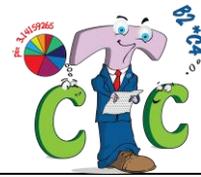




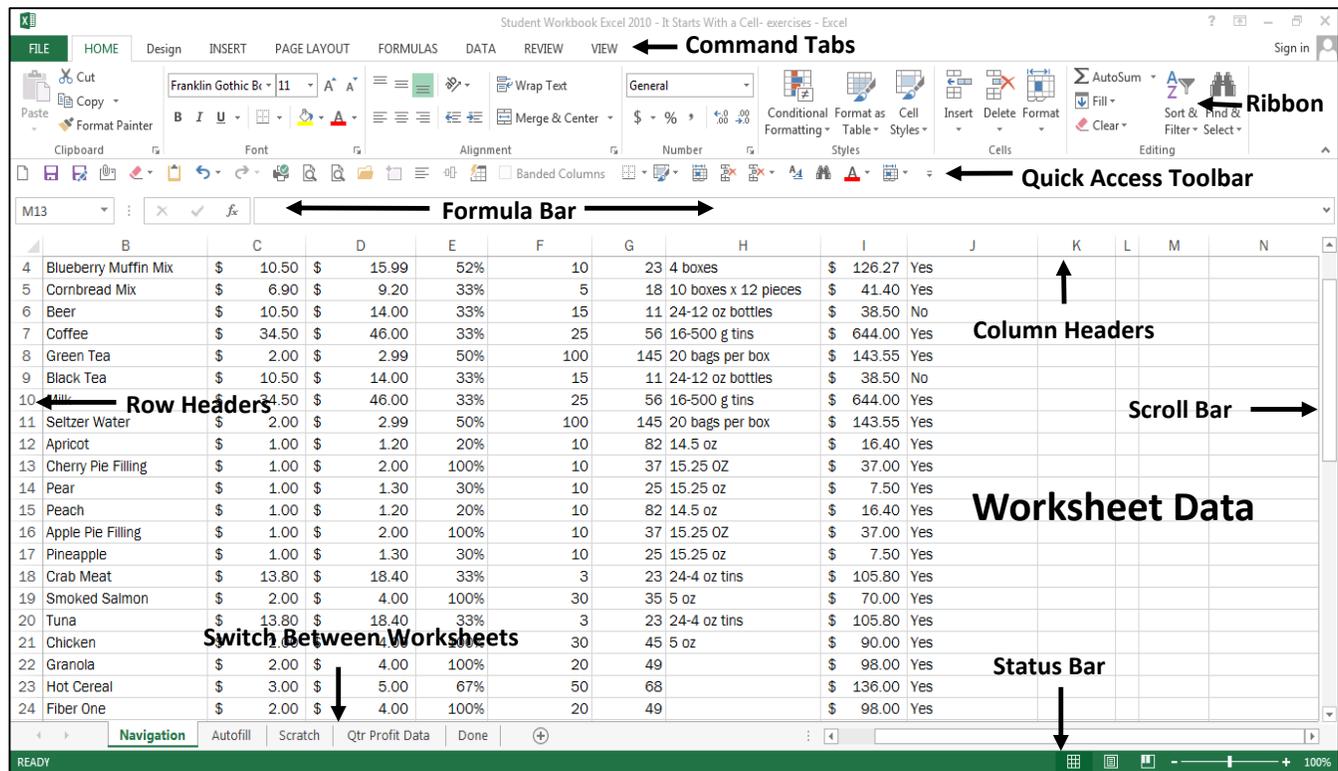
# Quick Reference Guide 1

## Excel 2013 for Windows

### It Starts with a Cell



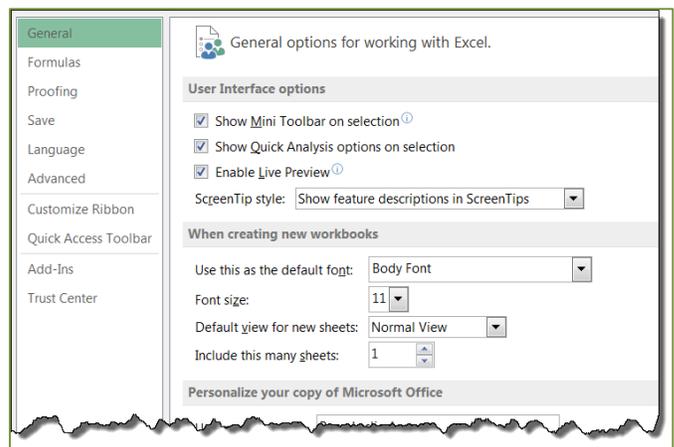
## Excel 2013 Application Window



## Backstage View – File Tab

The **Backstage View – File Tab** includes many of the tasks that were traditionally located in **Tools | Options** in previous versions of Excel. The **Ribbon** contains commands for working in a spreadsheet, while the **Backstage View** on the **File Tab** contains commands you use to do things to a workbook.

1. Click the **File Tab** to access the **Backstage View**.
  - The **File Tab** includes **Info, New, Open, Save, Save As, Print, Share, Export, Close, Account, and Options**.
  - Use **Info** to **Protect Workbook, Check for Issues, and Manage Versions, and Browse View Options**.
  - **File Tab | Options** (shown right) provides **General and Advanced options** to adjust your preferences for **Formulas, Proofing, Save, and Language**.
  - **File Tab | Options | Customize Ribbon** and **File | Options | Quick Access Toolbar** provide customizations for **Ribbons** and the **Quick Access Toolbar**.

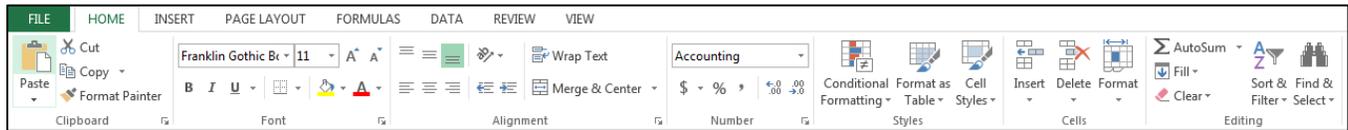


For software training, contact the Computer Training Center (CTC) at 358-1111 or visit the CTC Web site at <http://itcd.hq.nasa.gov/ctc>.

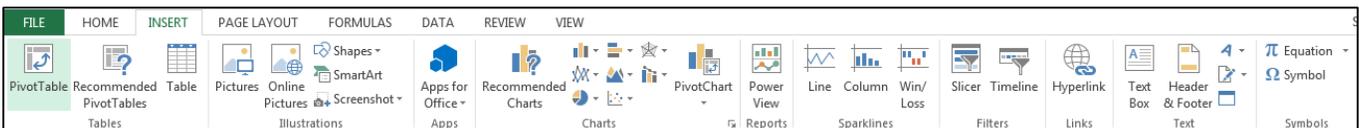
## Command Tabs and Ribbons

The **Command Tabs** and **Ribbons** are designed to quickly find the commands to complete a task. Each **Command Tab** displays a **Ribbon** with commands organized in logical groups by type. The **Ribbons** replaced the menus in previous versions of Excel. Where applicable, the **Ribbon** also contains a dialog box launcher to display the **Clipboard**, **Page Setup**, **Font**, **Chart** and **Sheet** options dialog boxes (to name a view). **Command Tabs** and **Ribbons** can be customized with user-defined groups and user preferred commands.

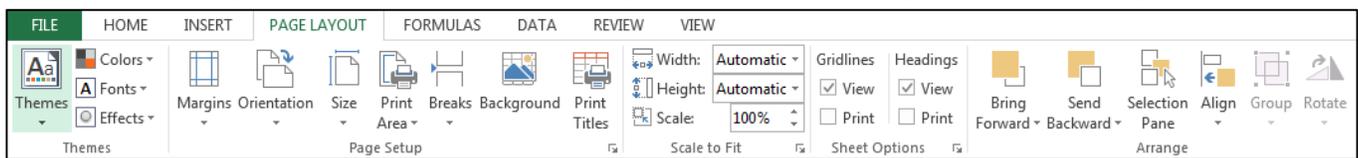
### Command Tab Home: Clipboard, Font, Alignment, Number, Styles, Cells, and Editing.



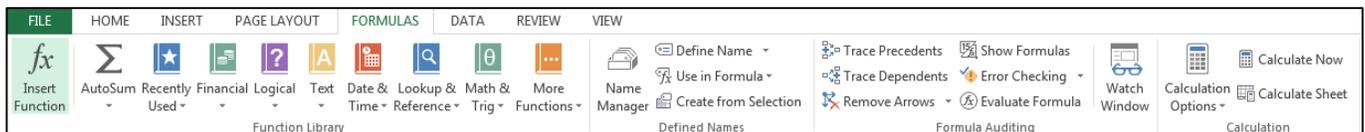
### Command Tab Insert: Tables, Illustrations, Apps, Charts, Reports, Sparklines, Filter, Links, Text and Symbols.



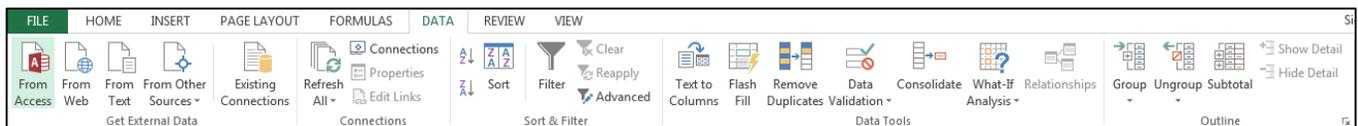
### Command Tab Page Layout: Themes, Page Setup, Scale to Fit, Sheet Options, and Arrange.



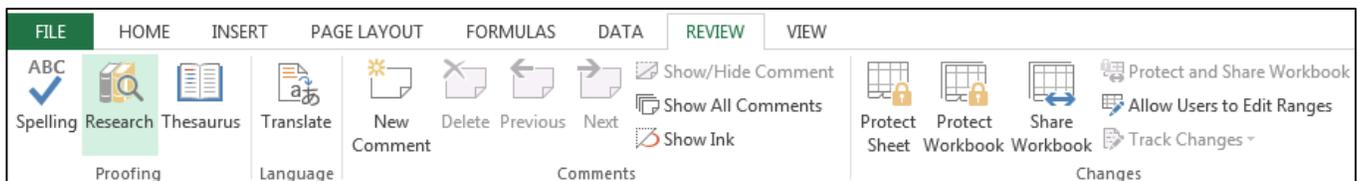
### Command Tab Formulas: Function Library, Defined Names, Formula Auditing and Calculation.



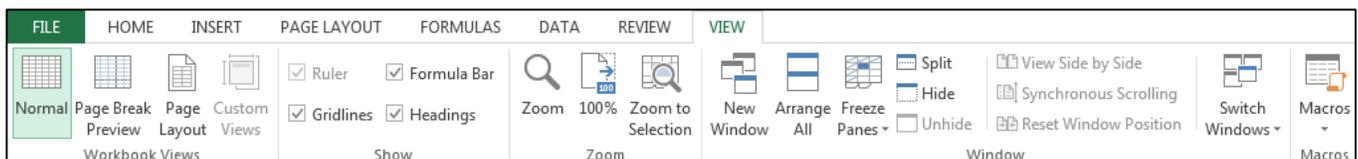
### Command Tab Data: Get External Data, Connections, Sort & Filter, Data Tools, and Outline.



### Command Tab Review: Proofing, Language, Comments, and Changes.



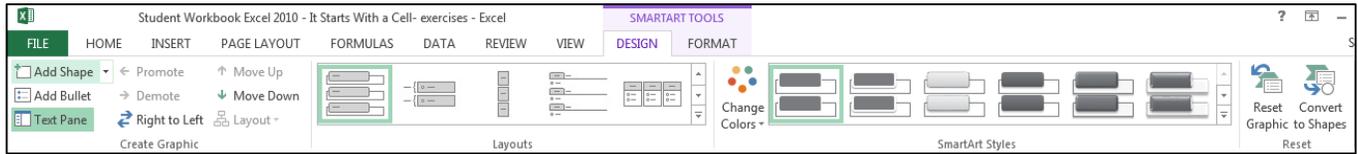
### Command Tab View: Workbook Views, Show, Zoom, Window, and Macros.



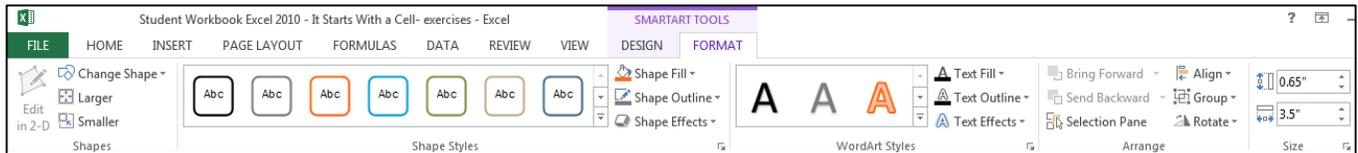
## Tool Tabs

**Tool Tabs** are contextual tabs that display commands appropriate for the action being performed. They are **SmartArt Tools**, **Chart Tools**, **Drawing Tools**, **Picture Tools**, **PivotTable Tools**, **Header & Footer Tools**, **Table Tools**, **PivotChart Tools**, **Ink Tools**, **Sparklines Tools**, **Timeline Tools**, **Slicer Tools**, and **Equation Tools**.

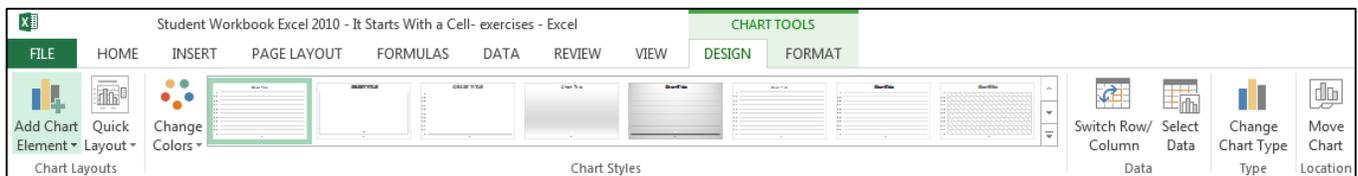
**Tool Tab SmartArt - Design: Create Graphic, Layouts, Smart Styles, and Reset.**



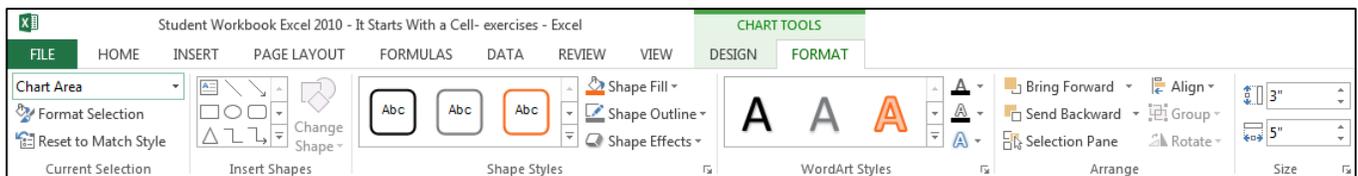
**Tool Tab SmartArt - Format: Shapes, Shape Styles, WordArt Styles, Arrange and Size.**



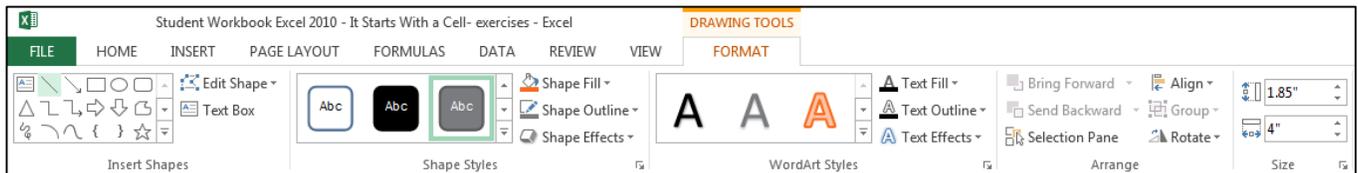
**Tool Tab Chart - Design: Type, Data, Chart Layout, Chart Styles, and Location.**



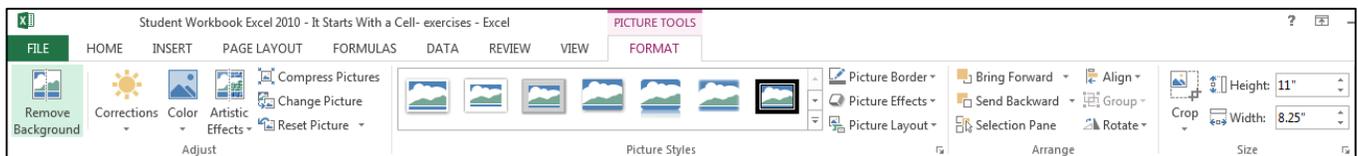
**Tool Tab Chart - Format: Current Selection, Shape Styles, WordArt Styles, Arrange, and Size.**



**Tool Tab Drawing - Format: Insert Shape, Shape Styles, WordArt Styles, Arrange and Size.**



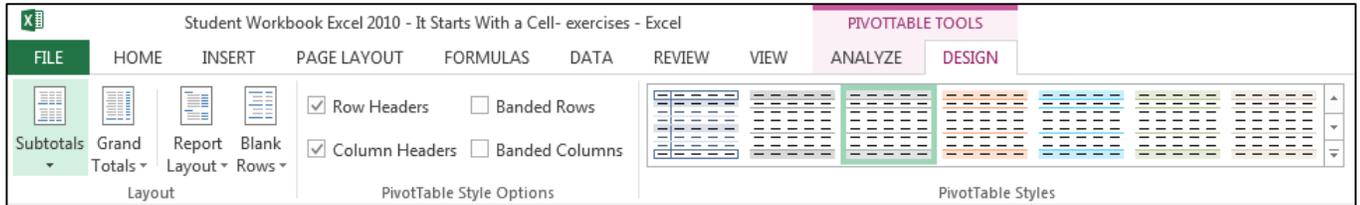
**Tool Tab Picture - Format: Adjust, Picture Styles, Arrange and Size.**



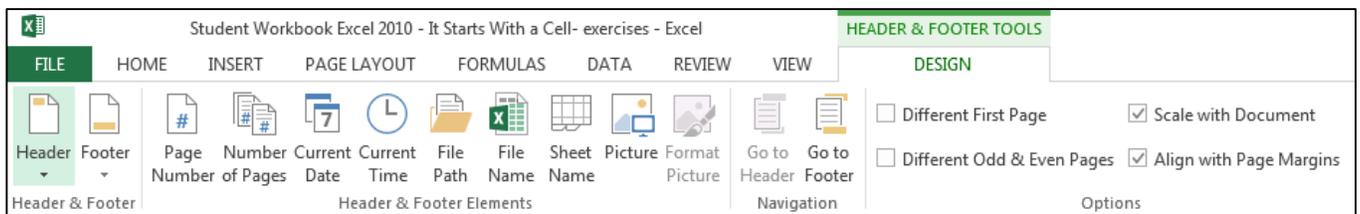
**Tool Tab PivotTables – Analyze: PivotTable, Active Field, Group, Filter, Data, Actions, Calculations, Tools and Show.**



**Tool Tab PivotTables – Design: Layout, PivotTable Style Options, and PivotTable Styles.**



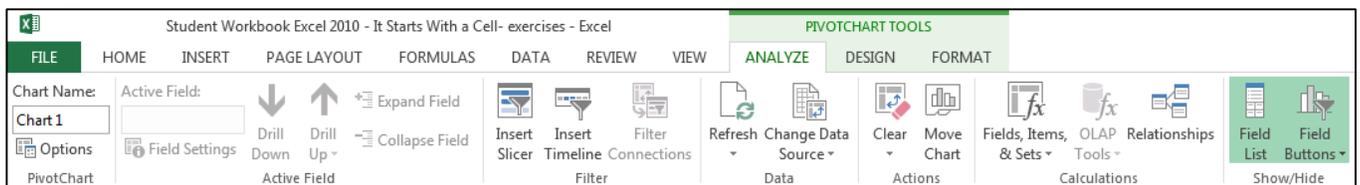
**Tool Tab Header & Footer – Design: Header & Footer, Header & Footer Elements, Navigation and Options.**



**Tool Tab Table – Design: Properties, Tools, External Table Data, Table Style Options and Table Styles.**



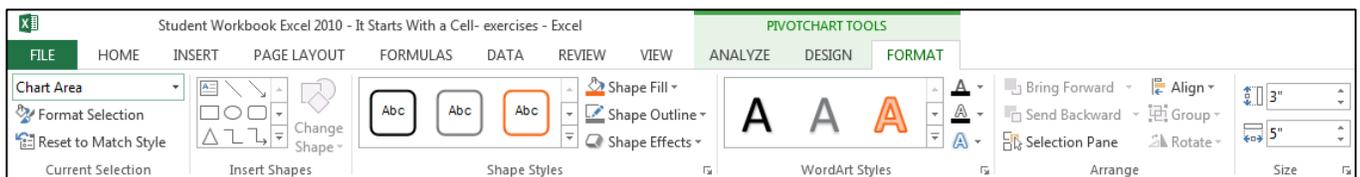
**Tool Tab PivotChart – Analyze: PivotChart, Active Field, Filter, Data, Actions, Calculations, and Show/Hide.**



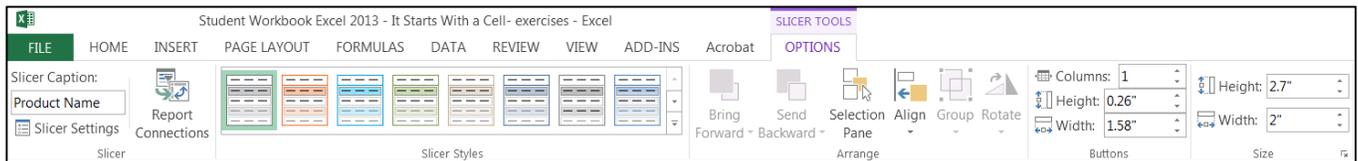
**Tool Tab PivotChart –Design: Chart Layouts, Chart Styles, Data, Type, and Location.**



**Tool Tab PivotChart – Format: Current Selection, Insert Shapes, Shape Styles, WordArt Styles, Arrange and Size.**



### Tool Tab Slicer – Options: Slicer, Slicer Styles, Arrange, Buttons and Size.



### Tool Tab Equation – Design: Tools, Symbols, and Structures.

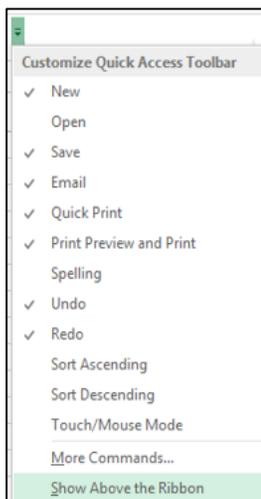


## Quick Access Toolbar

The **Quick Access Toolbar** is intended to be customized by the user to contain the commands they prefer and use most often. By default it displays above the **Ribbon** and contains the commands **Save**, **Undo**, and **Redo** only.

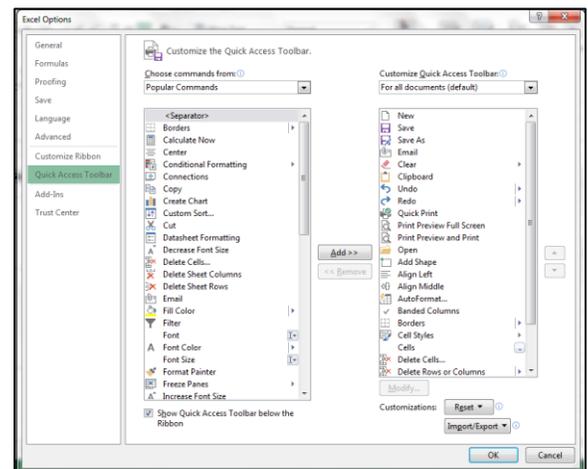


1. To display above or below the **Ribbon**, click the **Customize Quick Access Toolbar drop-down arrow**. A menu displays (shown lower left).
2. Select **Show Above (or Below) the Ribbon**.
3. Customize the toolbar by selecting the desired commands in the **drop-down list** (shown lower left).



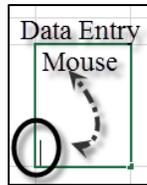
### Adding Additional Commands

1. Click **More Commands**. The *Backstage View: Customize the Quick Access Toolbar* window displays (shown right).
2. Select the command to be added from the **Choose commands from** left command list.
3. Click **Add** and the command will display in the **Customize Quick Access Toolbar** right command list.
4. Use the **up** and **down** arrows to the far right to move items up or down the **Quick Access Toolbar**.
5. Click **OK**.

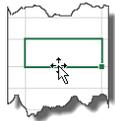


## Excel Mouse Appearances

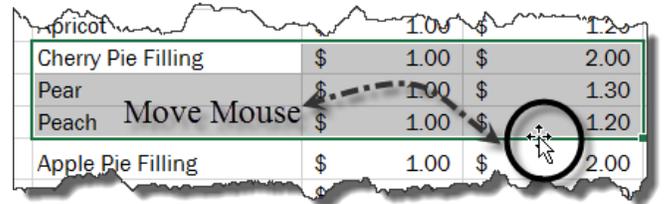
**Data Entry Mouse.** Displays as an “I” bar. Double-click the cursor in the cell and the “I” bar will flash in the cell. Type your content.



**Selection Mouse.** Click on a cell, hold the mouse and drag it down and across to select a range of cells.



**Move Mouse.** Displays when pointing to the border of a selection. Click on the border and drag the mouse to move the selection.



**AutoFill.** Used to copy content of the current cell down the column or across the row. Click on the small square in the bottom right corner of the selected cell, hold the mouse and drag it down or over to fill the selected cells.



*When selecting several columns and rows of data, the selection is called an “array.” If selecting Cells A1 through J30, you are selecting an array of cells as the selection includes multiple rows and multiple columns.*

## Navigating In a Worksheet

### Keystroke Combinations

<b>TAB</b> moves across a row.	<b>Ctrl + ←/→</b> moves to the first or last cell in a row.
<b>SHIFT + TAB</b> moves backwards across a row.	<b>Ctrl + ↑/↓</b> moves to top or bottom of the column.
<b>ENTER</b> moves down a row in a column.	<b>Ctrl + HOME</b> moves to the first cell of data.
<b>SHIFT + ENTER</b> moves up a row in a column.	<b>Ctrl + END</b> moves to the last cell of data.

### Navigating From the Name Box

Use the **Name Box** (displays at the beginning of the Formula bar) to move to any cell in the spreadsheet.



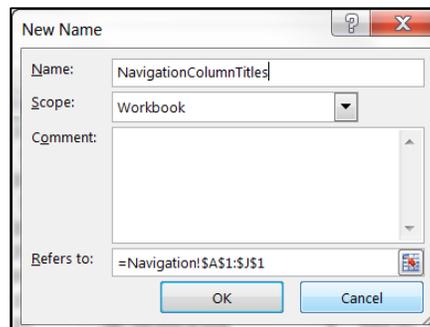
### Navigating using a Cell Reference

1. Type the specific **Cell Reference** (column letter and row number) in the **Name Box**.
2. Press **ENTER**. The cursor moves to that location.

*You can also name a cell or a range of cells to then navigate to that location in the future.*

### Naming a Range of Cells

1. Select the cell range and click **Formulas** | Click **Define Name** or right-click on the selection and click **Define Name** from the Shortcut menu. The *New Name* dialog box displays.
2. Click in the **Name** field and type a **Name** (without spaces). Enter the text of a **Comment** if desired.
3. Click **OK**.

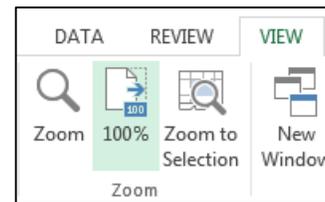


### Navigating using the Named Range

1. Click the drop-down arrow for the **Name box**.
2. Click on the appropriate **Named Range**. Excel navigates to and highlights the range.

## Using Zoom Commands

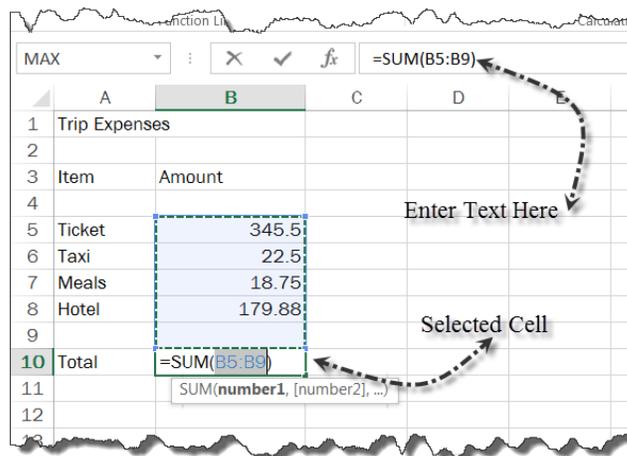
- Click **View Tab | Zoom** to focus the view at a specific percentage from 25% to 200%;
- Select a range of cells and click **Zoom to Selection** to enlarge the view of the selected range; or
- Click **100%** to zoom out from the selection and back to 100% of the document.



## Entering Data

- Select the **cell** by double-clicking into the cell and then type the specific data.
- Press **TAB** to move across the row, **ENTER** to move down the column.
- You can also single click the cell and enter the text into the **Formula Bar** (example shown right).

To add a RETURN in a cell, press **ALT + ENTER**. A new paragraph is placed inside the cell.



## Editing Data

- To replace the text: select the **cell** and type the replacement text.
- To edit the content of a cell: double-click in the cell or select the cell and press **F2**. Excel switches to **Editing** mode and the insertion point appears in the cell.

## Selecting Data to Edit

<p><b>Selecting the Entire Column</b> Click the <b>Column Header Identifier</b> (A, B, C).</p>	<p><b>Selecting the Entire Row</b> Click the <b>Row Header Identifier</b> (1, 2, 3).</p>
<p><b>Selecting the Array of data</b> Click into first cell of data to be selected   press <b>CTRL + SHIFT + END</b>. The cells with data entered will be highlighted.</p>	

## Selection Shortcuts

<b>CTRL + SHIFT + END</b> selects an array of data.	Clicking the <b>Row identifier</b> selects entire row.
<b>CTRL + SHIFT + ↓</b> selects the entire column of data.	Clicking the <b>Column identifier</b> selects entire column.
<b>CTRL + SHIFT + →</b> selects the entire row of data.	

## Undo and Redo Edits

- **Undo** to reverse the last edit and **Redo** to reapply the edit;
- Click the **Undo/Redo buttons** on the **Quick Access Toolbar**;
- Use the shortcuts **Ctrl + Z** to undo / **Ctrl + Y** to redo; or
- Right-click on the data | **Cut, Copy, or Paste**.

## Copying or Moving data

- **Copy and Paste:** Use shortcuts **Ctrl + C** to copy / **Ctrl + V** to paste; right-click | **Copy or Paste**; or click **Home Tab | Copy or Paste**.
- **Cut and Paste:** Use shortcuts **Ctrl + X** to cut/ **Ctrl + V** to paste; right-click | **Cut or Paste**; or click **Home Tab | Cut or Paste**.

## Delete vs. Clear

### Delete

1. **Home Tab | Delete drop-down arrow.** The drop-down list includes options to **Delete Cells**, **Delete Sheet Rows**, **Delete Sheet Columns** or **Delete Worksheet**.
2. **Right-click on cell | Delete.** Excel will prompt with the options to **Shift cells left**, **Shift cells up**, to delete **Entire row** or **Entire column**.

*When you delete a cell, it no longer exists so a formula referencing the deleted cell will return the error #REF!*

### Clear

1. **Right-click on cell | Clear Contents.**

*When you clear a cell, Excel adjusts the value to zero for formulas, therefore, formulas referencing that cell continue to calculate properly.*

2. **Home Tab | Clear drop-down arrow.** The drop-down list includes options to **Clear All**, **Clear Formats**, **Contents**, **Comments**, or **Hyperlinks**.
3. **Delete key** — using the **Delete** key on the keyboard is the same as **Clear Contents**.

## AutoFill

The **AutoFill** allows the user to automatically fill cells with the continuation of a series of numbers, number and text combination, dates, or formulas, based on an established pattern.

1. When you point your cursor to the bottom right corner of a select, the mouse changes to a black cross which is the **AutoFill mouse**.
2. Click and drag from the **AutoFill** down or over to copy the data to the highlighted cells.

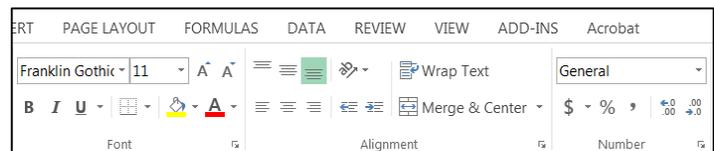


*If the AutoFill is not displaying, click **File Tab | Options | Advanced | Editing Options | Enable Fill handle and cell drag-and-drop | OK**.*

## Formatting Data and Cells

### Formatting Cells using the Home Ribbon

Select the cell(s), click **Home Tab | Font**, **Alignment** and **Number** buttons to make adjustments.



### Formatting Cells using the Format Cells Dialog Box

- Select the cell(s), click **Home Tab | Font Quick Launch**, **Alignment Quick Launch**, or **Number Quick Launch**;



- Select the cell(s), click **Home Tab | Format | Format Cells**; or
- Select the cell(s) and **right-click | Format Cells**.

## Selecting Data to Format

### Selecting the Entire Column

1. Click the **Column Header Identifier** (A, B, C).
2. **Right-click | Format Cells.**

### Selecting the Entire Row

1. Click the **Row Header Identifier** (1, 2, 3).
2. **Right-click | Format Cells.**

### Selecting the Entire Array of Data

1. Click into first cell of data to be formatted | press **CTRL + SHIFT + END**.
2. **Right-click on the selected range | Format Cells.** The *Format Cells* dialog box displays.

*The next section includes a discussion on the various options available through the *Format Cells* dialog box.*

## Format Cells

### Dialog Box Options Number Tab

- Use to format cell contents: **Date, Number, Currency, Percentage, Formula, Text** or **Custom Formatting**.
- Regardless of how the data is typed, the contents will format according to the cell formatting selected.

Default cell formatting is **General**.

### Text vs. Number Formatting

Use **Text** formatting for any set of characters not recognized as a formula, number, date or time.

When a cell is formatted as **Text** the cell data, especially numbers, will display exactly as typed.

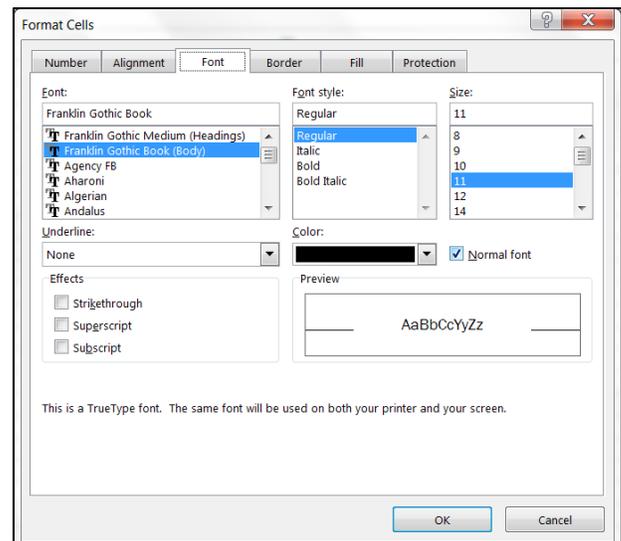
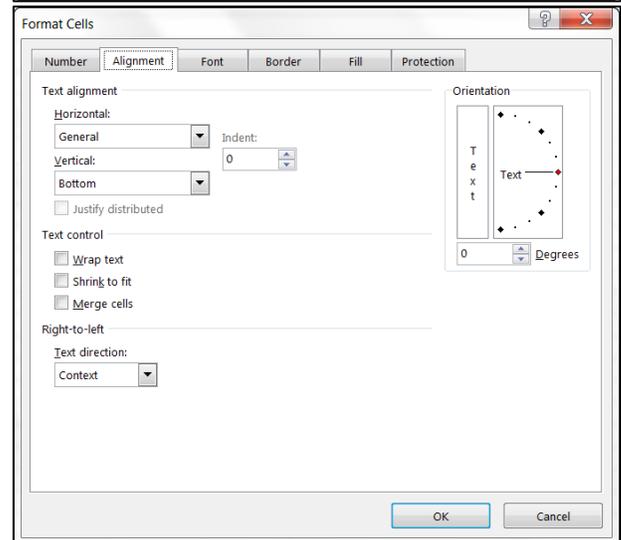
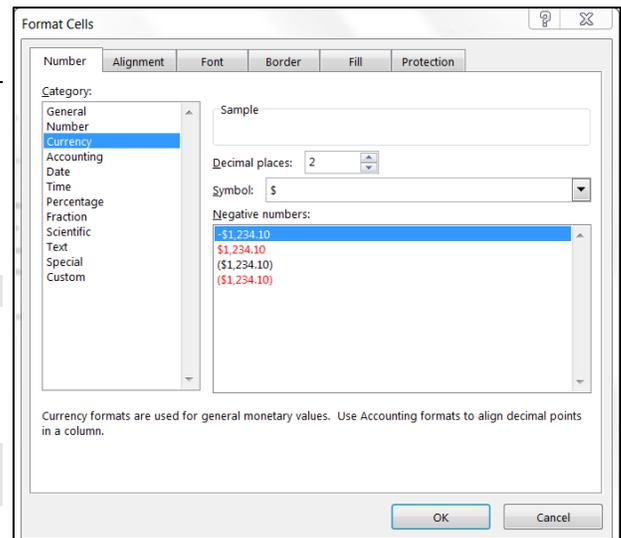
### Alignment Tab

Use to change the position of the cell contents in relationship to the cell itself.

- Select the Text alignment options for Horizontal or Vertical.
- Select the Text control from the options Wrap text in the cell, Shrink to fit or Merge cells.
- Select the Text direction from the options Context, Left to Right or Right to Left.

### Font Tab

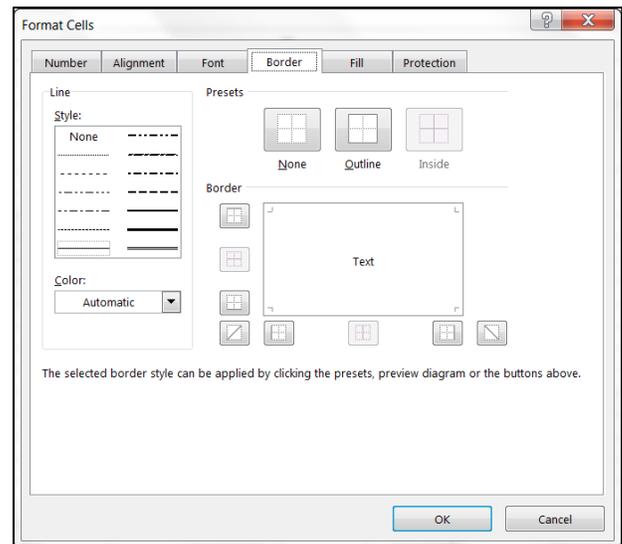
Use to change the font of the cell contents. Select **Font, Font style, Size, Underline, Color, and Effects**.



### ***Border Tab***

Use to apply an outline around the border of the cell.

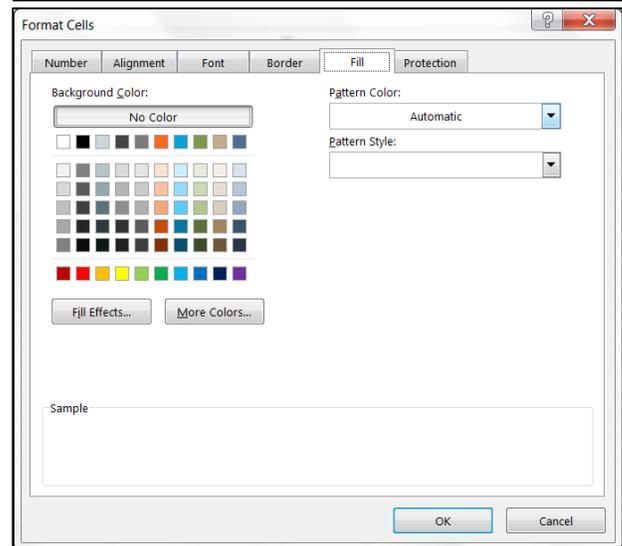
- Select the line **Style** and **Color**, then apply the border by clicking one of the **Border** buttons.
- The preview displays cell **Borders** as you add them.



### ***Fill Tab***

Use to apply a background fill color to the cell.

- Select the **Background Color** from the list provided.
- Click **Fill Effects** to apply an effect to the background.
- Click **More Colors** to select from additional options or create a custom color.
- Use **Pattern Color** and **Pattern Style** to fill the cell with a pattern.



### ***Protection Tab***

Protection allows you to lock cells that contain formulas thereby making the cell read-only. Protection is used when protecting the entire worksheet.

*Protection is discussed in an intermediate Excel 2010 for Windows workshop.*

## **Working With Workbooks**

### ***Creating a New Workbook***

1. Click **File Tab | New**.
2. Double-click to select the template you wish to use.

*The Blank template creates a new workbook with one worksheet.*

3. Or ... click on the **New** button on the **Quick Access Toolbar** or press **Control + N**.

### ***Saving Your Workbook***

1. Click **File Tab | Save As** or **Save**. You can also click **Save** on the **Quick Access Toolbar**.
2. Click **Browse** to select the **Save** location.
3. Navigate to the appropriate folder location, enter a **file name** and click **Save**.

## Working With Worksheets

### Moving Worksheets

1. **Right-click** on the **Sheet Tab** to be moved. A *shortcut menu* displays.
2. Select **Move or Copy**. The *Move or Copy* dialog box displays.
3. Enter the move location workbook in the **To book** field.
4. In the **Before Sheet** list, select the sheet you wish to move before.
5. Click **OK**.

### Adding a Worksheet

- Click  **Insert Worksheet** (at the bottom of the Excel window, to the right of existing sheets);
- Press **Shift + F11**; or
- **Right-click** on a **Sheet Tab** | **Insert** | **Worksheet** | **OK**.

### Deleting a Worksheet

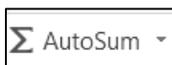
- Click **Home Tab** | **Delete drop-down arrow** | **Delete Sheet**; or
- **Right-click** on the **Sheet Tab** at the bottom of the spreadsheet | **Delete**.

## Working with Formulas

### What is a formula?

- A calculation which returns a value and/or an expression of how a cell is to be calculated in relation to other cells in the workbook.
- Formulas range from basic math – such as addition and subtraction – to complex engineering, programming and statistical calculations.
- Formulas are created by entering the data to be used and the mathematical operators in a particular order.

### Using the AutoSum



1. Click **Home Tab** | **AutoSum** to total a column of numbers above the cursor location or to the left of the cursor location.

*If no numbers are above in the cells in the column, the **AutoSum** will total to the left in the row instead.*

2. The **AutoSum drop-down arrow** displays the most frequently used formulas to include: **Sum**, **Average**, **Count Numbers**, **Max**, and **Min**.
3. To access the **Formula Wizard** click **Home** | **AutoSum Drop-down-arrow** | **More Functions**.

### Copying Worksheets

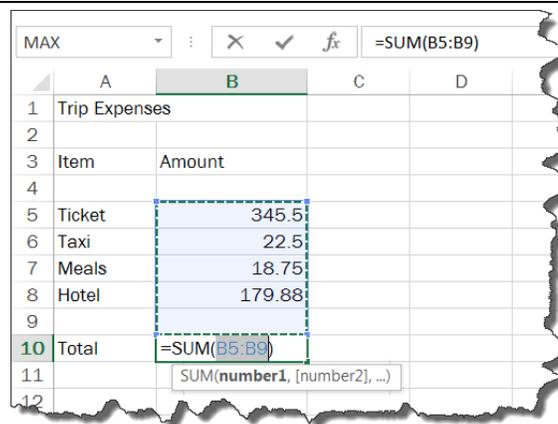
1. **Right-click** on the **Sheet Tab** to be moved. A *shortcut menu* displays.
2. Select **Move or Copy**. The *Move or Copy* dialog box displays.
3. Enter the move location workbook in the **To book** field. In the **Before Sheet** list, select the sheet you wish to place the copy before.
4. Select the **Create a copy** checkbox and click **OK**.

### Adding Columns or Rows to a Worksheet

- In the existing spreadsheet, select the number of columns or rows you would like to insert before your cursor location | **right click** | **Insert**; or
- Click in a cell | click **Home Tab** | **Insert drop-down arrow** | **Insert Sheet Rows** or **Insert Sheet Columns**.

### Renaming Worksheets

1. **Right-click** on the **Sheet Tab** | **Rename**.
2. Type the new name | press **ENTER**.



	A	B	C	D
1	Trip Expenses			
2				
3	Item	Amount		
4				
5	Ticket	345.5		
6	Taxi	22.5		
7	Meals	18.75		
8	Hotel	179.88		
9				
10	Total	=SUM(B5:B9)		
11				
12				

## Building Simple Formulas

- All formulas begin with the **Equal (=)** sign.
- Simple formulas use the following **Operators**:

For Addition: the <b>Plus</b> sign (+)	For Subtraction: the <b>Minus</b> sign (-)
For Multiplication: the <b>Asterisk</b> (*)	For Division: the <b>Forward Slash</b> (/)

## Order of Precedence

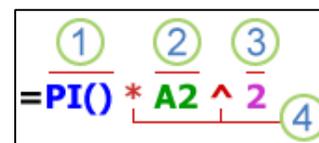
The order in which a calculation is executed affects the result of the calculation. It is important to understand how formulas are calculated and how changing the order obtains different results. When combining several operators in a single formula, Excel performs multiplication or division before addition or subtraction. If a formula contains operators with the same precedence, for example, if a formula contains both an addition and a subtraction operator, Excel evaluates the operators from left to right.

First: <b>Parentheses</b> and other grouping symbols.	= 4 - (2 + 1) result is 1
Second: <b>Exponents</b> (also called powers).	=POWER(4,2) result is 16 (4*4)
Third: <b>Multiplication</b> and <b>Division</b> from left to right.	= 4 / 2 * 3 result is 6
Fourth: <b>Addition</b> and <b>Subtraction</b> from left to right.	= 4 - 2 + 1 result is 3

## Parts of a Formula

The formula shown right contains:

**Equal sign(=)**. The first character in a formula is always an **Equal sign (=)**.



1	<b>Functions:</b> a pre-written formula that performs an operation on a value or values and returns a result or results. Use <b>Functions</b> to simplify formulas, especially those that perform complicated calculations.	The <b>PI()</b> Function returns the value of pi: 3.142...
2	<b>References:</b> a combination of the <b>Column Letter</b> identifier and the <b>Row Number</b> identifier returns the value of the identified cell.	<b>A2</b> returns data in cell <b>A2</b> .
3	<b>Constants:</b> a value that is not calculated and, therefore, does not change. The number <b>\$6,435</b> and the text <b>"Monthly Gross Income"</b> are <b>Constants</b> .	Values entered directly in a formula, such as <b>2</b> .
4	<b>Operators:</b> a sign or symbol that Excel assigns to a type of calculation. There are <b>Financial, Logical, Text, Date &amp; Time, References, Mathematical,</b> and <b>Comparison Operators</b> .	<b>^</b> (caret) raises to a power <b>*</b> (asterisk) multiplies

## Creating Formulas Using the Insert Function Wizard



The **Function Wizard** includes a comprehensive list of formulas for various types of calculations including math, trig, statistics, finance, logic, and data management.

- Click into the cell then click **Insert Function** on the Formula bar. The *Insert Function* dialog box displays (shown right).
  - In the **Search for a function** field, type the name of the **Function** you wish to calculate. Click **Go**; or
  - In the **Or select a category** field, click the **drop-down arrow** and **select a category** for the functions.
  - In the **Select a function** list box, select the desired **Function**. Click **OK**. The *Function Arguments* dialog box displays prompting you to enter the cells to be included in the formula.
- Enter the appropriate data for the selected **Function**. Click **OK**.

