enter Mode. Also contains Auto Calculate Features (Average, Count, Sum) that can be performed without entering a formula in a cell.
<i>Sheet Tabs</i>	Are just like other sheets of paper that you can use in your workbook. By default every workbook starts with 3 sheets.

APPLICATION SPECIFICATIONS




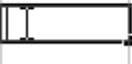
The following are the maximums that Excel allows:

Feature	Maximum Limit
Open Workbooks	Limited by available memory and system resources
Worksheet Size	1,048,576 rows by 16,384 columns
Column Width	255 characters
Row Height	409 points
Total number of characters that a cell can contain	32,767 characters
Characters in a header/footer	255
Sheets in a single workbook	Limited by available memory (default is 3 sheets)
Number of characters for naming a sheet	31 characters

THE BASICS

THE MOUSE

Your mouse pointer will take on a different shape depending where you are in the spreadsheet.

	Selection Face – used to select one cell or a range of cells.
	Used to Move or Copy text using the Drag & Drop Feature.
	AutoFill Handle – used to copy cell contents or formulas to adjoining cells.
	I-Beam – shows you when the contents of a cell is being edited.

WHAT ARE WORKSHEETS?

A worksheet is also called a spreadsheet. A worksheet is just like a piece of paper, but can contain more information than can be printed on one sheet of paper. The worksheet is the primary document you use in Microsoft Excel to store and manipulate data. A worksheet consists of cells organized into columns and rows and is always part of the workbook.

WHAT IS A WORKBOOK?

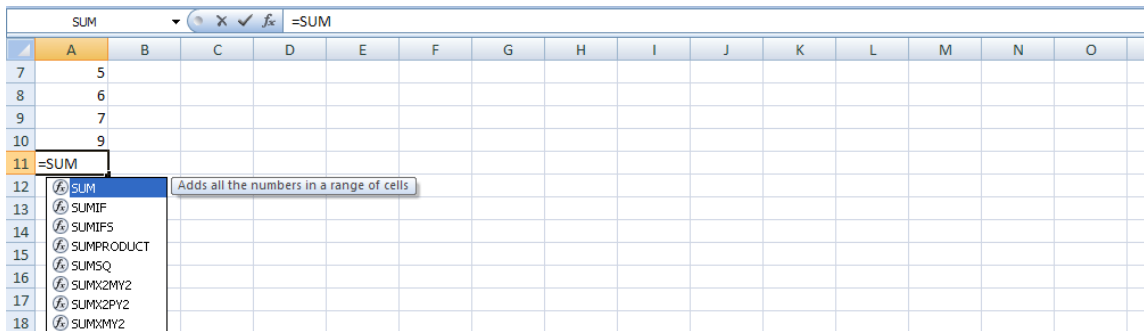
A workbook is what we called the file in Excel. A workbook is made up of a combination of worksheets. You can add as many additional worksheets as your computer's memory can handle. When you open a new workbook in Excel you are given 3 worksheets by default.

THE FORMULA BAR

NAME BOX



FUNCTIONS BOX



Name Box	Displays the Cell Address of the active cell.
Functions Box	When you type an equal sign (=) in a cell, the Name Box becomes the Functions Box which gives you a list of all of EXCEL's functions. You can select the one you want from the list or you can type it in manually.
Cancel Button	Allows you to cancel the information before you have entered it in your workbook.
Enter Button	Allows you to enter the information in you workbook without changing the cell address.
Insert Function Button	Calls up the Function Wizard and allows you to select a function from the list.
The Open Area	Displays the formula that is in the active cell.

MOVING AROUND THE SPREADSHEET

There are many ways to move around a spreadsheet.

THE NAME BOX

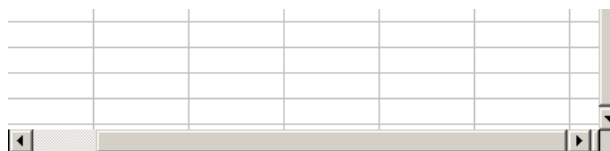
The Name Box is the easiest way to have Excel move you to a specific cell address.



- Click into the Name Box.
- Type the cell address or cell name.
- Press Enter.

THE SCROLL BAR OR SCROLL WHEEL (MOUSE)

You can click on the arrows on the scroll bar or you can physically drag the vertical scroll bar up or down or the horizontal scroll bar left or right.



You can also use the Scroll Wheel on your mouse to scroll through the worksheet.

THE KEYBOARD

You can use the arrow keys on your keyboard or on the Number Pad (if you turn the Number Lock off). There are several common keystroke shortcuts that are listed on the next page.

MOVING TO DIFFERENT SHEETS

With the Mouse	Just click the mouse on the Sheet Tab you want to move to.
With the Keyboard	To move to the next sheet – CTRL + Page Down
	To move to the previous sheet – CTRL + Page Up

KEYSTROKE SHORTCUTS

TO MOVE TO	KEYSTROKE
ONE CELL TO THE RIGHT	TAB
ONE CELL TO THE LEFT	SHIFT + TAB
CELL A1	CTRL + HOME
FIRST CELL IN CURRENT ROW	HOME
MOVES DOWN ONE WINDOW BY ROWS	PAGE DOWN KEY
MOVES UP ONE WINDOW BY ROWS	PAGE UP KEY
MOVES RIGHT ONE WINDOW BY COLUMNS	ALT + PAGE DOWN
MOVES TO THE NEXT SHEET IN WORKBOOK	CTRL + PAGE UP
GO TO COMMAND	F5 KEY CTRL + G EDIT – GO TO (FROM MENU BAR)
USING THE END KEY	
MOVES TO THE LAST CELL OF DATA IN THE WORKSHEET	CTRL + END
MOVES TO THE LAST CELL OF DATA IN THE COLUMN	END + ↓
MOVES TO THE LAST COLUMN OF DATA IN THE CURRENT ROW	END + →

DIFFERENT INFORMATION THAT CAN BE ENTERED IN EXCEL

TEXT

Text can be entered into EXCEL. EXCEL considers any cell containing any text, even if it contains both text and numbers as “Text”. You can enter up to 32,000 characters in a cell and text is left-aligned.

Examples of Text:

Firm Name

123 Main Street
Las Vegas, NV 89111
(702) 555-1234

or

702-555-1234

or

702/555/1234

If you type a number as any of these number formats above, EXCEL will consider it as text not a number.

DATE

Excel recognizes several different ways of inserting a date:

October 2, 2005

10/2/05

Oct-02

Oct-2005

02-10-05

Excel gives you many options to format a date.

The current data can be inserted by pressing **CTRL + ;** at the same time.

TIME

Excel also recognizes several different ways of inserting the time.

13:30

10:21AM

20:00 (You can also use military time.)

Excel gives you many options to format time.

The current time can be inserted by pressing **CTRL + SHIFT + ;** at the same time.

NUMBERS

You can enter numbers with many different formats in EXCEL.

General Number	99
Comma	5,400
Percent	20%
Decimal	3.12345
Currency	\$34,000.00
Exponent	1.2E+08

When first entering a number, type it in with no formatting. You can then format numbers by selecting an entire column(s) or row(s).

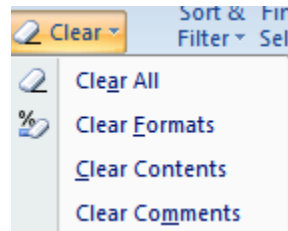
If a column is too small for Excel to display an entire number, Excel will either turn the number into an exponent or will display it as pound signs (#####).

The easiest way to size a column is to double-click on the border after the column.

FORMATTING A CELL AS YOU TYPE

If you enter a number or text with specific formatting in a cell, the cell retains the same formatting even if you delete the data.

To clear the format from a cell, from the Home Ribbon, click the Clear option:



Clear All – will delete the contents and the formatting from the cell.

Clear Format – will leave the contents and clear the formatting.


Clear Contents – will delete the contents, but leave the formatting. (Same as using the **DELETE** key.)

Clear Comments – if the cell contains a comment, the comment will be deleted.

EDITING THE CONTENTS OF A CELL

WHILE ENTERING THE DATA

When you are in the middle of typing data into a cell you can edit it by either:

- Using the **Backspace** or **Delete** keys.
- Pressing the **ESC** key or the **Cancel button**  to completely delete what you have begun to enter.
- Use **your arrow keys** on the keyboard to move to the text you want to edit and make your changes.
- Click into the **formula bar** to edit the contents.

AFTER ENTERING THE DATA

Once you have entered the information you need to decide if you want to delete the contents of the cell or you just want to edit the contents.

- To replace the entire contents of the cell, click into the cell you want to change and type in the new data.
- To edit the contents of a cell you need to make the cell active for editing. (Status Bar will indicate **EDIT**.) There are several ways to do this:
 - Double-click into the cell you want to edit.
 - Click into the cell and press the F2 key.
 - Click into the Formula Bar and edit the data there.

STATUS MODE

There are different modes of operation in EXCEL that are indicated in the Status Bar as defined below:

READY	EXCEL is ready for you to begin entering data in a cell. You can also access the Menu Bar or select another cell in this mode.
EDIT	<p>Anyone of the methods describe when editing text on the page before will put you in the EDIT mode.</p> <p>When you are in the EDIT mode you cannot access the Menu Bar or select another cell. To return to the READY mode press the ENTER key when you are finished editing.</p>
ENTER	<p>This indicates that EXCEL is waiting for you to enter data in a cell.</p> <p>Like the EDIT mode you cannot access the Menu Bar or select another cell until you return to the READY mode.</p>

SELECTING CELLS


There are many different ways to select cells.

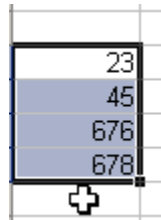
SELECTING ONE CELL

To select one cell, click into it to make it the **Active Cell**. Your active cell is the one with the border around and it is going to be affected by the next set of actions you perform.

SELECTING A GROUP OF ADJACENT CELLS

With the mouse:

- Click the first cell in the group of cells you want to select.
- Place the Selection Face  on top of the Active Cell and hold down the mouse while moving over the area you want to select, then release the mouse as shown below:



With the keyboard:

- Click on the first cell in the group of cells you want to select.
- Then hold down the **SHIFT** key while using your Arrow keys.

SELECTING A GROUP OF NON-ADJACENT CELLS

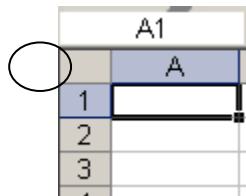
- Click on the cell.
- Hold down the **CTRL** key.
- Continue to click on cells you want to select.

SELECTING THE ENTIRE SPREADSHEET

To select the entire worksheet using the keyboard, press **CTRL + A**.

or

To select the entire worksheet you can use the **Select All Button**. Click on the empty box on the row and column indicators above the Row 1 and next to column A:



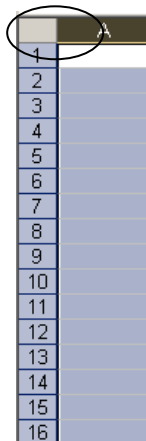
SELECTING A ROW

To select a row, click on the number box to the left of the row to be selected.



SELECTING A COLUMN

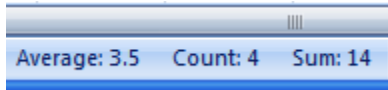
To select a column, click on the letter box above the column to be selected.



THE AUTO CALCULATE FEATURE

You can quickly get a sum, count or average of a range of numbers without entering a formula with the Auto Calculate Feature.

- Select the range of numbers you want to calculate.
- In the lower-right corner of the Status Bar the Average, Count and Sum of the numbers will be displayed.



- Right click on the area where the sum appears and a short-cut menu will appear with other calculations you can select to automatically appear in the Status Bar:



CALCULATIONS PERFORMED WITH AUTOCALCULATE	
<i>Average</i>	Gives you the average of a range of numbers.
<i>Count</i>	Counts the number of cells in a range
<i>Numeric Count</i>	Counts the number of cells that contain numbers in the range.
<i>Maximum</i>	Returns the maximum value in the range.
<i>Minimum</i>	Returns the minimum value in the range.
<i>Sum</i>	Gives you the sum of the range.

SIMPLE FORMULAS

RULES FOR CREATING FORMULAS

- Every formula must begin with an equal sign (=).
- No spaces are to appear in the formula.
- Numbers or cell addresses can be referenced.

Numbers can be used in formulas as follows:

=Sum(45+67+123+567)

Formulas can use cell addresses as follows:

=sum(D5+D6+D7+D8)

- The cell addresses can be typed in capital or lowercase.

Formulas can contain both numbers and cell addresses.

=sum(D9+6+D10+8)

OPERATORS IN FORMULAS

<i>ARITHMETIC OPERATORS</i>		
<i>Operator</i>	<i>Formula</i>	<i>Type of Operation</i>
+	=2+2 or =A1+A2	Addition
-	=10-3 or =A1-A2	Subtraction
*	=4*4 or =A1*A2	Multiplication
/	=20/5 or =A1/A2	Division
%	=10%	Percent
^	=5^2 or =A1^A2	Exponentiation (to the power of)

<i>COMPARATIVE OPERATORS</i>	
<i>Operator</i>	<i>Type of Operation</i>
=	Equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
<>	Not equal to

ORDER OF OPERATION

The following is the order of operation: Parentheses, Exponents Multiplication, Division, Addition and Subtraction.

i.e.

$$=2+2*5 \quad 12$$

You can use parentheses to change the order of operation:

i.e.

$$=(2+2)*5 \quad 20$$

USING EXCEL FUNCTIONS

The built-in functions in EXCEL perform standard worksheet calculations. The values on which a function performs operations are called **arguments**. The values that the functions return are called **results**. You use functions by entering them into formulas on the worksheet. The sequence of characters used in a function is called the **syntax**. The syntax of a formula begins with an equal sign (=) and is followed by a combination of values and operators.

Parentheses tell EXCEL where arguments begin and end. You must include both parentheses, with no spaces before the argument and after. Arguments can be numbers, text, logical values, arrays, error values or cell references. The argument you designate must produce a valid value for that argument. Arguments can also be constants or formulas, and the formulas can contain other functions. When an argument to a function is itself a function, it is said to be **nested**. In EXCEL, you can nest up to seven levels of functions in a formula.

RULES FOR CREATING FORMULAS WITH FUNCTIONS

- All formulas must start with an equal sign (=), followed by the function name.
- The arguments must be in parentheses.
- AND NO SPACES are to appear.

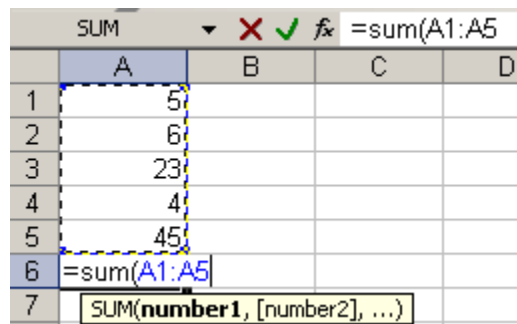
=SUM(2,4,5,B6,C15,D21)

NOTE: By default EXCEL always displays the results of the formula in the cell of the worksheet. If you want to see the actual formulas in the worksheet, press **CTRL + ~ (tilda)**.

REFERENCING ADJACENT CELLS IN A FORMULA

Instead of typing the cell addresses in a formula, you can reference the cells by selecting them with your mouse.

- Click into the cell where you want to enter the formula.
- Type an equal sign (=)
- Type the function name (SUM) and the open parentheses (.
- Click on the first cell you want to reference in the formula and select the additional adjacent cells either dragging down or dragging across over the cells.
- EXCEL will display the range of cells with a colon (:). The range specifies the first cell address through the last cell address.
- Press the ENTER key.
- EXCEL will add the closing parentheses.

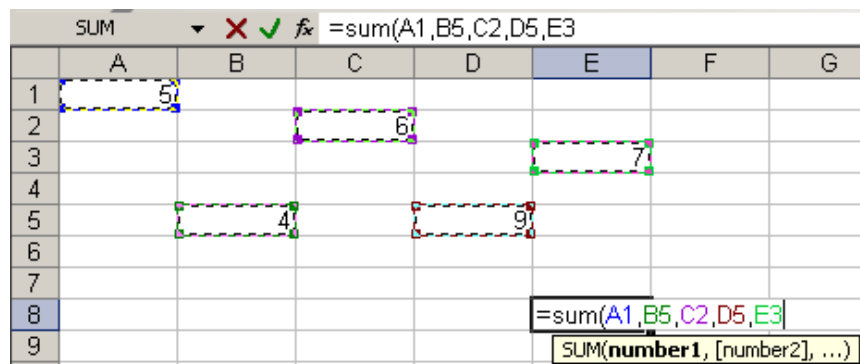


	A	B	C	D
1	5			
2	6			
3	23			
4	4			
5	45			
6	=sum(A1:A5			
7	SUM(number1, [number2], ...)			

REFERENCING NON-ADJACENT CELLS IN A FORMULA

Working with functions for non-adjacent cells follows the same principle as adjacent cells. The main difference is that each cell address is separated with a comma (,).

- Click into the cell where you want to enter the formula.
- Type an equal sign (=)
- Type the function name (SUM) and the open parentheses (.
- Click on the first cell you want to reference in the formula.
- Hold down the **CTRL** key and continue to click on the non-adjacent cells you want to reference in the formula.
- EXCEL will display the list of cells, each one separated by a comma (,).
- Press the **ENTER** key.
- EXCEL will add the closing parentheses.



NOTE: You can combine ranges, non-adjacent cells and constant numbers in a formula, each separated by a comma (,) as follows:

=SUM(A1:A5,C6,D12,8,5,8)

MOST COMMONLY USED FUNCTIONS

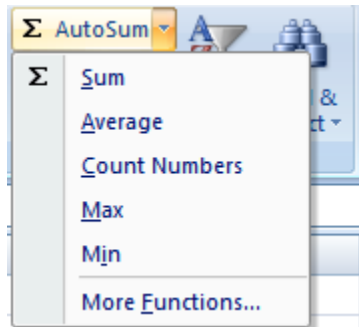
<i>=SUM</i>	Adds all the numbers in a range of cells.
<i>=MAX</i>	Returns the largest number in a set of values.
<i>=MIN</i>	Returns the smallest number in a set of values.
<i>=AVERAGE</i>	Returns the average of an argument. An argument can contain numbers, ranges or individual cells.

AUTOSUM Σ

AutoSum is a shortcut to using the =SUM function. AutoSum will automatically insert the formula for you. All you have to do is reference the cell addresses or sometimes EXCEL will assume the range of the cells as shown below:

	A	B	C	D
1	Worldwide Sporting Goods			
2	Regional Sales Report			
3				
4	Region			
5	Northern	50986	58634	
6	Southern	45284	52077	
7	Central	42326	48675	
8	Western	39675	45626	
9	Totals	=SUM(B5:B8)		
10				

- Click into the empty cell below the range of values. This is where the formula will automatically appear.
- Click on the **AutoSum** button on the Home Ribbon in the Editing Group:



- EXCEL will automatically select the range of the cells above.
- Press the **ENTER** key.

NOTE: The AutoSum feature will not work if there are blank cells above and may or may not work when referencing cells to the left of the formula.

DATA MENU FEATURES

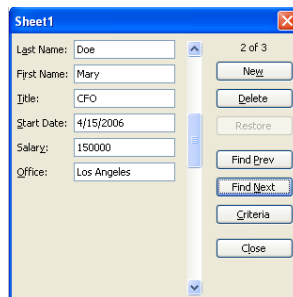
Excel has built-in data management features. You can use an entire worksheet or portions of a worksheet to manage data. Using Excel's features from the Data Menu, you can enter, edit, locate, sort and set criteria for your own data.

SETTING UP THE SPREADSHEET

In order to use many of the features under the Data menu, you must set up the spreadsheet correctly. There are three types of Excel data: text, numbers and dates. In order to use Excel's data management features, you must keep the same type of data in one column and do not mix them. You must then use column headings to define the data in each column.

INPUTTING DATA USING THE DATA FORM

- Once you determine your column headings (fields), you can use the Data Form to help you input each record (row of information).
- Position your insertion point on the first column heading.
- From the menu, select Data – Form.
- A form will appear listing all the column headings. You enter the data in each field as shown below.

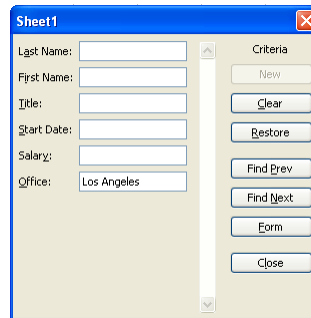


- After you have finished entering the data for one record, click on the Next button to enter the data for next record.
- When you are finished entering the data for all records, click the Close button.
- Each record will now appear as a row in the worksheet.

FINDING DATA USING THE DATA FORM

You can define criteria to locate records in the Data Form. Criteria filters the records so that you view only those records meeting the criteria.

- To access the Data Form, from the menu, select Data – Form.
- All the records in the worksheet will now appear in the data form, one record at a time.
- To define criteria, click on the Criteria button from the Data Form.
- The Criteria dialog box will appear:



- Enter the criteria in the field you want to search on.
- ie. - To view all the records for a specific office, type the name of the office in the Office field.
- Click the Find Next button to find the first record that meets the set criteria.
- Click the Find Next button again to find the next record.
- Excel will beep once you find the last record that meets the criteria.

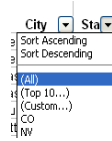
AUTO FILTER

You can filter data to display only selected information. A filter is a set of criteria that must be met. When you enable a filter, only the rows (records) matching the filter conditions appear.

- The Auto-Filter feature allows you to easily create and change filters in the list.
- To enable AutoFilter, from the menu, click **Data – Filter – AutoFilter**.
- AutoFilter arrows will now appear in the column headings.

	A	B	C	D	E	F	G	H	I
	Property	Street Address	City	Sta	Postal Cod	Property Manager	Lease Renewal Date	Yearly Income	Projected 2003 Income
2	3	200 Lincoln Avenue	Denver	CO	80202	Cynthia Jones	10/15/2004	\$45,000.00	\$47,250.00
3	4	300 Lincoln Avenue	Denver	CO	80202	Cynthia Jones	10/15/2004	\$50,000.00	\$52,500.00
4	1	100 Lincoln Avenue	Las Vegas	NV	80202	Cynthia Jones	10/15/2004	\$40,000.00	\$42,000.00
5	10	400 Lincoln Avenue	Las Vegas	NV	80202	Cynthia Jones	10/15/2004	\$75,000.00	\$78,750.00
6	5	1455 South Parkway Place	Aurora	CO	80291	John Campbell	2/15/2003	\$7,500.00	\$7,875.00
7	9	2000 Main Street	Littleton	CO	80240	John Parker	1/12/2004	\$11,500.00	\$12,075.00
8	2	1000 Broadway	Denver	CO	80202	Karl Wayman	9/1/2005	\$400,000.00	\$420,000.00
9	6	140 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$105,000.00	\$110,250.00
10	7	145 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$116,000.00	\$121,800.00
11	8	150 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$97,000.00	\$101,850.00

- Click on the down arrow next to the column heading to select the criteria you want to filter the data by.



- Only records that meet the criteria will now be listed and the records that do not, will be hidden; not deleted indicated by the blue rows missing.

	A	B	C	D	E	F	G	H	I
	Property	Street Address	City	Sta	Postal Cod	Property Manager	Lease Renewal Date	Yearly Income	Projected 2003 Income
4	1	100 Lincoln Avenue	Las Vegas	NV	80202	Cynthia Jones	10/15/2004	\$40,000.00	\$42,000.00
5	10	400 Lincoln Avenue	Las Vegas	NV	80202	Cynthia Jones	10/15/2004	\$75,000.00	\$78,750.00
9	6	140 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$105,000.00	\$110,250.00
10	7	145 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$116,000.00	\$121,800.00
11	8	150 East Graland Street	Las Vegas	NV	80202	Mary Martinez	9/16/2006	\$97,000.00	\$101,850.00

- To clear the AutoFilter criteria, from the menu, select **Data – Filter – Show All**.