



# Microsoft Excel 2010 Training



# What is Microsoft Excel?

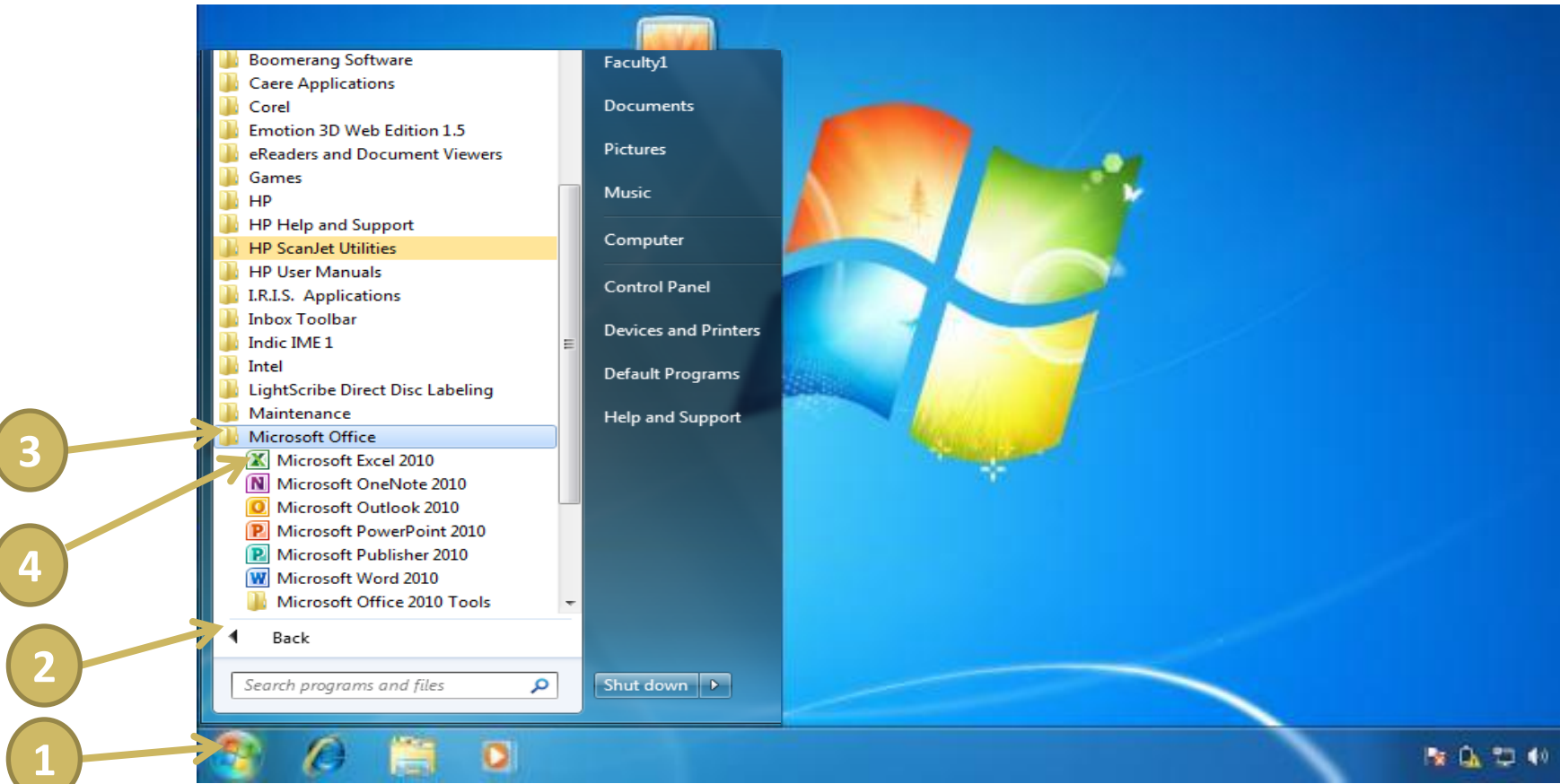
Excel is a powerful spreadsheet program that allows users to organize data, complete calculations, make decision, graph data and develop professional-looking reports.



Excel file Extension is .xlsx



- Click on the **Start** button, and then click **All Programs**.
- Click on **Microsoft Office** and click on **Microsoft Excel 2010**.





Main Menu

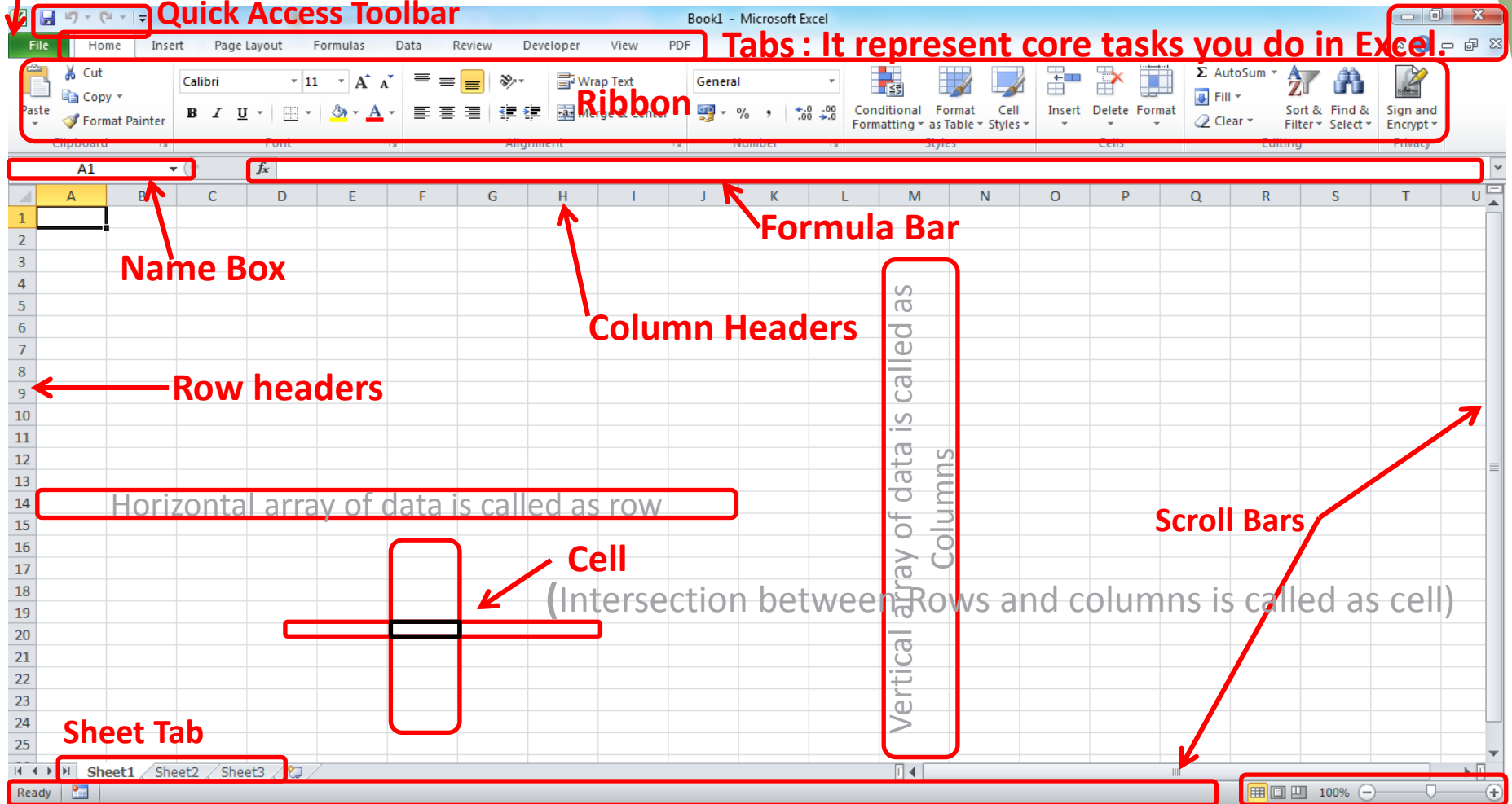
# Office Environment in Excel

Window controls and help

Quick Access Toolbar

Tabs: It represent core tasks you do in Excel.

Ribbon



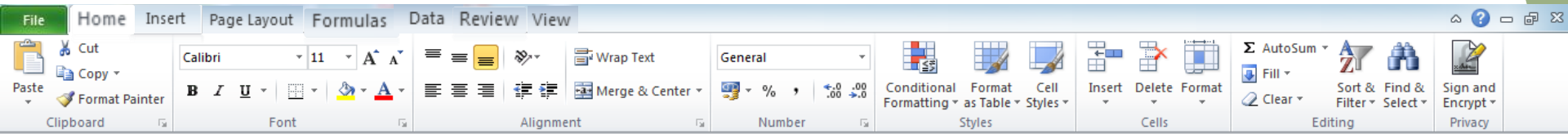
Status Bar

View options and Zoom control

Note! Notice that you can add icons to the Quick Access Toolbar. You can also add custom tabs to the Ribbon.



# Excel 2010 Tabs

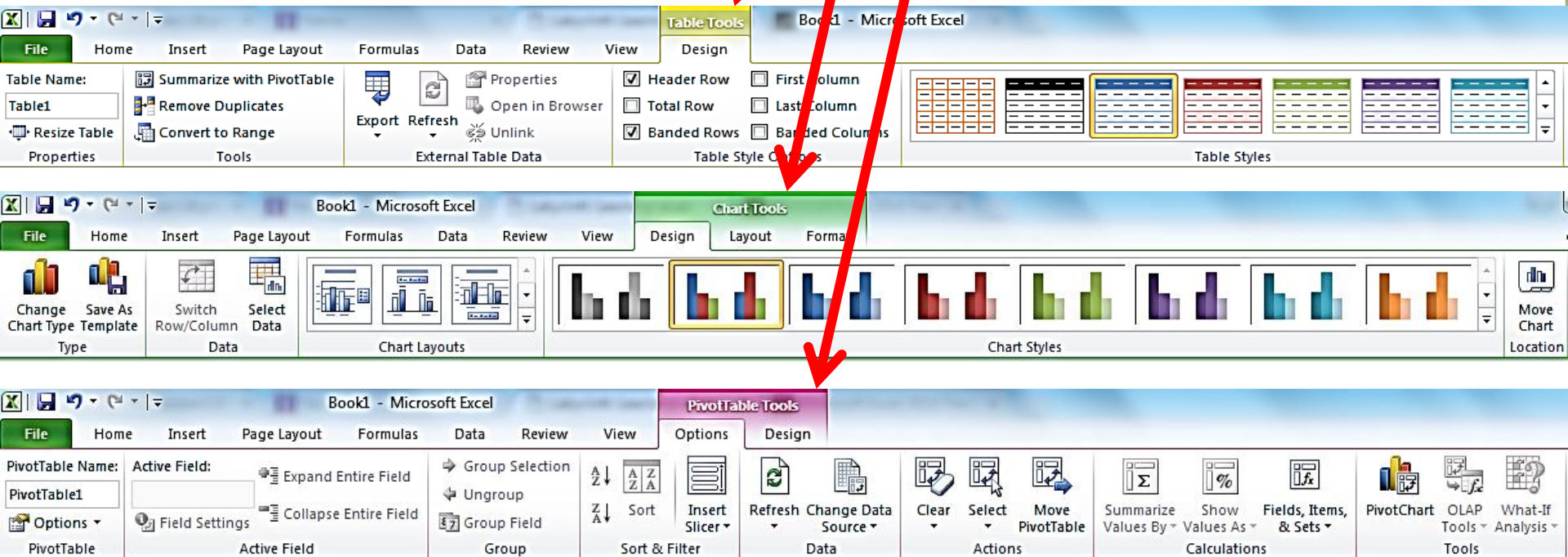


- **File** - Perform file management tasks, Choose options to control how you work with Excel
- **Home** - Common tools
- **Insert** - Insert objects
- **Page Layout** – Print settings
- **Formulas** – Functions in categories
- **Data** - Working with data
- **Review** - Spelling, Protecting, Sharing
- **View** - How Excel appears on screen  
(Does not affect printing)



# Contextual Tabs







**Contextual Tabs appear in context with the task being performed**

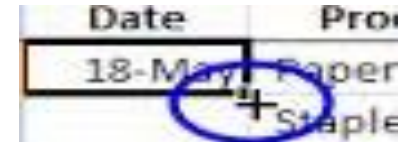




# Mouse Pointers in Excel



|   |  |
|---|--|
|    | Used for selecting cells   |
|    | The I-beam - indicates that you may type text in this area.                                      |
|    | The fill handle - used for copying formula or extending a data series.                           |
|    | Used to select a whole row/column when positioned on the row number or column letter.            |
|   | Appears at the border of the column letters. Drag to widen or narrow the width of a column.      |
|  | Appears at the border between the row numbers. Drag to increase or decrease the height of a row. |





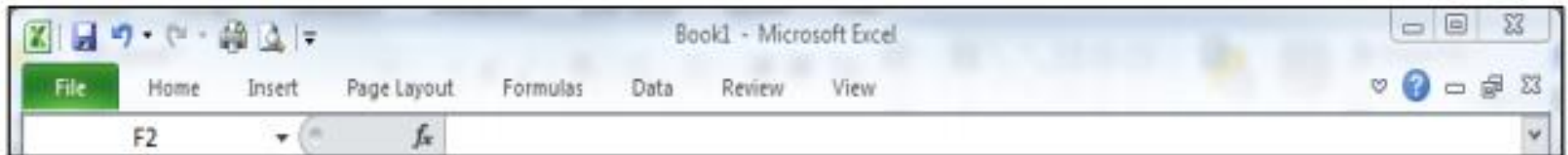


# Hide the Ribbon

- Create more room on the screen to work



Expanded view



Collapsed view



# Excel 2010 information

- ❖ Available Columns:  
A - XFD → 16,384 columns
- ❖ Available Rows:  
1 - 1,048,576
- ❖ **There are over 17 billion cells in each worksheet!!!!**
- ❖ There are more than 400 formulas divided in 11 category.



# Working with Columns and Rows

- To make data easier to read:
  - Modify size of columns and rows in a worksheet
- To modify size of columns or rows:
  - Drag border to resize
  - Double-click border to autofit
  - Format the Cells group to specify



# Working with Columns and Rows

- Column width
  - Expressed in terms of number of characters or **pixels** (8.43 characters equals 64 pixels)
  - Note: Pixel size is based on screen resolution
- Row height
  - Measured in **points** (1/72 of an inch) or pixels
  - Default row height: 15 points or 20 pixels



# Working with Cells and Ranges

- **Range reference** indicates location and size of a cell range
  - Adjacent (A1:G5)
  - Nonadjacent (A1:A5;F1:G5)
- Selecting a range
  - Work with all cells in the range as a group
- Moving and copying a range
  - Drag and drop
  - Cut and paste



# Working with Cells and Ranges

## Adjacent (A1:G5)

|    | A  | B  | C  | D  | E  | F  | G  | H  | I  |
|----|----|----|----|----|----|----|----|----|----|
| 1  | 48 | 42 | 30 | 12 | 39 | 48 | 41 | 44 | 39 |
| 2  | 43 | 8  | 16 | 11 | 43 | 43 | 21 | 4  | 6  |
| 3  | 37 | 10 | 49 | 19 | 42 | 30 | 26 | 34 | 18 |
| 4  | 26 | 48 | 45 | 1  | 42 | 43 | 37 | 17 | 37 |
| 5  | 16 | 42 | 31 | 9  | 44 | 45 | 29 | 41 | 15 |
| 6  | 20 | 43 | 6  | 32 | 38 | 9  | 16 | 28 | 12 |
| 7  | 26 | 28 | 40 | 28 | 28 | 32 | 26 | 18 | 33 |
| 8  | 43 | 50 | 11 | 34 | 21 | 4  | 13 | 19 | 16 |
| 9  | 14 | 18 | 23 | 26 | 6  | 14 | 17 | 45 | 8  |
| 10 | 50 | 32 | 40 | 17 | 39 | 42 | 50 | 3  | 15 |
| 11 | 4  | 27 | 33 | 29 | 50 | 35 | 37 | 15 | 36 |
| 12 | 48 | 25 | 4  | 22 | 40 | 40 | 13 | 43 | 32 |

## Nonadjacent (A1:A5;F1:G5)

|    | A  | B  | C  | D  | E  | F  | G  | H  | I  |
|----|----|----|----|----|----|----|----|----|----|
| 1  | 48 | 42 | 30 | 12 | 39 | 48 | 41 | 44 | 39 |
| 2  | 43 | 8  | 16 | 11 | 43 | 43 | 21 | 4  | 6  |
| 3  | 37 | 10 | 49 | 19 | 42 | 30 | 26 | 34 | 18 |
| 4  | 26 | 48 | 45 | 1  | 42 | 43 | 37 | 17 | 37 |
| 5  | 16 | 42 | 31 | 9  | 44 | 45 | 29 | 41 | 15 |
| 6  | 20 | 43 | 6  | 32 | 38 | 9  | 16 | 28 | 12 |
| 7  | 26 | 28 | 40 | 28 | 28 | 32 | 26 | 18 | 33 |
| 8  | 43 | 50 | 11 | 34 | 21 | 4  | 13 | 19 | 16 |
| 9  | 14 | 18 | 23 | 26 | 6  | 14 | 17 | 45 | 8  |
| 10 | 50 | 32 | 40 | 17 | 39 | 42 | 50 | 3  | 15 |



# Exploring the Parts of the Workbook

- Each workbook contains three worksheets by default. The worksheet displayed in the work area is the active worksheet.
- **Columns** appear vertically and are identified by letters. **Rows** appear horizontally and are identified by numbers.
- A **cell** is the intersection of a row and a column. Each cell is identified by a unique **cell reference**.



## Exploring the Parts of the Workbook (continued)

- The cell in the worksheet in which you can type data is called the **active cell**.
- The **Name Box**, or cell reference area, displays the cell reference of the active cell.
- The **Formula Bar** displays a formula when a worksheet cell contains a calculated value.
- A **formula** is an equation that calculates a new value from values currently in a worksheet.





# Moving the Active Cell in a Worksheet

- Keys for moving the active cell in a worksheet

| TO MOVE  | PRESS           |
|--|-----------------|
| Left one column  | Left arrow key  |
| Right one column   | Right arrow key |
| Up one row   | Up arrow key    |
| Down one row   | Down arrow key  |
| To the first cell of a row                               | Home key        |
| To cell A1   | Ctrl+Home keys  |
| To the last cell of the column and row that contain data | Ctrl+End keys   |
| Up one window  | Page Up key     |
| Down one window  | Page Down key   |



# Worksheet Navigation Keys

| <b>Press</b>                 | <b>To move the active cell</b>                       |
|------------------------------|--|
| ↑ ↓ ← →                      | Up, down, left, or right one cell                    |
| Home                         | To column A of the current row                       |
| Ctrl+Home                    | To cell A1   |
| Ctrl+End                     | To the last cell in the worksheet that contains data |
| Enter                        | Down one row or to the start of the next row of data |
| Shift+Enter                  | Up one row   |
| Tab                          | One column to the right                              |
| Shift+Tab                    | One column to the left                               |
| Page Up, Page Down           | Up or down one screen                                |
| Ctrl+Page Up, Ctrl+Page Down | To the previous or next sheet in the workbook        |



# Complex formulas defined

- Simple formulas have **one** mathematical operation. **Complex formulas** involve **more than one** mathematical operation.
- **Simple formula:**  $=2+2$   
**Complex formula:**  $=2+2*8$
- To calculate complex formulas correctly, you must perform certain operations before others. This is defined in the **order of operations**.



# The order of operations

- The order of mathematical operations is important. If you enter a formula that contains several operations, Excel knows to work those operations in a specific order. The **order of operations** is:
  - Operations enclosed in parenthesis
  - Exponential calculations (to the power of)
  - Multiplication and division, whichever comes first
  - Addition and subtraction, whichever comes first
- Its referred as PEDMAS
- To remember this is
  - **Please Excuse My Dear Aunt Sally** (P.E.M.D.A.S).



# The order of operations

Example :1

Using this order, let's see how the formula  $20/(8-4)*8-2$  is calculated in the following breakdown:

$$20/(8-4)*8-2$$



Perform the operations in parentheses first:  $8-4=4$

Formula becomes

$$20/4*8-2$$



Because the division comes before the multiplication, divide  $20/4=5$

Formula becomes

$$5*8-2$$



Next the multiplication takes place before the subtraction:  $5*8=40$

Formula becomes

$$40-2$$



Finally,  $40-2=38$

The final answer is 38



# The order of operations

|   |   |   |   |
|---|---|---|---|
| <b><u>P</u>lease</b>                                      | <b><u>E</u>xcuse</b>  | <b><u>M</u>y <u>D</u>ear</b>                      | <b><u>A</u>unt <u>S</u>ally</b>               |
| <b><u>P</u>arentheses</b>                                 | <b><u>E</u>xponents</b>                                     | <b><u>M</u>ultiply or <u>D</u>ivide</b>           | <b><u>A</u>dd or <u>S</u>ubtract</b>          |
| Operations inside of parentheses () are done <b>first</b> | Exponential calculations are <b>second</b> , like $5^{3rd}$ | Multiplication and Division are done <b>third</b> | Addition and subtraction are done <b>last</b> |



# Workbooks and Worksheets

- ❖ Each Excel file is a Workbook containing one or more Worksheets
  - ❖ Default setting provides you with three worksheets - you can add or remove as needed from there (Insert sheet : shift F11)
    - ❖ Worksheets can also be reordered within the file and renamed - you can also copy or move a worksheet to another workbook (file.)
- ❖ Several sheets can be used for one project, containing it all in one file, or you can still use one file for each part of a project, depending on your needs.



# Rows and Columns

Following actions can be done on rows and columns:

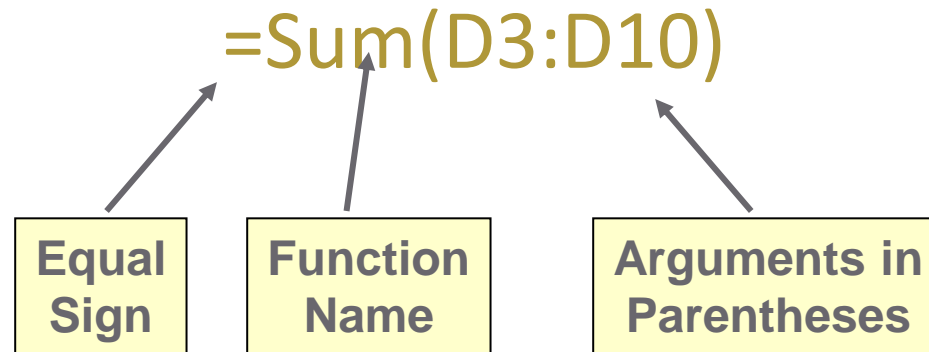
1. Insert / Delete (ctrl shift + + / ctrl -)
2. Hide / Unhide :Rows - (ctrl 9/ ctrl shift 9) Columns – (ctrl 0 / ctrl shift 0)
3. Adjust Column Width / Row Height
4. Fill Color
5. Border





# Functions-Prewritten Formulas

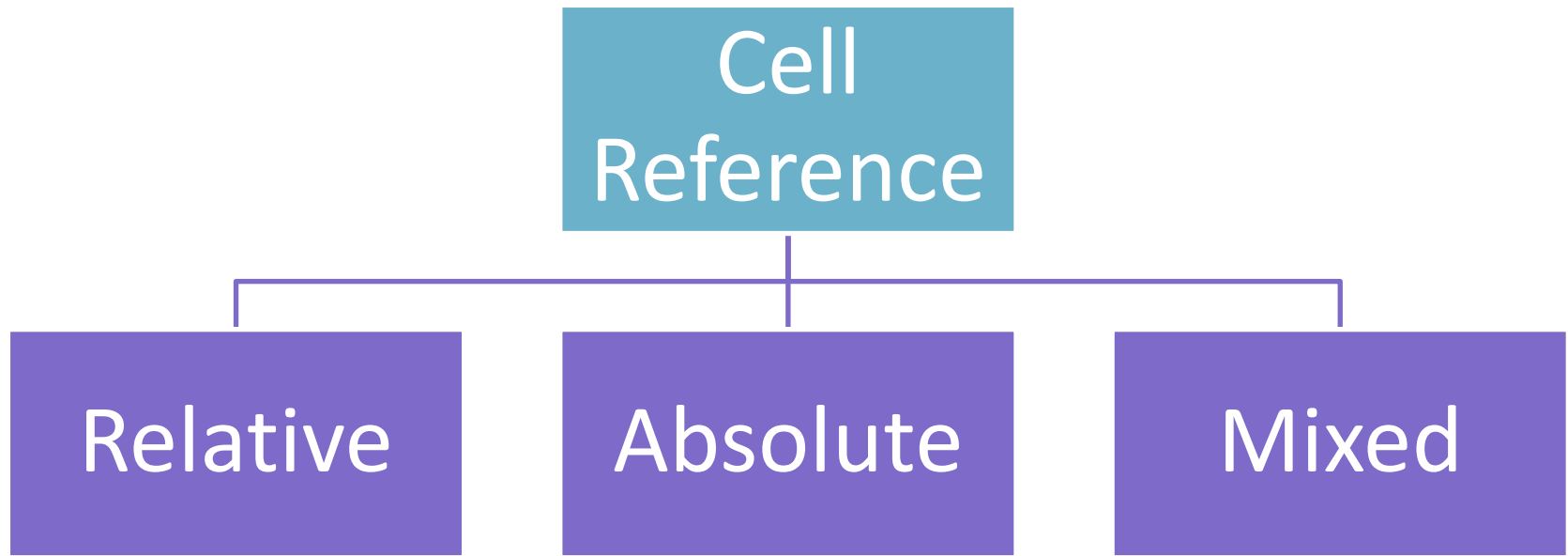
- A **Function** takes a value or values, computes a statistic, and returns a result to a cell.
- All functions start with an equal sign, and include **Arguments** in parentheses after the function name.





# Cell References

- Usage of cell address in formula is referred as cell referencing





# Relative ,Absolute and Mixed Cell Referencing

- **Relative cell reference** : It is when we drag the cell and the address changes accordingly in the formula.

E.g. C4 – C5 - C6 etc.

- **Absolute cell reference**: It is used when we want the value to be constant while we drag the formula.

E.g. \$C\$4

- **Mixed Cell Reference**: It is the combination of absolute and relative cell reference in a formula

E.g. – C\$4 and \$C4

# Error Values in Excel



| Error Value | Meaning   | Causes  |
|-------------|---|---|
| #DIV/0      | Division by zero  | The division operation in your formula refers to a cell that contains the value 0 or is <i>blank</i> .  |
| #N/A        | No value available  | Technically, this is not an error value but a special value that you can manually enter into a cell to indicate that you don't yet have a necessary value.                |
| #NAME?      | Excel doesn't recognize a name  | This error value appears when you incorrectly type the range name, refer to a deleted range name, or forget to put quotation marks around a text string in a formula.     |
| #NULL!      | You specified an intersection of two cell ranges whose cells don't actually intersect | Because a space indicates an intersection, this error will occur if you insert a space instead of a comma (the union operator) between ranges used in function arguments. |
| #NUM!       | Problem with a number in the formula  | This error can be caused by an invalid argument in an Excel function or a formula that produces a number too large or too small to be represented in the worksheet.       |
| #REF!       | Invalid cell reference  | This error occurs when you delete a cell referred to in the formula or if you paste cells over the ones referred to in the formula.                                       |
| #VALUE!     | Wrong type of argument in a function or wrong type of operator                        | This error is most often the result of specifying a mathematical operation with one or more cells that contain text.  |



## Backstage View

The File menu in Excel 2010 opens what is known as Backstage view. This is where you can manage your files (open, save, print, find info, etc.) and set program options (formerly accessed through Tool/Options).



# Creating a new Workbook

- ❖ When you start Excel, you'll see a new blank workbook (Book1). You can begin typing in that workbook or choose to create a new workbook.
- ❖ To create a new workbook, go to File/New then click Create (under Blank workbook on right side of screen)

