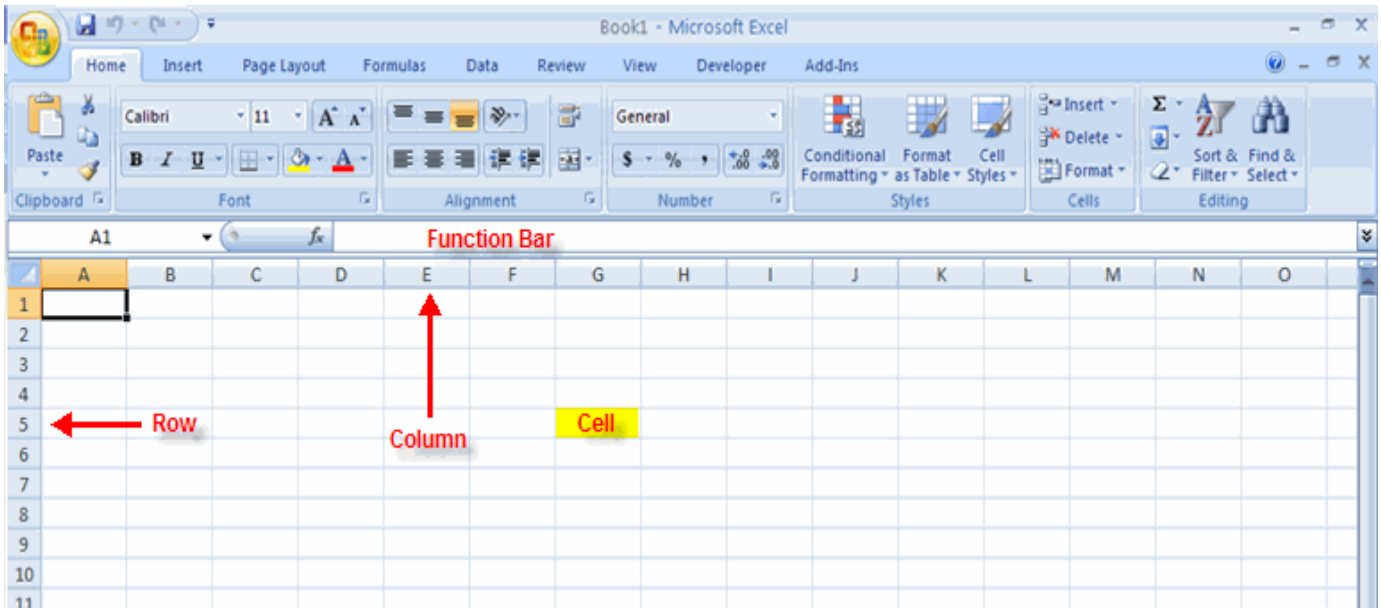
Getting started

With Excel 2007 you will notice that there are many similar features to previous versions. You will also notice that there are many new features that you'll be able to utilize. There are three features that you should remember as you work within Excel 2007: the Microsoft Office Button, the Quick Access Toolbar, and the Ribbon. The function of these features will be more fully explored below.



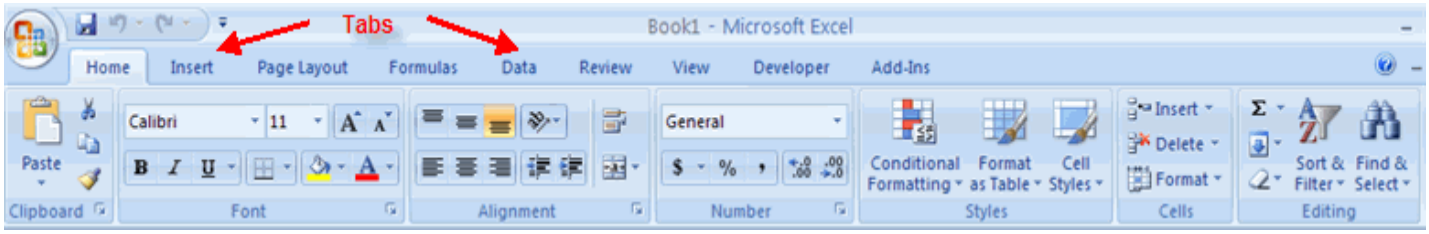
Spreadsheets

A spreadsheet is an electronic document that stores various types of data. There are vertical columns and horizontal rows. A cell is where the column and row intersect. A cell can contain data and can be used in calculations of data within the spreadsheet. An Excel spreadsheet can contain workbooks and worksheets. The workbook is the holder for related worksheets.

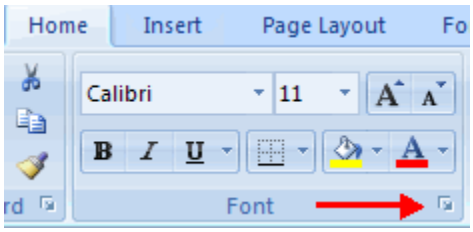
Microsoft Office Button

The Microsoft Office Button performs many of the functions that were located in the File menu of older versions of Excel. This button allows you to create a new workbook, Open an existing workbook, save and save as, print, send, or close.

Ribbon
The ribbon is the panel at the top portion of the document It has seven tabs: Home, Insert, Page Layouts, Formulas, Data, Review, and View. Each tab is divided into groups. The groups are logical collections of features designed to perform function that you will utilize in developing or editing your Excel spreadsheets.

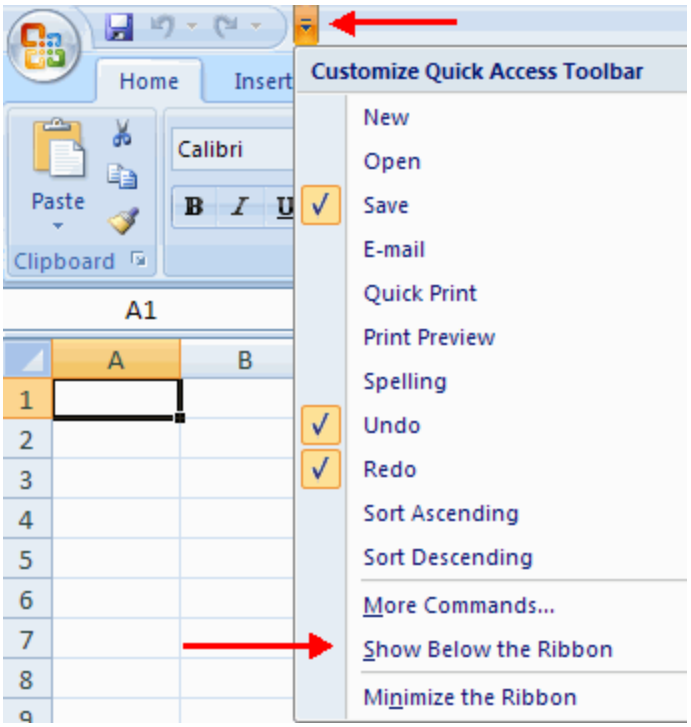


Commonly utilized features are displayed on the Ribbon. To view additional features within each group, click the arrow at the bottom right corner of each group.

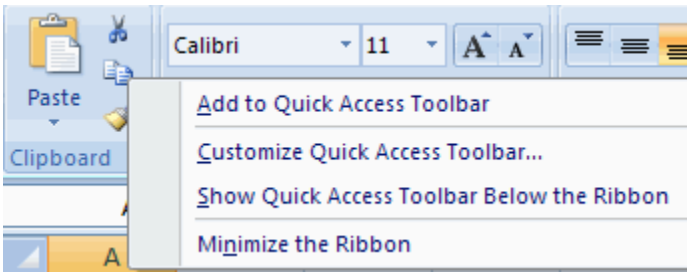


Home: Clipboard, Fonts, Alignment, Number, Styles, Cells, Editing
Insert: Tables, Illustrations, Charts, Links, Text
Page Layouts: Themes, Page Setup, Scale to Fit, Sheet Options, Arrange
Formulas: Function Library, Defined Names, Formula Auditing, Calculation
Data: Get External Data, Connections, Sort & Filter, Data Tools, Outline
Review: Proofing, Comments, Changes
View: Workbook Views, Show/Hide, Zoom, Window, Macros

Quick Access Toolbar
The **quick access toolbar** is a customizable toolbar that contains commands that you may want to use. You can place the quick access toolbar above or below the ribbon. To change the location of the quick access toolbar, click on the error at the end of the toolbar and click **Show Below the Ribbon**.

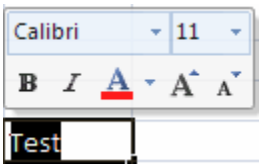


You can also add items to the quick access toolbar. Right click on any item in the Office Button or the Ribbon and click Add to Quick Access Toolbar and a shortcut will be added.



Mini Toolbar

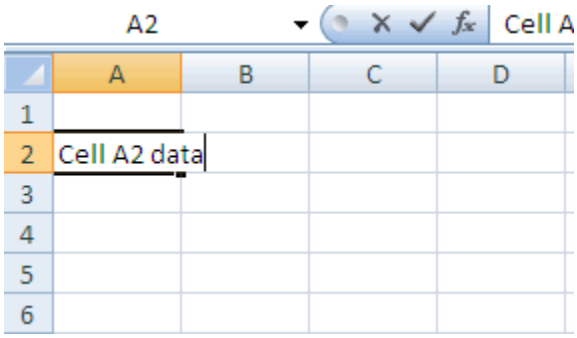
A new feature in Office 2007 is the Mini Toolbar. This is a floating toolbar that is displayed when you select text or right-click text. It displays common formatting tools, such as Bold, Italics, Fonts, Font Size and Font Color.



Entering Data

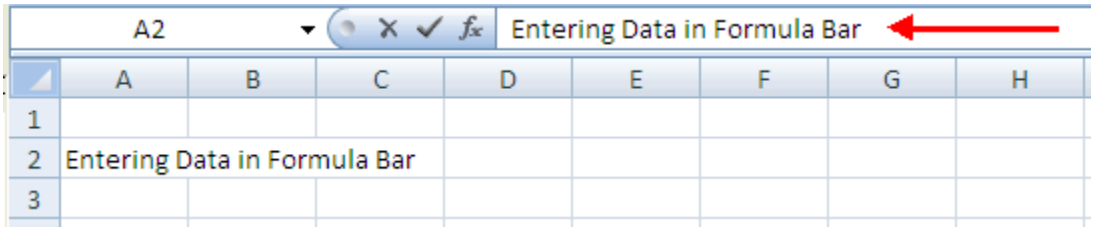
There are different ways to enter data in Excel: in an active cell or in the formula bar.
To enter data in an active cell:

- Click in the **cell** where you want the data
- Begin typing



To enter data into the **formula bar**

- Click the cell where you would like the data
- Place the cursor in the **Formula Bar**
- Type in the data

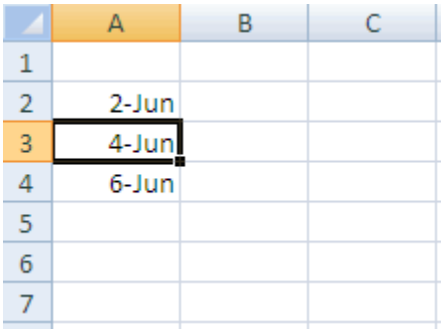


Manipulating Data

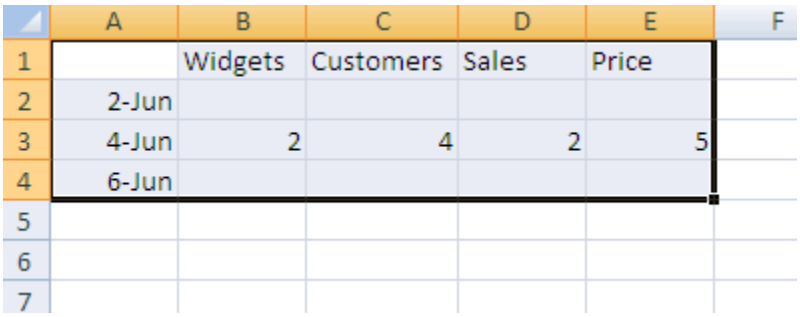
Excel allows you to move, copy, and paste cells and cell content through cutting and pasting and copying and pasting.

Select Data
To select a cell or data to be copied or cut:

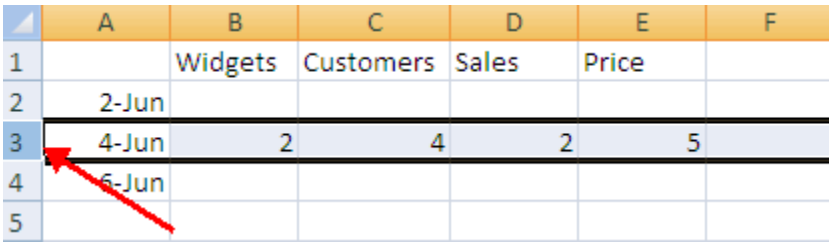
- Click the **cell**



- Click and drag the cursor to select many cells in a range

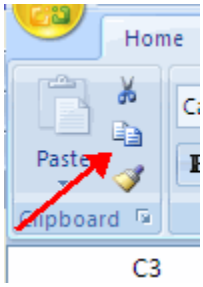


Select a Row or Column
To select a row or column click on the **row** or **column header**.

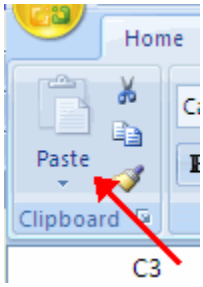


Copy and Paste
To copy and paste data:

- Select the cell(s) that you wish to copy
- On the **Clipboard** group of the **Home** tab, click **Copy**

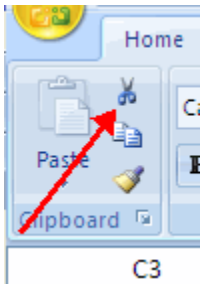


- Select the cell(s) where you would like to copy the data
- On the **Clipboard** group of the **Home** tab, click **Paste**



Cut and Paste
To cut and paste data:

- Select the cell(s) that you wish to copy
- On the **Clipboard** group of the **Home** tab, click **Cut**



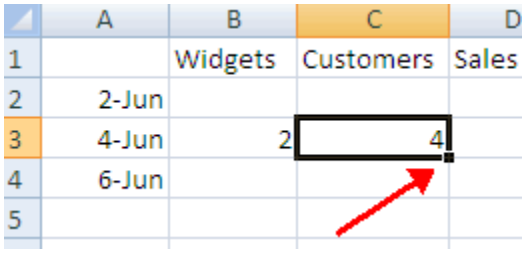
- Select the cell(s) where you would like to copy the data
- On the **Clipboard** group of the **Home** tab, click **Paste**

Undo and Redo
To undo or redo your most recent actions:

- On the **Quick Access Toolbar**
- Click **Undo** or **Redo**

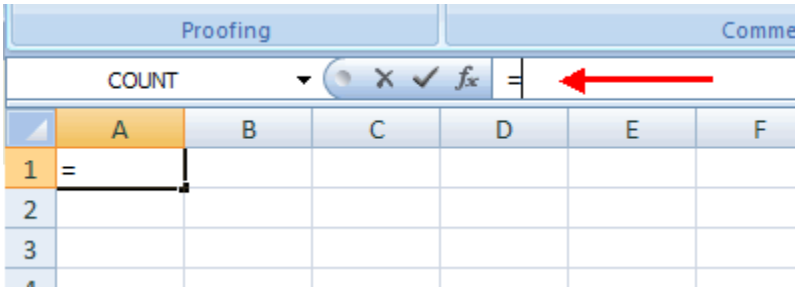
Auto Fill
The Auto Fill feature fills cell data or series of data in a worksheet into a selected range of cells. If you want the same data copied into the other cells, you only need to complete one cell. If you want to have a series of data (for example, days of the week) fill in the first two cells in the series and then use the auto fill feature. To use the Auto Fill feature:

- **Click** the **Fill Handle**
- **Drag** the **Fill Handle** to complete the cells



Excel Formulas

A formula is a set of mathematical instructions that can be used in Excel to perform calculations. Formals are started in the formula box with an = sign.

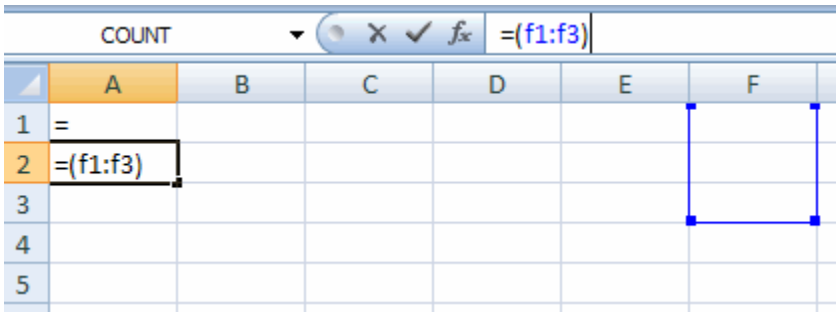


There are many elements to and excel formula.

References: The cell or range of cells that you want to use in your calculation
Operators: Symbols (+, -, *, /, etc.) that specify the calculation to be performed
Constants: Numbers or text values that do not change
Functions: Predefined formulas in Excel

To create a basic formula in Excel:

- Select the **cell** for the formula
- Type = (the equal sign) and the **formula**
- Click **Enter**

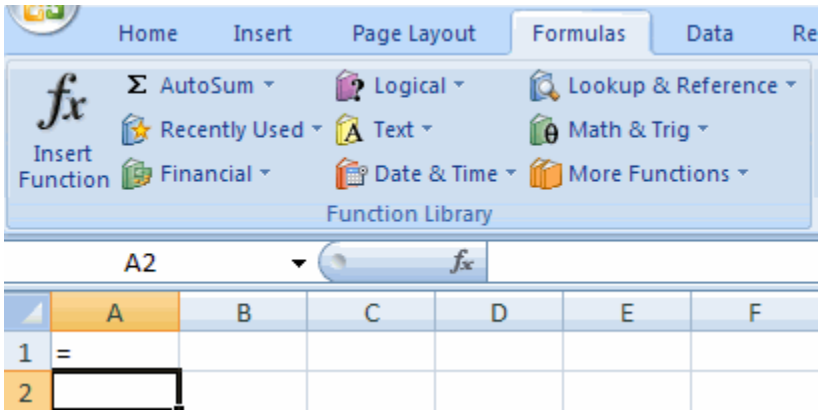


Calculate with Functions
A function is a built in formula in Excel. A function has a name and arguments (the mathematical function) in parentheses. Common functions in Excel:

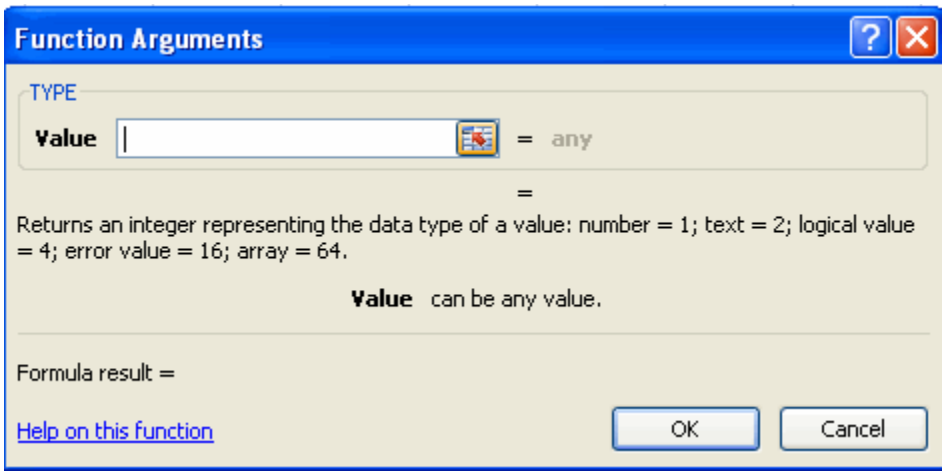
Sum: Adds all cells in the argument
Average: Calculates the average of the cells in the argument
Min: Finds the minimum value
Max: Finds the maximum value
Count: Finds the number of cells that contain a numerical value within a range of the argument

To calculate a function:

- Click the **cell** where you want the function applied
- Click the **Insert Function** button
- Choose the function
- Click **OK**

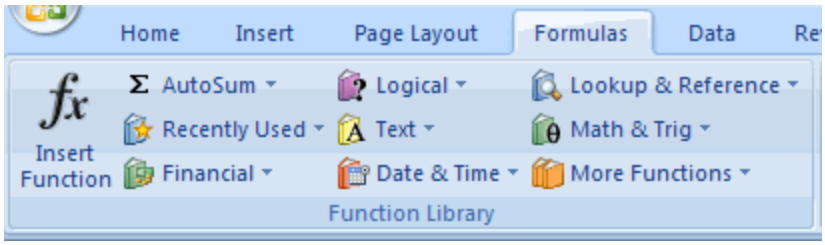


- Complete the Number 1 box with the first cell in the range that you want calculated
- Complete the Number 2 box with the last cell in the range that you want calculated



Function Library
The function library is a large group of functions on the Formula Tab of the Ribbon. These functions include:

AutoSum: Easily calculates the sum of a range
Recently Used: All recently used functions
Financial: Accrued interest, cash flow return rates and additional financial functions
Logical: And, If, True, False, etc.
Text: Text based functions
Date & Time: Functions calculated on date and time
Math & Trig: Mathematical Functions



Relative, Absolute and Mixed References

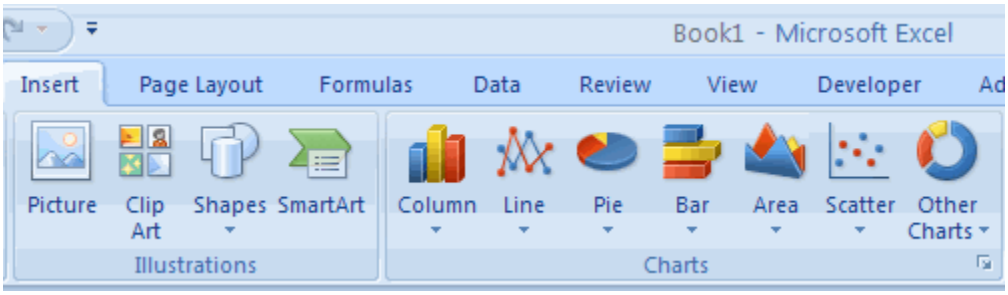
Calling cells by just their column and row labels (such as "A1") is called **relative referencing**. When a formula contains relative referencing and it is copied from one cell to another, Excel does not create an exact copy of the formula. It will change cell addresses relative to the row and column they are moved to. For example, if a simple addition formula in cell C1 "=(A1+B1)" is copied to cell C2, the formula would change to "=(A2+B2)" to reflect the new row. To prevent this change, cells must be called by **absolute referencing** and this is accomplished by placing dollar signs "$" within the cell addresses in the formula. Continuing the previous example, the formula in cell C1 would read "=(A1+B1)" if the value of cell C2 should be the sum of cells A1 and B1. Both the column and row of both cells are absolute and will not change when copied. **Mixed referencing** can also be used where only the row OR column fixed. For example, in the formula "=(A$1+$B2)", the row of cell A1 is fixed and the column of cell B2 is fixed.

Create a Chart

Charts allow you to present information contained in the worksheet in a graphic format. Excel offers many types of charts including: Column, Line, Pie, Bar, Area, Scatter and more. To view the charts available click the Insert Tab on the Ribbon.

To create a chart:

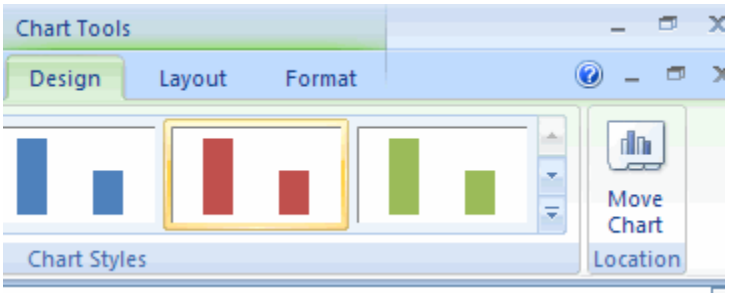
- Select the **cells** that contain the data you want to use in the chart
- Click the **Insert** tab on the Ribbon
- Click the type of **Chart** you want to create



Modify a Chart
Once you have created a chart you can do several things to modify the chart.

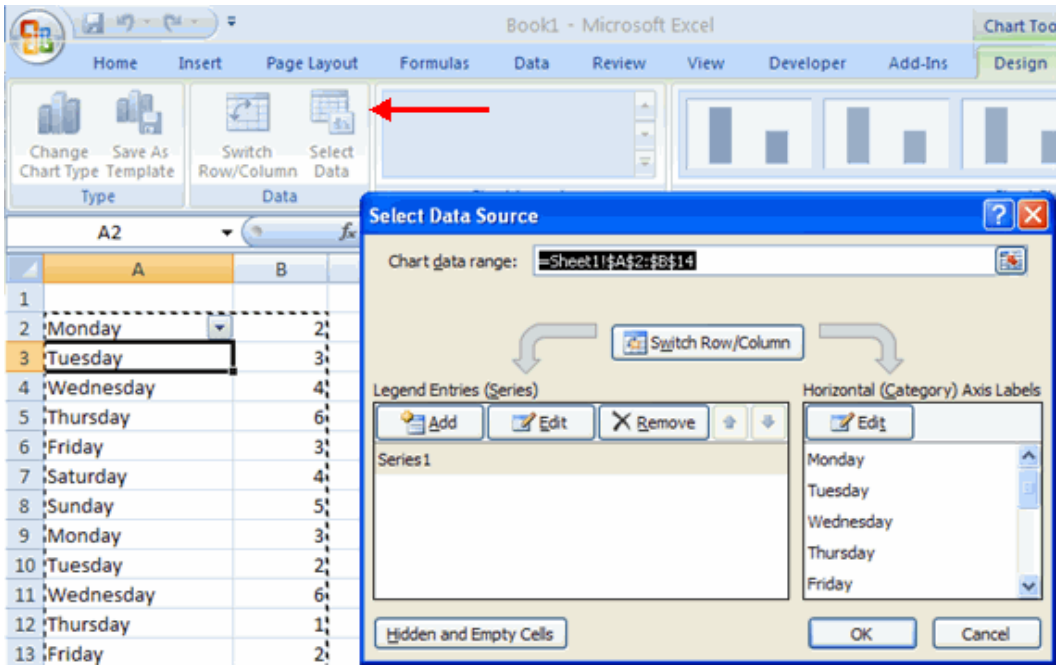
To move the chart:

- Click the **Chart** and **Drag** it another location on the same worksheet, or
- Click the **Move Chart** button on the **Design** tab
- Choose the desired location (either a new sheet or a current sheet in the workbook)



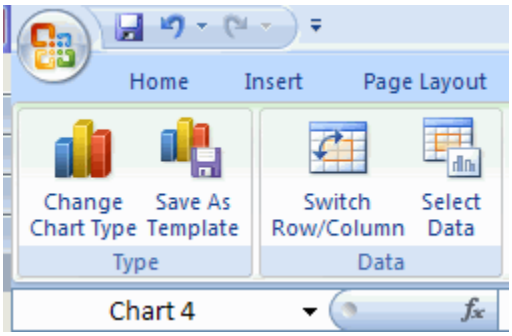
To change the data included in the chart:

- Click the **Chart**
- Click the **Select Data** button on the **Design** tab



To reverse which data are displayed in the rows and columns:

- Click the **Chart**
- Click the **Switch Row/Column** button on the **Design** tab



To modify the labels and titles:

- Click the **Chart**
- On the **Layout** tab, click the **Chart Title** or the **Data Labels** button
- Change the **Title** and click **Enter**

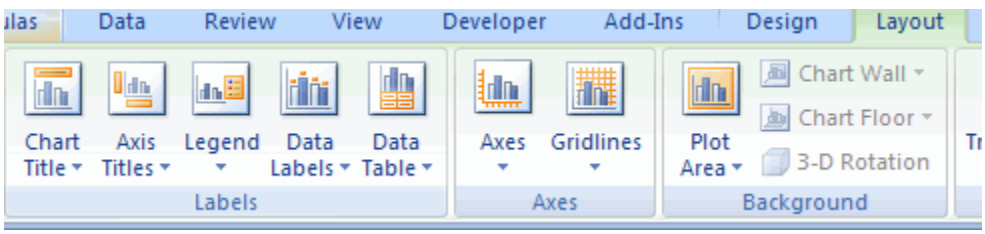
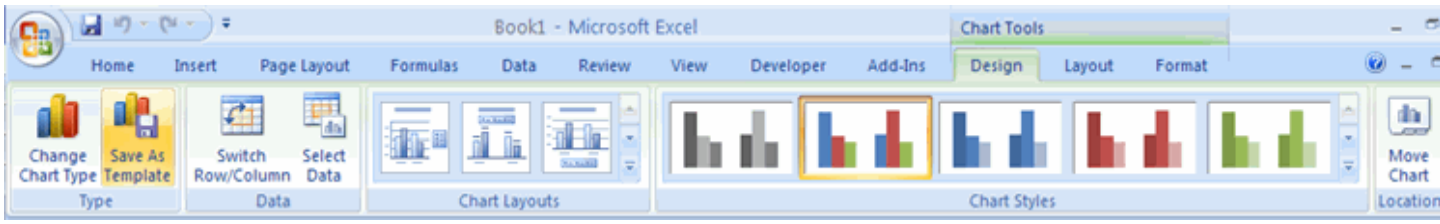


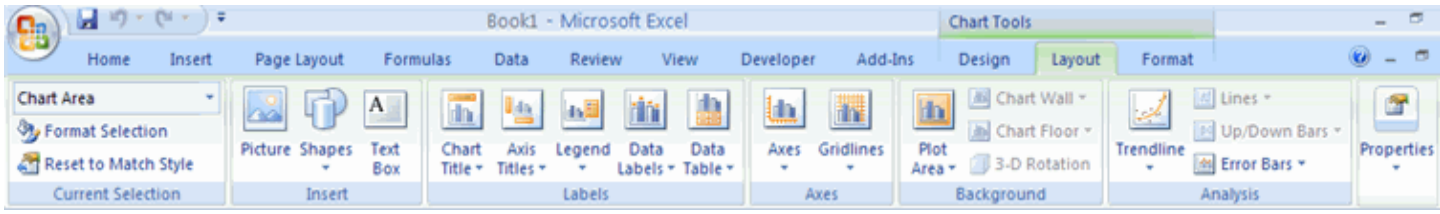
Chart Tools

The Chart Tools appear on the Ribbon when you click on the chart. The tools are located on three tabs: Design, Layout, and Format.

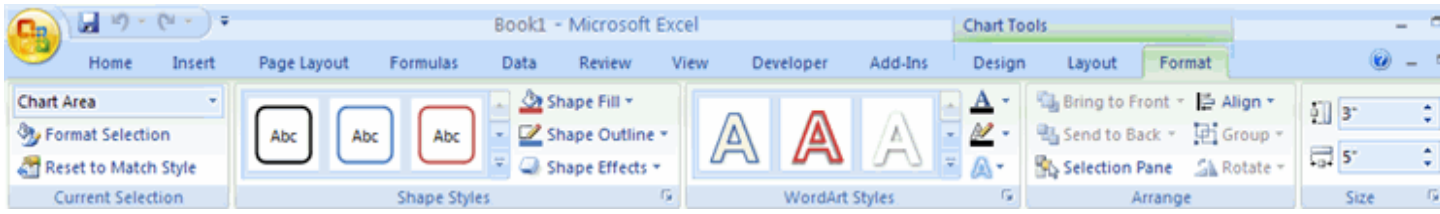
Within the **Design** tab you can control the chart type, layout, styles, and location.



Within the **Layout** tab you can control inserting pictures, shapes and text boxes, labels, axes, background, and analysis.

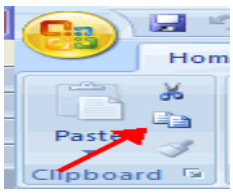


Within the **Format** tab you can modify shape styles, word styles and size of the chart.



Copy a Chart to Word

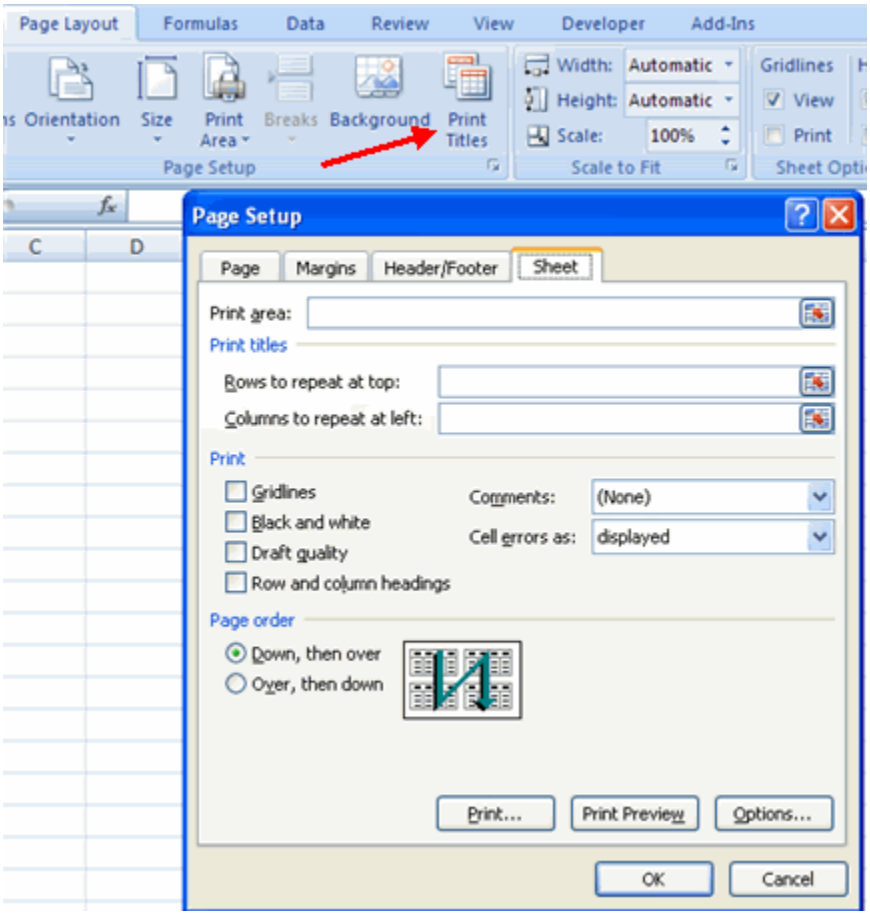
- Select the **chart**
- Click **Copy** on the **Home** tab
- Go to the **Word** document where you want the chart located
- Click **Paste** on the **Home** tab



Set Print Titles

The print titles function allows you to repeat the column and row headings at the beginning of each new page to make reading a multiple page sheet easier to read when printed. To Print Titles:

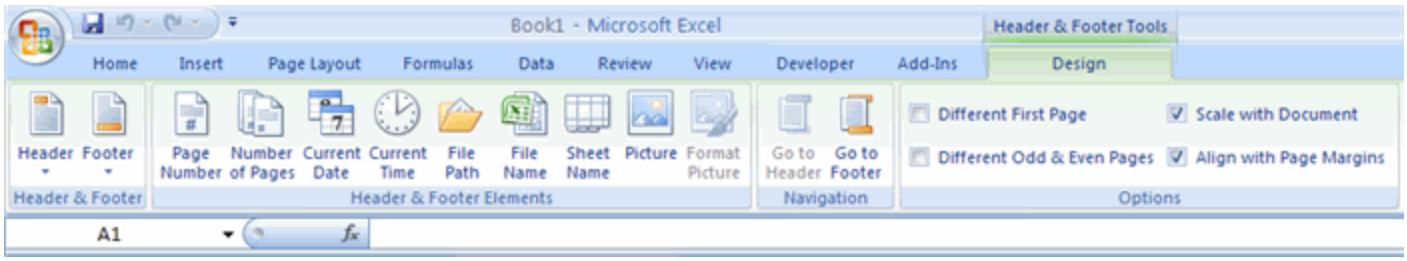
- Click the **Page Layout** tab on the Ribbon
- Click the **Print Titles** button
- In the **Print Titles** section, click the box to select the rows/columns to be repeated
- Select the row or column
- Click the **Select Row/Column Button**
- Click OK



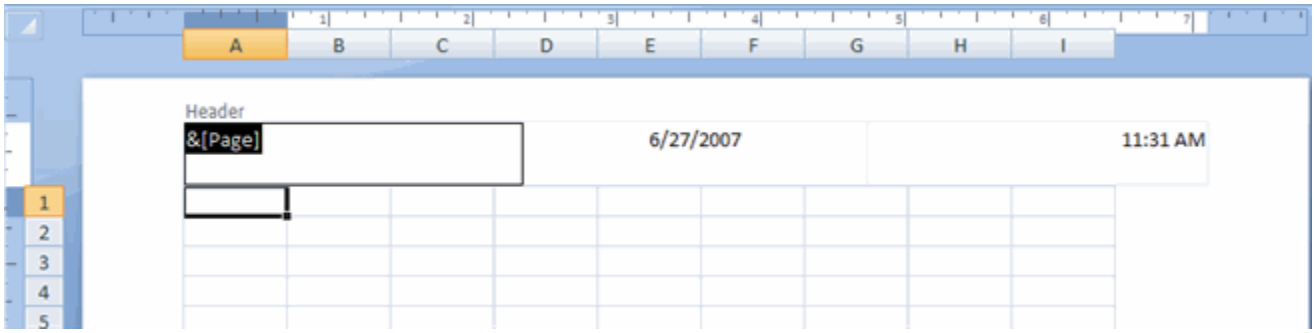
Create a Header or Footer

To create a header or footer:

- Click the **Header & Footer** button on the **Insert** tab
- This will display the **Header & Footer Design Tools Tab**
- To switch between the Header and Footer, click the **Go to Header** or **Go to Footer** button

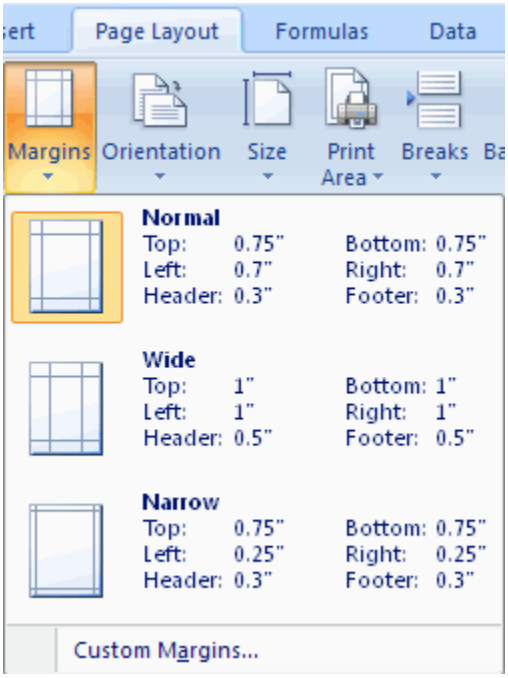


- To insert text, enter the text in the header or footer
- To enter preprogrammed data such as page numbers, date, time, file name or sheet name, click the appropriate button
- To change the location of data, click the desired cell

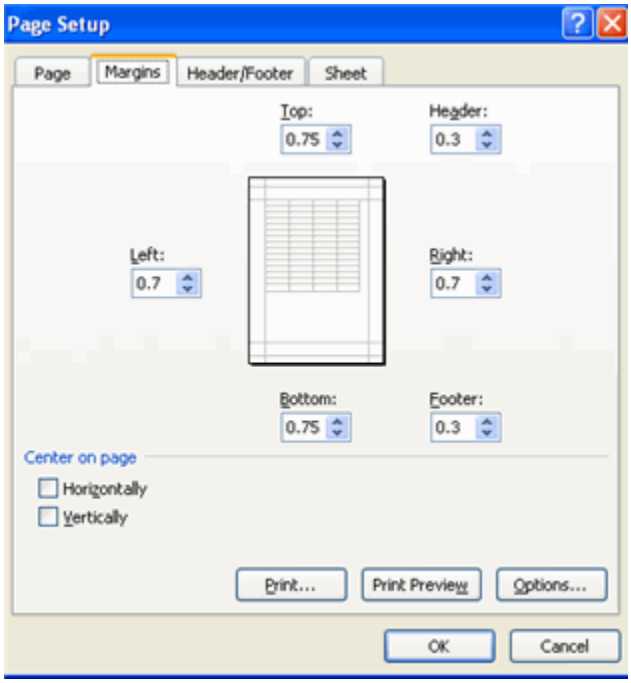


Set Page Margins
To set the page margins:

- Click the **Margins** button on the **Page Layout** tab
- Select one of the give choices, or

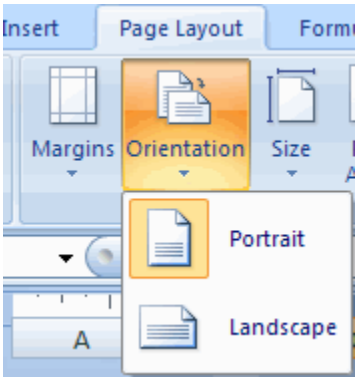


- Click **Custom Margins**
- Complete the boxes to set margins
- Click **Ok**



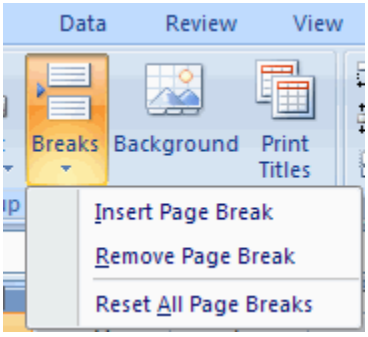
Change Page Orientation
To change the page orientation from portrait to landscape:

- Click the **Orientation** button on the **Page Layout** tab
- Choose **Portrait** or **Landscape**



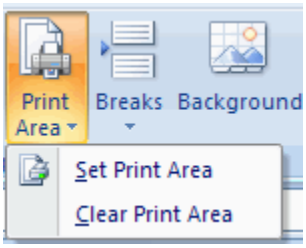
Set Page Breaks
You can manually set up page breaks in a worksheet for ease of reading when the sheet is printed. To set a page break:

- Click the **Breaks** button on the **Page Layout** tab
- Click **Insert Page Break**



Print a Range
There may be times when you only want to print a portion of a worksheet. This is easily done through the Print Range function. To print a range:

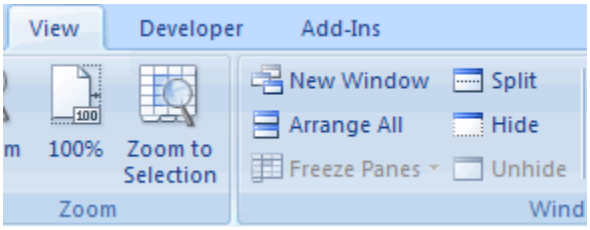
- Select the area to be printed
- Click the **Print Area** button on the **Page Layout** tab
- Click **Select Print Area**



Customize Layout

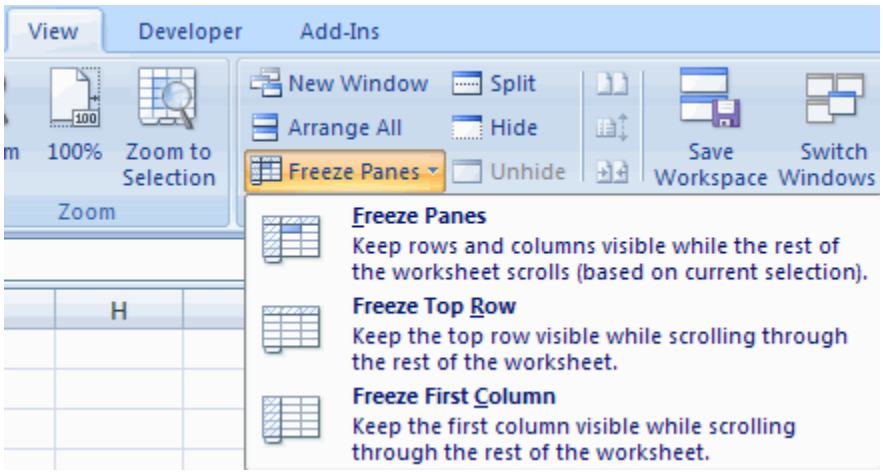
Split a Worksheet
You can split a worksheet into multiple resizable panes for easier viewing of parts of a worksheet. To split a worksheet:

- Select any cell in center of the worksheet you want to split
- Click the **Split** button on the **View** tab
- Notice the split in the screen, you can manipulate each part separately



Freeze Rows and Columns
You can select a particular portion of a worksheet to stay static while you work on other parts of the sheet. This is accomplished through the Freeze Rows and Columns Function. To Freeze a row or column:

- Click the **Freeze Panes** button on the **View** tab
- Either select a section to be frozen or click the defaults of top row or left column
- To unfreeze, click the **Freeze Panes** button
- Click **Unfreeze**

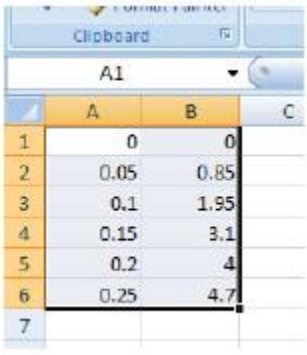


How to make a straight line fit using MS Excel 2007?

Follow the steps shown below **to make a graph and then draw a straight line that fits your data**.

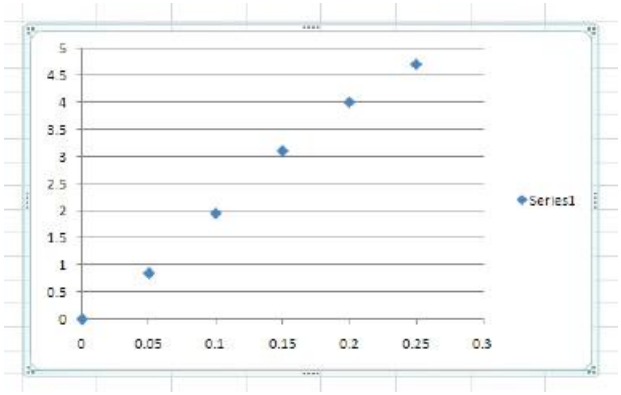
Start MS Excel 2007.

A. Enter your data into Excel spreadsheet.
B. Highlight all cells containing data. In our example, the first column (A) contains values of *x*, whereas the second column (B) contains values of force -*F*:



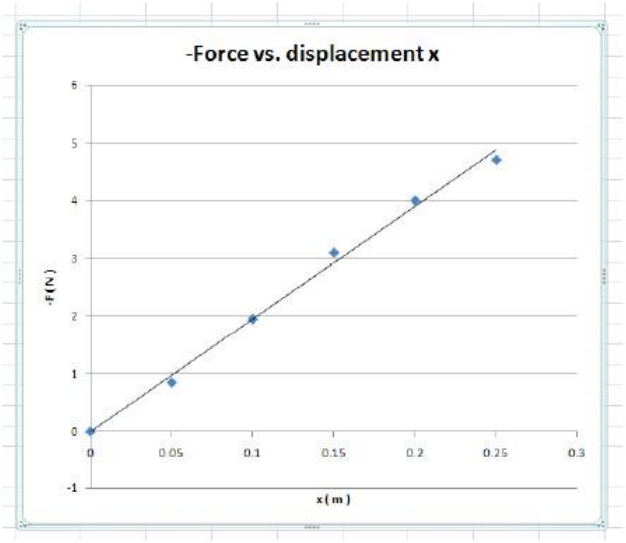
C. From the "Insert" tab select "Charts -Scatter". Use the first type of scatter charts - "Scatter with only Markers"

You should see a simple plot prepared by Excel 2007.



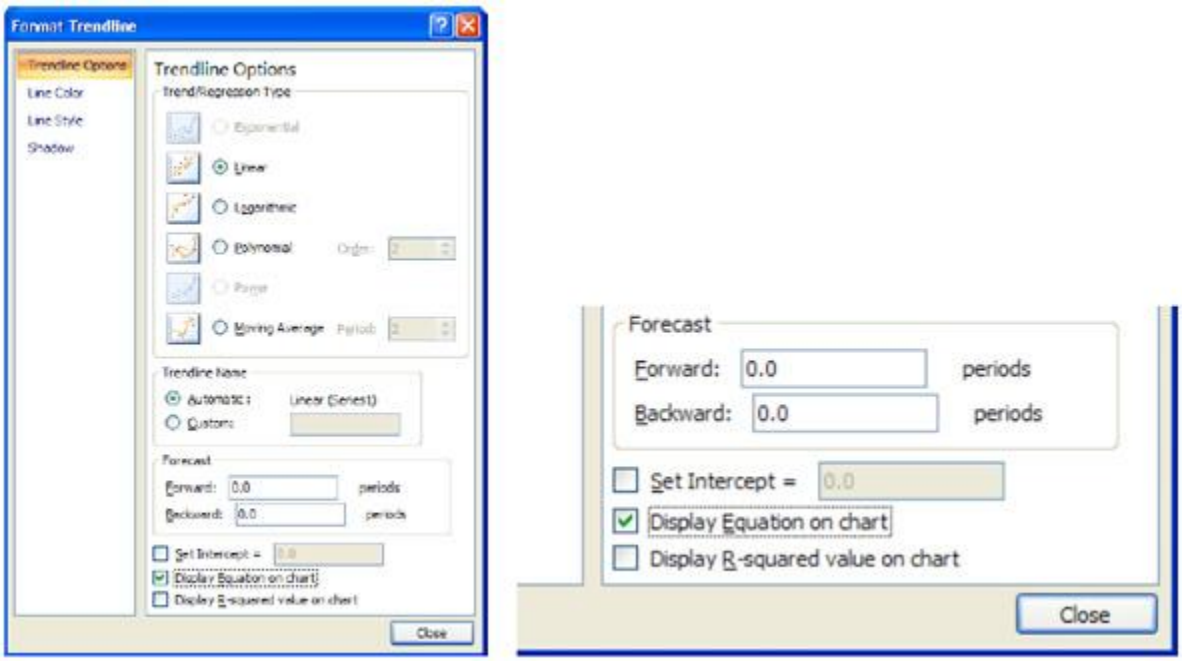
D. Next step is to add axis labels and legend to the graph. Select "Layout" tab from "Chart Tools". Then add a header using the "Chart Title" button and add axis labels using "Axis Titles" button (both for horizontal and for vertical axes). Optionally, you may edit or simply remove the legend. Grab and drag a corner of the graph (chart) to enlarge its size.

E. The last step is to add the linear fit (a straight line fit) to your graph (chart). Click once anywhere inside the graph area. Select the "Layout" tab from "Chart Tools". Click on the "Trendline" icon and select the "Linear Trendline" option. You should see a graph similar to this:

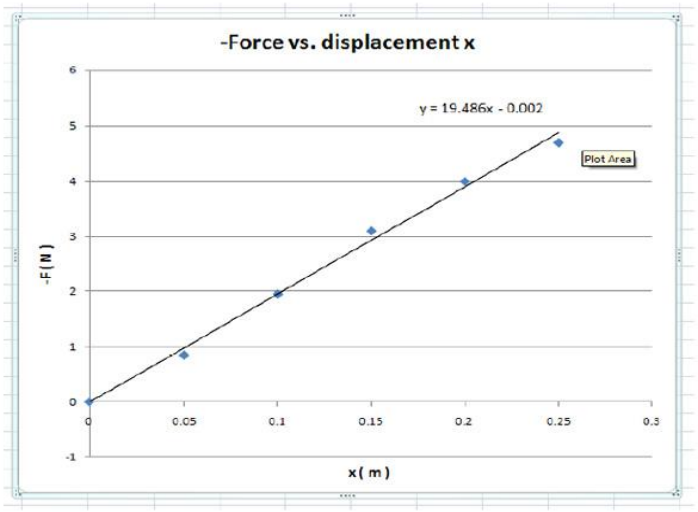


Now we can see the straight line of the fit, but we do not know what the parameters of the equation are. To show the equation, click on "Trendline" and select "More Trendline Options..."

Then check the "Display Equation on chart" box. You can also check to display the R^2 value.



The final result should look similar to the example shown below.



Note: Before you close out of the menu, you can move your cursor over the displayed best-fit equation and click on it to enable numeric formatting. The new menu that appears will allow you to choose a numeric format as well as choose the significant to be displayed.

MS Excel can be also used to fit more complicated equations (e.g., polynomial, exponential, logarithmic, etc.) using the same procedure, but with different trendline options - "More Trendline Options..."