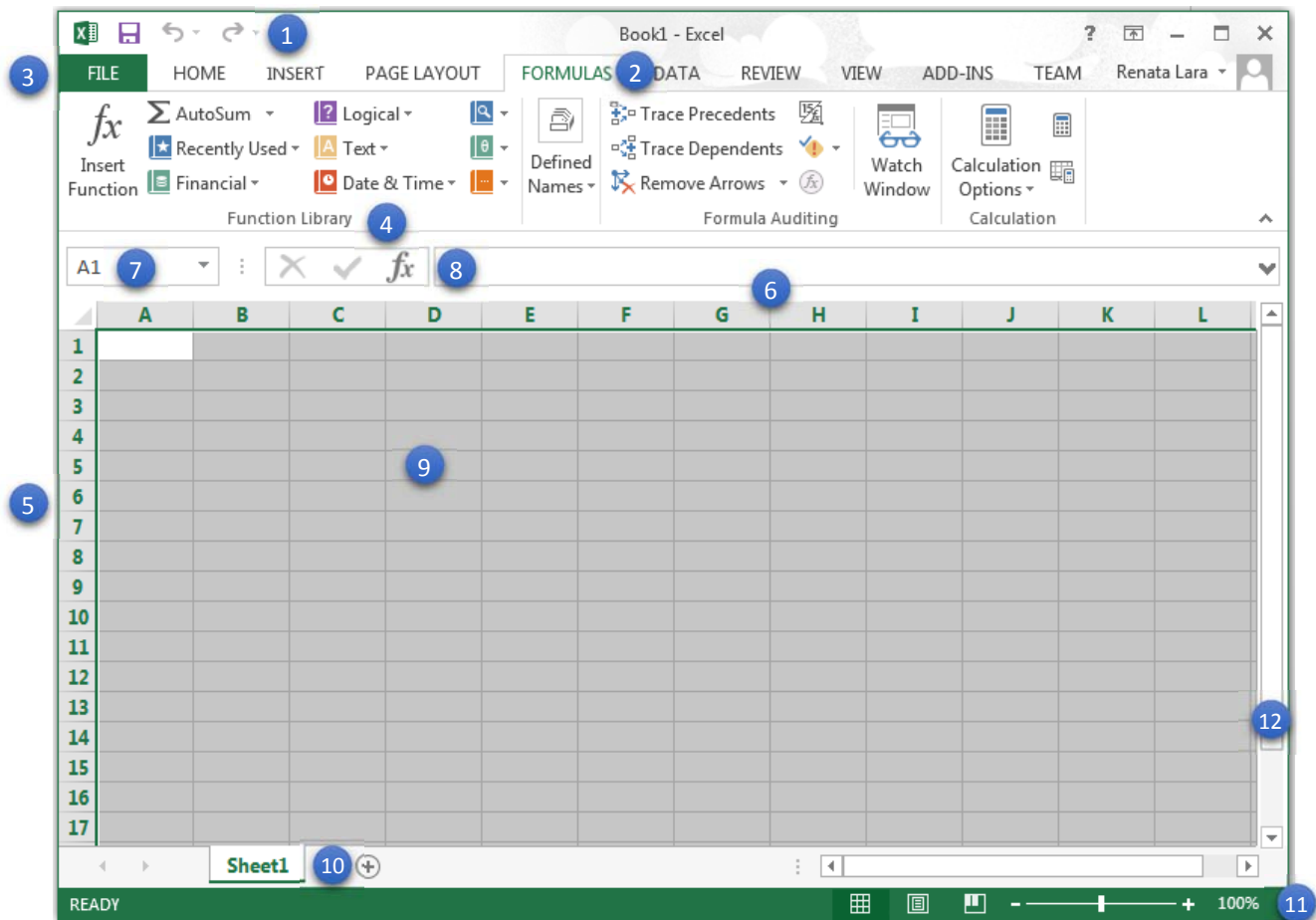




Microsoft Excel is the spreadsheet application in the MS Office suite.

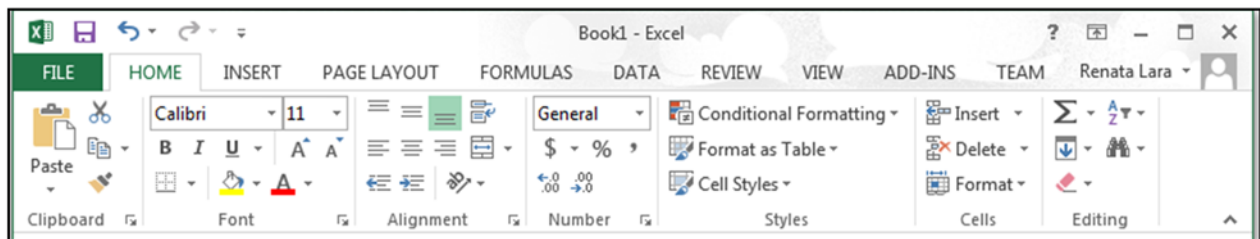
A **spreadsheet** program allows you to store, organize, and analyze data so that you can create documents such as budgets, invoices, logs, lists, and charts.

What does Excel look like?

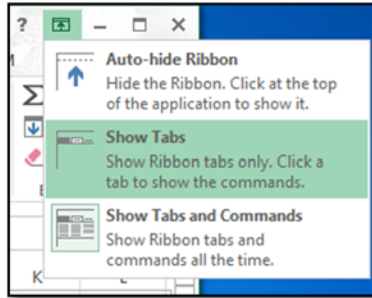



1. **QUICK ACCESS TOOLBAR:** Lets you access the commands you use the most. It is customizable.
2. The **RIBBON** and **TABS:** It contains all the commands you will need to create your projects in Excel. It is organized in TABS.
3. **FILE TAB** or Backstage View: Includes the commands for Creating New, Saving, Opening, and Printing your spreadsheets.
4. **GROUPS:** Each TAB in your RIBBON is further organized into GROUPS of similar commands. Ex: The Home TAB has the Font group, Alignment Group, and Styles Group.
5. **ROWS:** Spreadsheets have ROWS that go left-to-right and are named with Numbers.
6. **COLUMNS:** Spreadsheets have COLUMNS that go top-to-bottom and are named with Letters.
7. **NAME BOX:** Displays the name of a CELL. It can be used to select single cells or multiple cells.
8. **FORMULA BAR:** Used to enter or change data, formulas, or functions throughout the spreadsheet.
9. **CELL:** Each box (rectangle) in the spreadsheet is called a CELL. It is where a ROW and a COLUMN intercept. The location (name) of each cell is shown in the NAME BOX when clicked.
10. **WORKSHEETS:** Spreadsheets are called Workbooks, and each workbook has at least one WORKSHEET. These are like files that all belong to the same spreadsheet. To create new ones in Excel, click the Plus (+) icon. Tabs can be moved, renamed, copied, and can have different colors.
11. **ZOOM:** ZOOM of the spreadsheet can be changed by sliding the control from the minus (smaller view) to the plus (bigger view).
12. **SCROLL BARS:** Excel offers a Vertical and Horizontal SCROLL BAR to scroll the spreadsheet up and down.

The Ribbon



Since Office 2007, Microsoft products use a Tabbed Ribbon system instead of menus. All the commands for Excel are found across the top of the screen in a system of icons (pictures) organized in TABS and GROUPS.

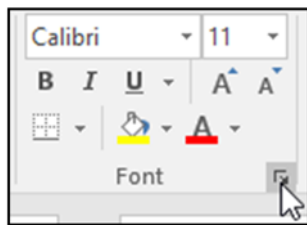


The **Ribbon** is always visible at the top, but the way it is shown can be customized by clicking the  icon.

- *Auto-hide*, hides the entire ribbon.
- *Show Tabs* only shows the names of the tabs (no pictures).
- *Show Tabs and Commands* is the default, as you are seeing your ribbon now.



Tabs are how commands are organized in the Ribbon. There are the Home tab, Insert tab, Page Layout tab, Formulas tab, etc.




Each tab is further organized into groups of similar effects that are used more commonly.

Ex: The Font Group in the Home Tab.

The small square at the bottom-right corner means that there are more options in that group. Click the box to see them.

Quick Access Toolbar

The Quick Access Toolbar is a feature of Microsoft Office, this means that it is found in every office application: Word, Excel, PowerPoint, and Publisher. The quick access toolbar lets you access the commands you use the most, such as the Save, Print, or Undo buttons. It can be customized to include the buttons you choose, by clicking the  drop-down arrow.



The Quick Access Toolbar is found at the top of the Ribbon.

Excel Features

- [Creating new workbooks](#)
- [Opening existing workbooks / Opening recently used workbooks](#)
- [Saving workbooks](#)

- Working with Worksheets
- Moving Worksheet tabs
- Renaming Worksheets
- Copying Worksheets

- [Using the work area](#)
- [Columns, Rows, and Cells](#)
- [Cell content](#)
- [Formatting cell content](#)

- [Creating Formulas](#)
- [Predefined functions](#)
- Text functions

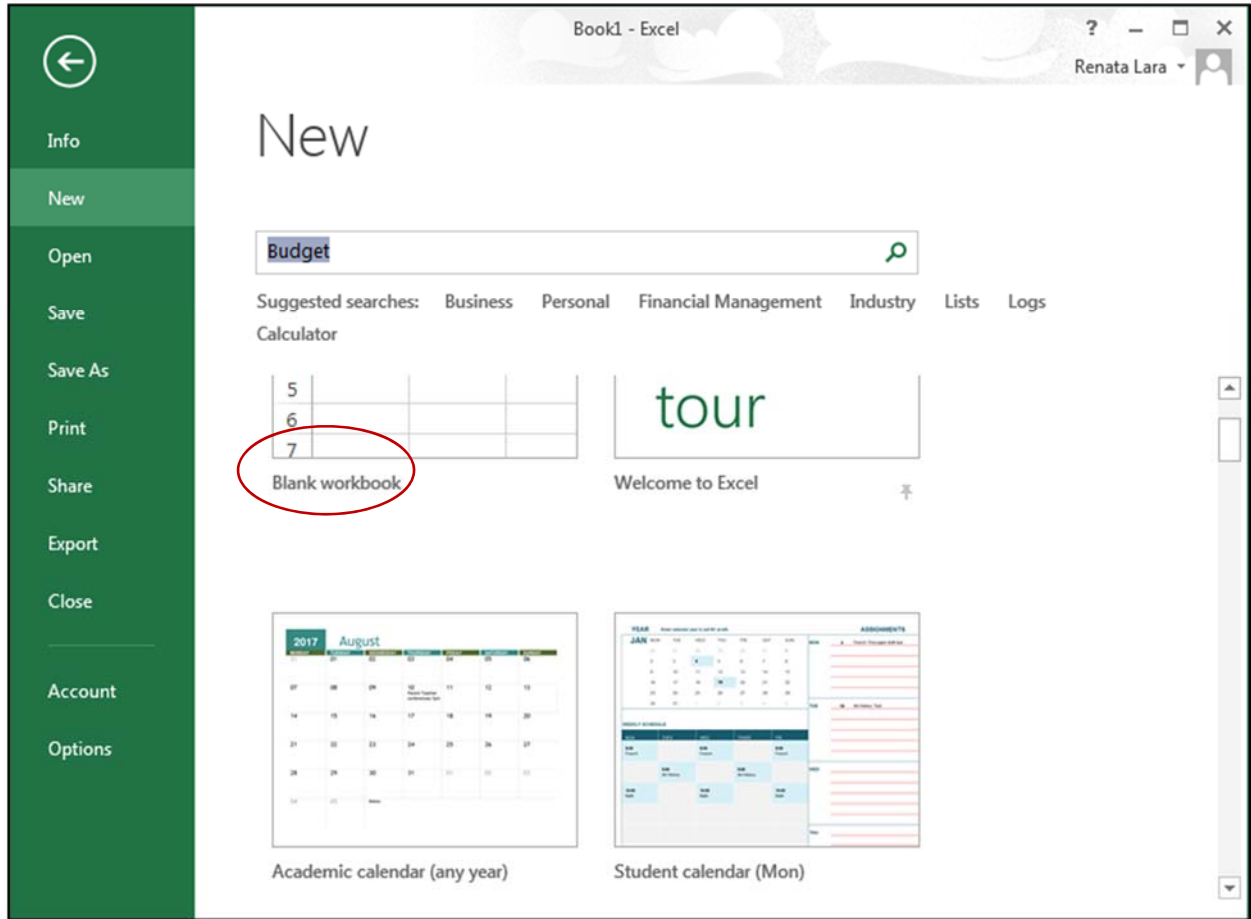
- [Creating an Invoice](#)
- Creating a Budget
- Creating a List

Creating New Workbooks

Files in Excel are called Workbooks and they are created every time you make a new file. New files could be blank files, or could be created from templates.

A **Template** creates a file from a predefined spreadsheet. There are many different templates available in Excel. You can choose from the ones available in the Backstage View or you can search for more through the search bar available in Excel.

- Go to the FILE Tab, click New, select Blank Workbook (or you could select a Template instead).
- You now have a new, blank workbook.



Opening Existing Workbooks

Sometimes you will work on a workbook that already exists. Maybe you have a file you created long ago.

- Go to the FILE Tab, click Open.
- Click Recent (if you have worked in a file in this computer before). Select the file you want to see.
- *OR* click This PC if you know the file that you need was saved in the Documents file.
- *OR* click Browse if the file that you need is found somewhere in your computer other than Documents.
- *OR* click OneDrive if your file is stored online (in the cloud).

Saving Workbooks

Saving means storing all the work you are doing in a place in the computer (or thumb-drive, or the cloud) so that you can continue editing it at a later time. Saving is very important otherwise we could lose all the work we are doing.

Save vs. Save As

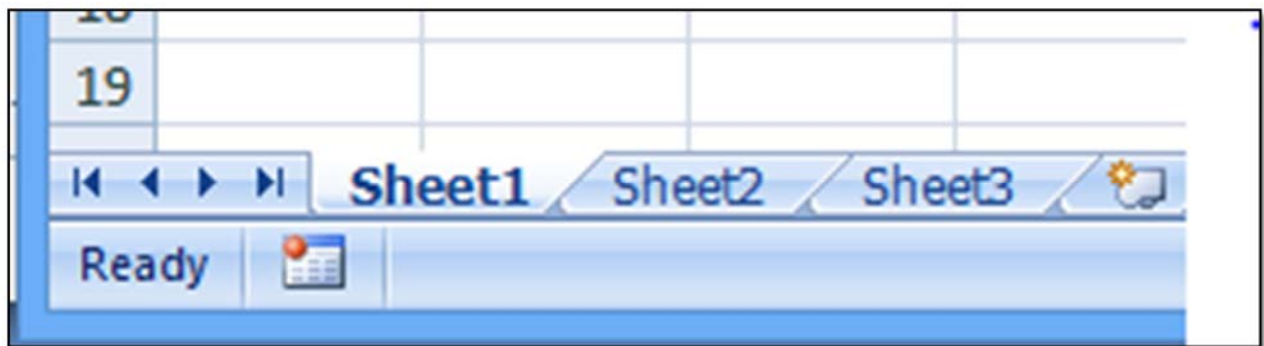
Save As – When you first create a new, blank workbook, you want to ‘Save As’ the work. Clicking Save As will allow you to choose the name for your workbook and the place where to save it.

Save – Once you have a document that you have already named and saved through ‘Save As’ before, then you want to choose ‘Save’ as this continues to save in the same document you have already been working on. With this option there is no need to choose locations or names any more.

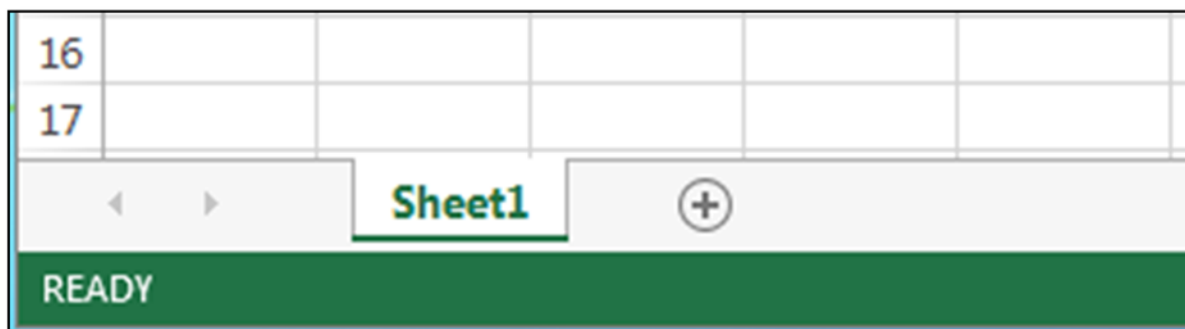
Using the Work Area

As mentioned before, Excel files are called workbooks. Each workbook can hold one or more worksheets (also known as "spreadsheets").

Depending on your version of Excel, one-to-three worksheets may appear by default when you open an Excel workbook. You can rename, add and delete worksheets.



MS Excel 2007



MS Excel 2013

Columns, Rows, and Cells

Columns - A column is a group of cells that runs from the top of the page to the bottom. In Excel, columns are identified by letters. Column C is selected in the image below.

	A	B	C	D
1				
2				
3			787878	
4				
5				
6				
7				
8				
9				
10				
11				

Rows - A row is a group of cells that runs from the left of the page to the right. In Excel, rows are identified by numbers. Row 3 is selected in the image below.

	A	B	C	D	E
1					
2					
3			787878		
4					

Cells - Each rectangle in a worksheet is called a cell. A cell is the intersection of a row and a column. Cells are the basic building blocks of a worksheet.

Cell Content

Cells can contain a variety of content such as text, formatting attributes, formulas, and functions. To work with cells, you'll need to know how to select them, insert content, and delete cells and cell content.

Text - Cells can contain letters, numbers, and dates.

Formatting attributes - Cells can contain formatting attributes that change the way letters, numbers, and dates are displayed. For example, dates can be formatted as MM/DD/YYYY or M/D/YYYY.

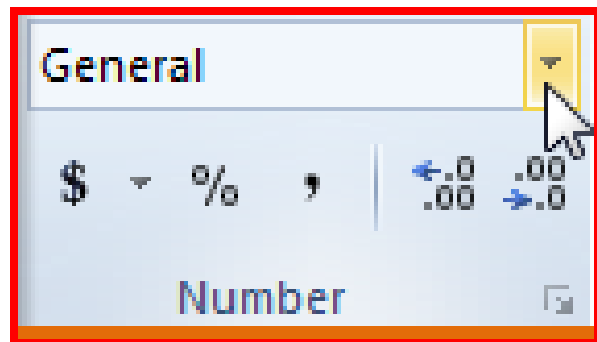
Formulas and functions - Cells can contain formulas and functions that calculate cell values. For example, SUM(cell 1, cell 2...) is a formula that can add the values in multiple cells.

Formatting Cell Content

Excel can format numbers and dates in a variety of ways: decimal places, currency symbols (\$), or percent symbols (%).

Click on the cells you want to modify.

Click the drop-down arrow next to the Number Format command on the Home tab.



Select the number format you want. *For some number formats, you can then use the Increase Decimal and Decrease Decimal commands (below the Number Format command) to change the number of decimal places that are displayed.*

- **General** is the default format for any cell. When you enter a number into the cell, Excel will guess the number format that is most appropriate.
 - For example, if you enter "1-5", the cell will display the number as a Short Date, "1/5/2010".
- **Number** formats numbers with **decimal places**.
 - For example, if you enter "4" into the cell, the cell will display the number as "4.00".
- **Currency** formats numbers as currency with a currency symbol.
 - For example, if you enter "4" into the cell, the cell will display the number as "\$4.00".
- **Accounting** formats numbers as monetary values like the Currency format, but it also aligns currency symbols and decimal places within columns. This format will make it easier for you to read long lists of currency figures.
- **Short Date** formats numbers as M/D/YYYY.
 - For example, August 8th, 2010 would be "8/8/2010".
- **Long Date** formats numbers as Weekday, Month DD, YYYY.
 - For example, "Monday, August 01, 2010".

- **Time** formats numbers as HH/MM/SS and notes **AM** or **PM**.
 - For example, "10:25:00 AM".
- **Percent** formats numbers with decimal places and the percent sign.
 - For example, if you enter "0.75" into the cell, the cell will display the number as "75.00%".
- **Fraction** formats numbers as fractions separated by the forward slash.
 - For example, if you enter "1/4" into the cell, the cell will display the number as "1/4". If you enter "1/4" into a cell that is formatted as General, the cell will display the number as a date, "4-Jan".
- **Scientific** formats numbers in scientific notation.
 - For example, if you enter "140000" into the cell, then the cell will display the number as "1.40E+05".
 - Note: by default Excel will format the cell in scientific notation if it is a large integer. If you do not want Excel to format large integers with scientific notation, then use the Number format.
- **Text** formats numbers as text, meaning that what you enter into the cell will appear exactly as you wrote it. Excel defaults to this setting if a cell contains both text and numbers.

Creating Formulas

Excel uses standard operators for equations.

- **Addition:** plus sign (+)
- **Subtraction:** minus sign (-)
- **Multiplication:** asterisk (*)
- **Division:** forward slash (/)
- **Exponents:** caret (^)
- When writing formulas in Excel always begin with an **equals sign (=)**.

1			
2	Simple Formulas	Syntax	Result
3	Addition	= 5 + 5	10
4	Subtraction	= 5 - 2	3
5	Multiplication	= 5 * 5	25
6	Division	= 12 / 4	3
7	Exponential	= 3 ^ 2	9

An important feature of Excel is the use of what is called **Cell References**.

- Using Cell Name addresses to create a formula is called a Cell Reference. Cell reference allows us to create formulas without having to rewrite formula values.
- When writing a formula using cell reference, start with an equals sign (=) at the location where you want to display the result and then type the cell address where the values are found.

10	Cell Reference Formulas		
11	Addition	70	30
12	Subtraction	70	30

Note: In the original image, a formula bar shows '=B11+C11' with blue and green boxes highlighting the cell references B11 and C11, and a blue box around the result 70 in the cell below.

Excel uses the default **Order of Operations** to solve calculations.

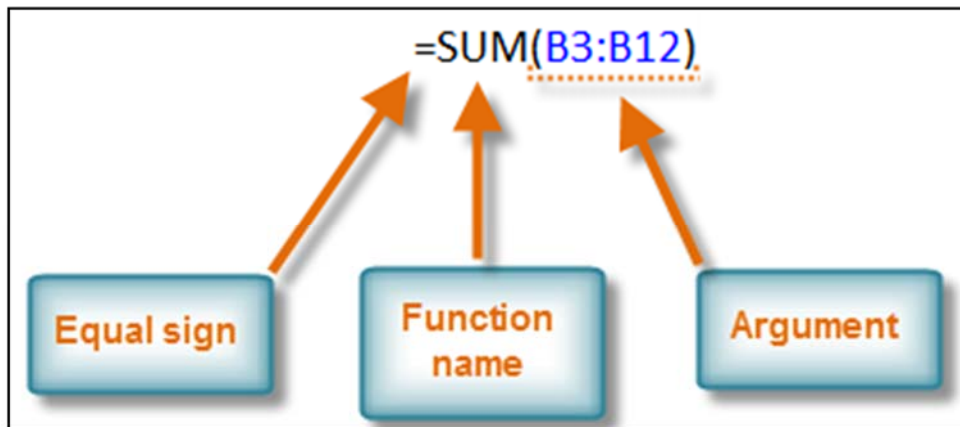
If a part of the formula is in parentheses, that part will be calculated first. It then performs multiplication or division calculations. Once this is complete, Excel will add and subtract the remainder of the formula.

A4		fx		=A1*A2+A3	
	A	B	C		
1	2				
2	2				
3	1				
4	5				
5					

A4		fx		=A1*(A2+A3)	
	A	B	C		
1	2				
2	2				
3	1				
4	6				
5					

Predefined Functions

- A function is a predefined formula that performs calculations using specific values in a particular order.
- A key benefit of functions is that they can save you time since you do not have to write the formula yourself.
- Excel has hundreds of different functions to assist with your calculations.
- Each function has a specific order, called syntax, which must be followed for the function to work correctly.
- The basic syntax to create a formula with a function is to insert an equals sign (=), a function name (SUM, for example, is the function name for addition), and an argument.
- Arguments contain the information you want the formula to calculate, such as a range of cell references.



- Arguments must be enclosed in parentheses. Individual values or cell references inside the parentheses are separated by either colons or commas.
- Colons create a reference to a range of cells.
 - For example, =AVERAGE(E19:E23) would calculate the average of the cell range E19 through E23.
- Commas separate individual values, cell references, and cell ranges in the parentheses. If there is more than one argument, you must separate each argument by a comma.
 - For example, =COUNT(C6:C14,C19:C23,C28) will count all the cells in the three arguments that are included in parentheses.

Predefined Functions: COUNT and SUM

Count - To count the number of cells that contain numbers, use the COUNT function.

A7		fx =COUNT(A1:A5)			
	A	B	C	D	
1	10				
2	1				
3	7				
4	20				
5	3				
6					
7	5				
8					

Sum - To sum a range of cells, use the SUM function.

A7		fx =SUM(A1:A5)			
	A	B	C		
1	10				
2	1				
3	7				
4	20				
5	3				
6					
7	41				

Creating an Invoice

1. Start Excel and open a new blank workbook
2. Type the labels in cells **A1** to **A13** as shown in **FIGURE 1**, then save the workbook as **InvoiceSample**.

	A	B	C
1	JD International		
2			
3	1559 Camaro Blvd		
4	Brownsville, TX 78526		
5	Phone: 956-555-5500		
6	Fax: 956-555-0000		
7			
8	BILL TO		
9	[Name]		
10	[Company Name]		
11	[Street Address]		
12	[City, ST ZIP]		
13	[Phone]		
14			

3. Click cell **A1**, click the **DESIGN** tab, click **Themes** in the Themes group, click **Slice**.
4. Click the **HOME** tab, click the **Font Size list arrow** in the font group, change the font size to **20 pt**, then click the **Bold button** (or **[CTRL][B]**) in the Font group.
5. Select cells **A3-A6**, then change the font to size **16 pt**.
6. Click cell **A8**, then change the font to size **16 pt**.
7. Select cells **A8** to **B8**, click the **Fill Color list arrow** in the Font group, click **Turquoise, Accent 1**, click the **Font color list arrow** in the Font group, click **White, Background 1**, then click the **Bold button** (or **[CTRL][B]**).
8. Click cell **G1**, change the font size to **20 pt**, then click the **Bold button** (or **[CTRL][B]**).
9. In cells **G3**, **G4**, and **G5**, type **DATE:**, **INVOICE #**, and **Customer ID:**.
10. Type the labels in row 15 as shown in **FIGURE 2**.


	A	B	C	D	E	F	G	H
14								
15	ITEM #	DESCRIPTION				QTY	UNIT PRICE	TOTAL
16								

11. Select columns **A** through **H**.

	A	B	C	D	E	F	G	H
1	JD International						INVOICE	
2								
3	1559 Camaro Blvd						DATE:	
4	Brownsville, TX 78526						INVOICE #	
5	Phone: 956-555-5500						Customer ID:	

12. Click the **HOME** tab, then click the **Format Cells list arrow** in the Cells group, and click **Column Width**, type **9.5**, then click **OK**.

13. Select cells **B15:E15**, click the **Merge & Center list arrow** in the Alignment group. Your four cells have now become one. Double-click the **Format Painter** icon in the Clipboard group and then drag your cursor from **B16** down to **B30**. Click the Format Painter icon again to disable the feature.
14. In cells G31 through G36 type the following (one in each line): SUBTOTAL, TAX RATE, TAX, S&H, OTHER, and TOTAL.

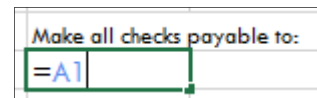
15. Select cells **A15:H30**, click the **Borders list arrow**  in the Alignment group and select **All Borders**. Cells now have borders around and between lines as in the figure below.

14						
15	ITEM #	DESCRIPTION	QTY	UNIT PRICE	TOTAL	
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31					SUBTOTAL	

16. Select cells **H31:H36**, click the **Borders list arrow**  in the Alignment group and select **All Borders**.

17. In cell **G38** type; “ Make all checks payable to: ”, press **[ENTER]**. Click the **Font Size list arrow** in the font group, change the font size to **9 pt**.

18. In cell **G39** press the equals (=) key, then type **A1**, press **[ENTER]**.
The name *JD International* should appear immediately.



19. In cells A40, A41, and A42 type the following text:

40	If you have any questions about this invoice, please contact	
41	Janet Doe, 956-555-5500, Jdoe@myemail.com	
42	Thank You For Your Business!	

20. Select cells A40:F42, right-click the selection, click **Format Cells**, click the **Alignment tab**, click the **Horizontal list arrow**, click **Center Across Selection**, then click **OK**.

