PLOTTING DATA WITH MICOSOFT EXCEL

A. Introduction
       In this tutorial, you will learn how to perform simple data analysis and graphing by using Microsoft Excel.   To start learning Microsoft Excel, follow the simple instructions below.

B. Running *Excel*
1. Start *Excel* running by clicking on the **Start** button at the bottom of the screen and then moving up to **Programs** and then click on the **Excel** button. An Excel workbook is shown up as Figure 1.
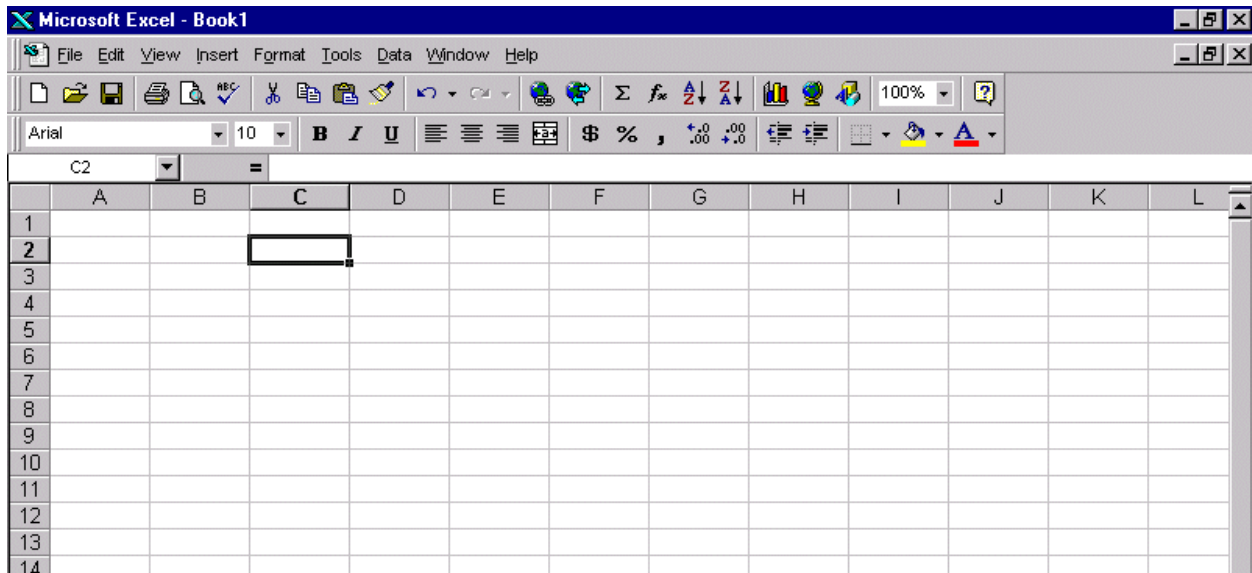

Figure 1

C. Entering Data
1.   Numerical values are added to a cell by moving to the cell in which you want to place the number, typing the number, and pressing <Enter>. Numbers are automatically right-justified.

2.   To enter some text in a cell, move to that cell and type in the text. Press <Enter> to end text entry. Text is automatically left-justified. Figure 2 shows a set of sample data.
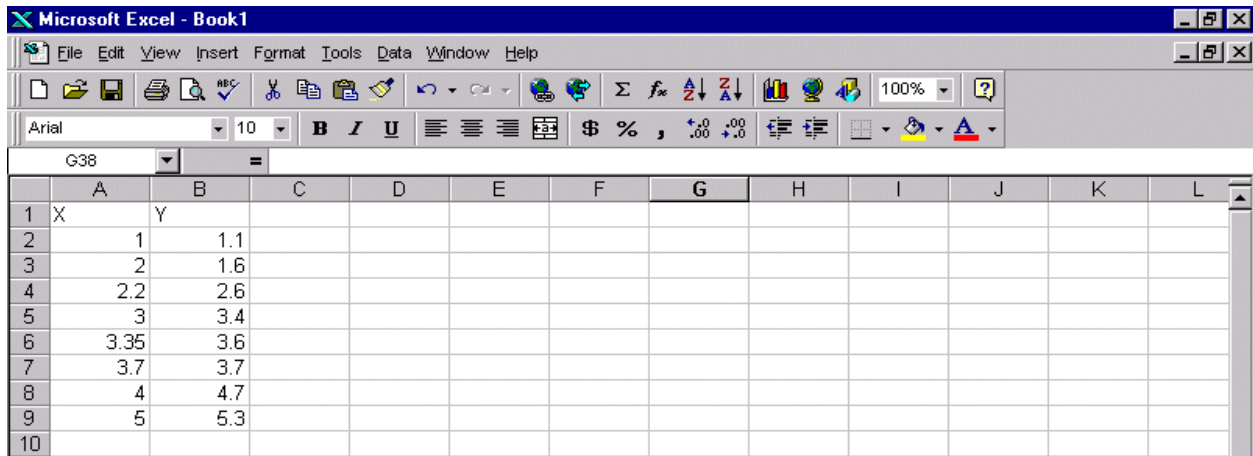
Figure 2

D. <u>Plotting a Linear Graph</u>
1. After entering your data, select and highlight the columns that you want to plot (see Figure 3). You can optionally label the columns (for example, X and Y) and also select those labels so that Excel uses them to label the axes.
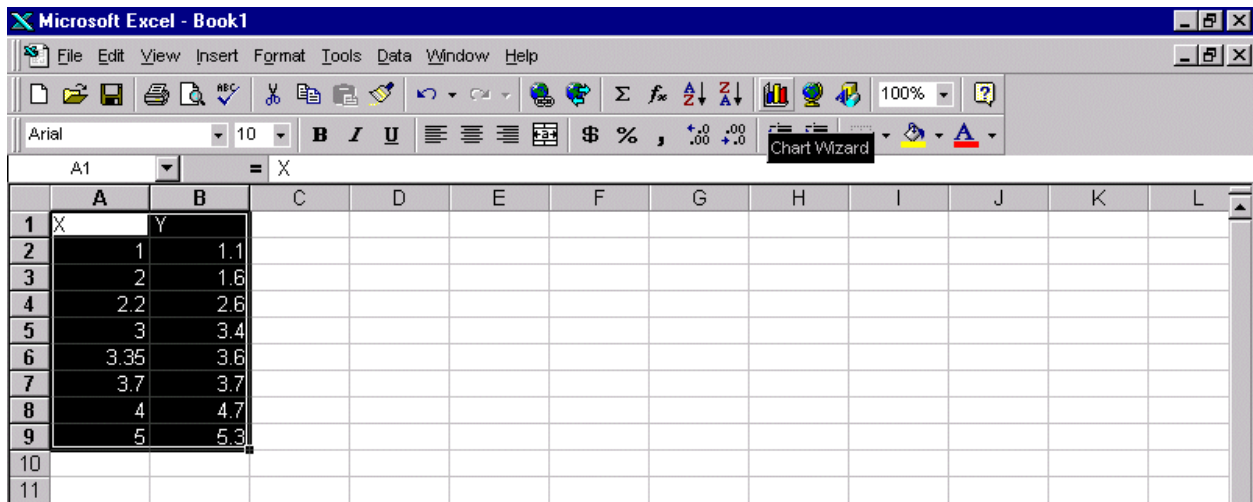

Figure 3

2. Then click the charting icon on the toolbar ▌▌, or select **Chart** in the **Insert** menu. The Chart wizard will open up (shown in Figure 4).

3. There are four steps in Chart wizard. Step 1: Select type of chart. You can select different types of chart. For most scientific plotting, use the XY(Scatter) chart type.
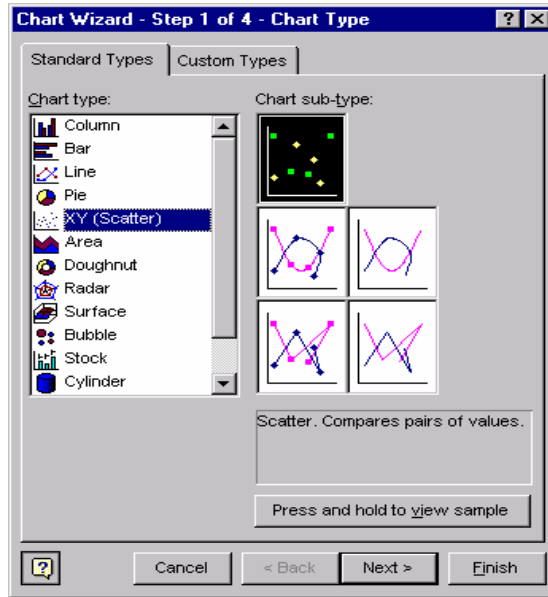
Figure 4

4. When ready, click **Next** to proceed. Step 2: Chart source data. Verify your data source. You can change your data source values.
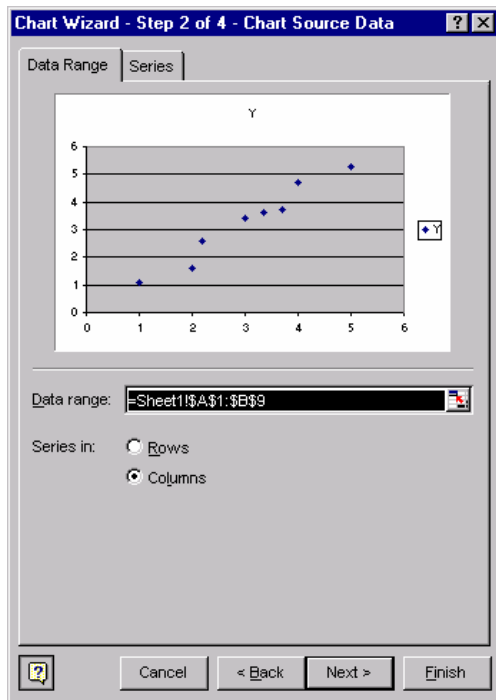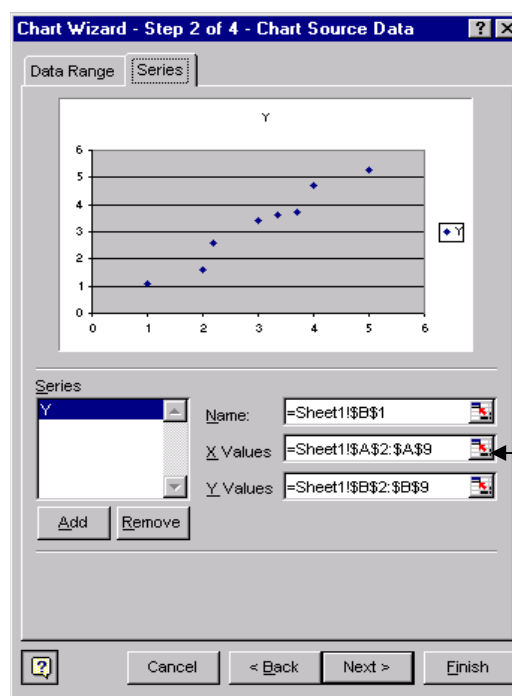

Figure 5(a)

Figure 5(b)

Note: Click here to change your data source. If for some reasons, you would like to change your X values to different values that located at different column. Click on the icon, you will lead to the data source. Highlight the new data source and click on the icon again to return back to this menu.

Click **Next** for further step or **Back** if you want to make any changes. Step 3: Chart Options. You have several options to modify your graph. For example, under the **Titles** tab (shown in Figure 6a), you can name your chart title, value of X and Y axes. If you click on **Legend** tab,

you are given the options to show the legend or relocate the legend. Be sure to explore the rest of chart options.
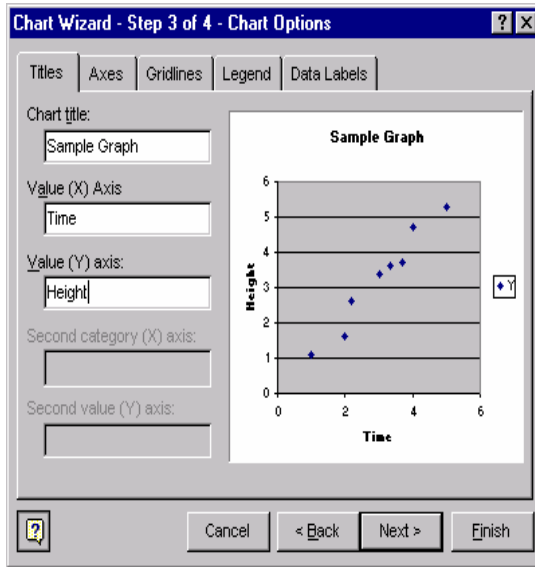

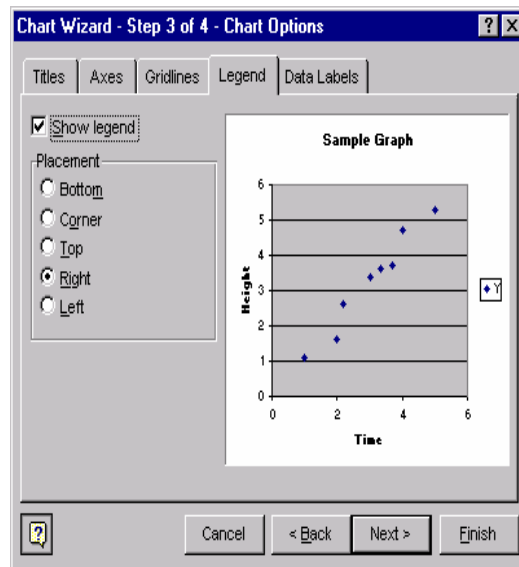**Figure 6(a)**   **Figure 6(b)**

5. Click **Next** for the last step. Step 4: Chart Location. You have two options to locate your chart. By default, you chart will be saved **As an object in** your worksheet. If you would like your chart to be displayed as a full size chart, save it **As a new sheet**.
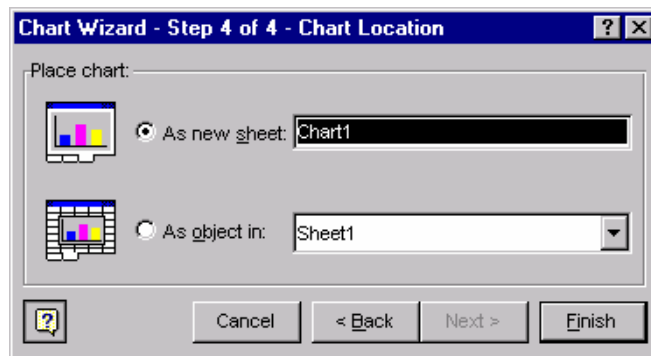

Figure 7

6. Excel can plot a regression line on your graph automatically. Click on the chart, then point to **Chart** menu then **Add Trendline** OR click on the chart's data series (Figure 8), follow by right click on the mouse button and then select **Add Trendline**.
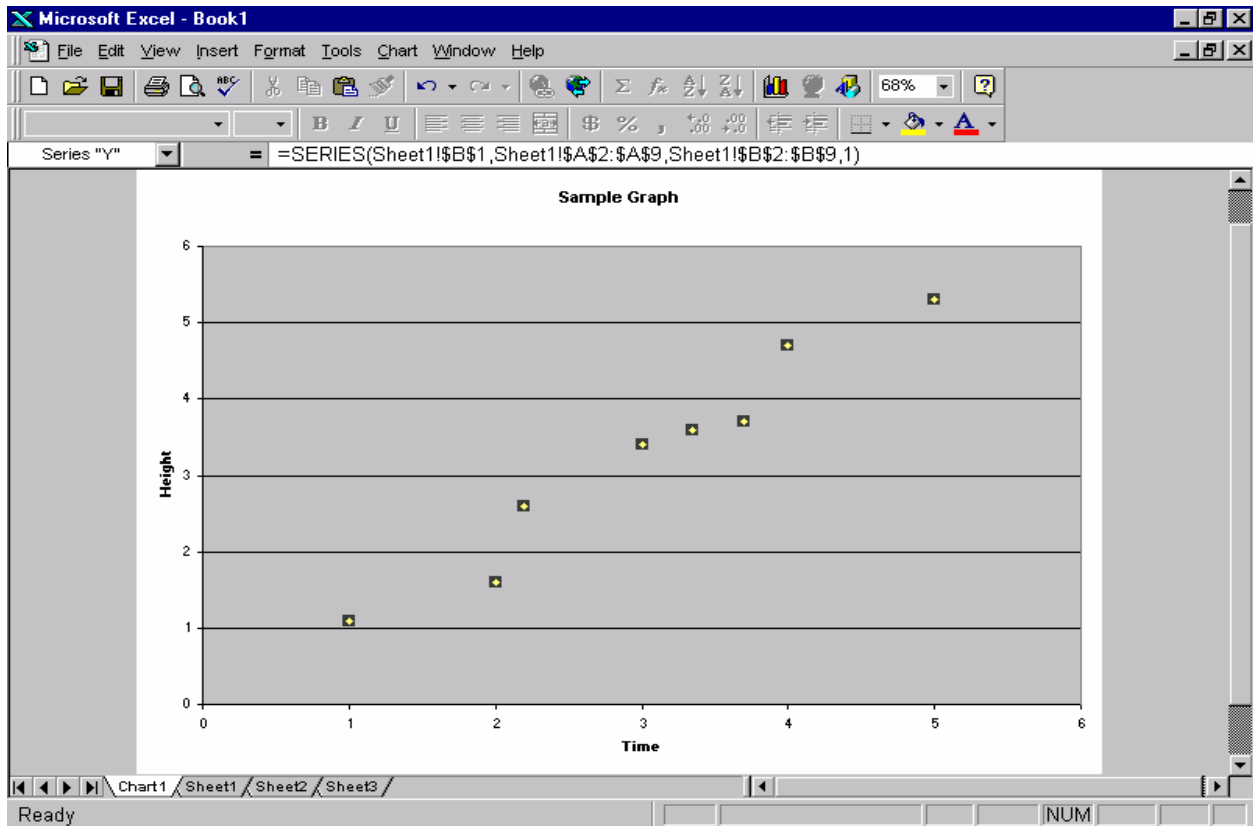
Figure 8

7. The box shown in Figure 9a will pop up. For simple linear regression, choose the first category. Then click the **Options** tab to choose from the available options for the trendline. One option you might want to choose is **Display Equation on Chart.**
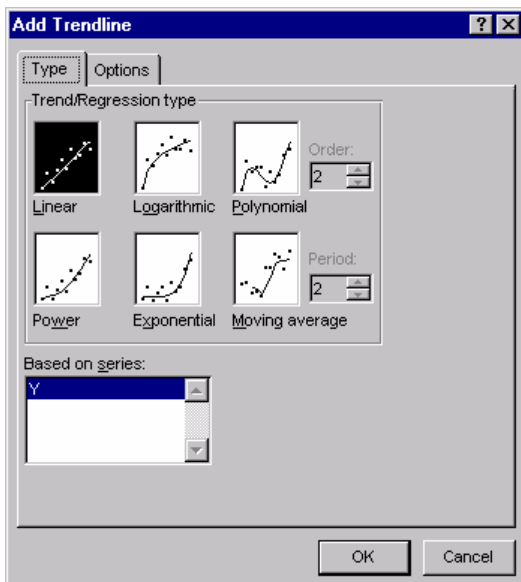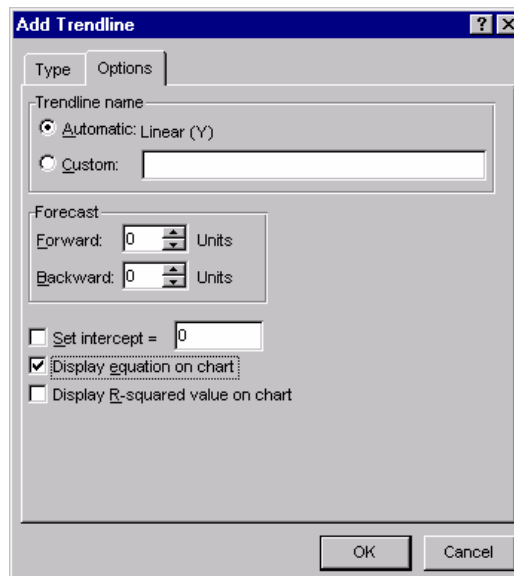

Figure 9(a)

Figure 9(b)

8. You should see the finished graph or plot as Figure 10. You can expand the size of your plot and make revisions or embellishments to the aesthetics of the plot. Placing the cursor over a particular area and using the right mouse button you can edit the aesthetic parts of the chart. Remember you can always change the background color of the graph or trendline's color.
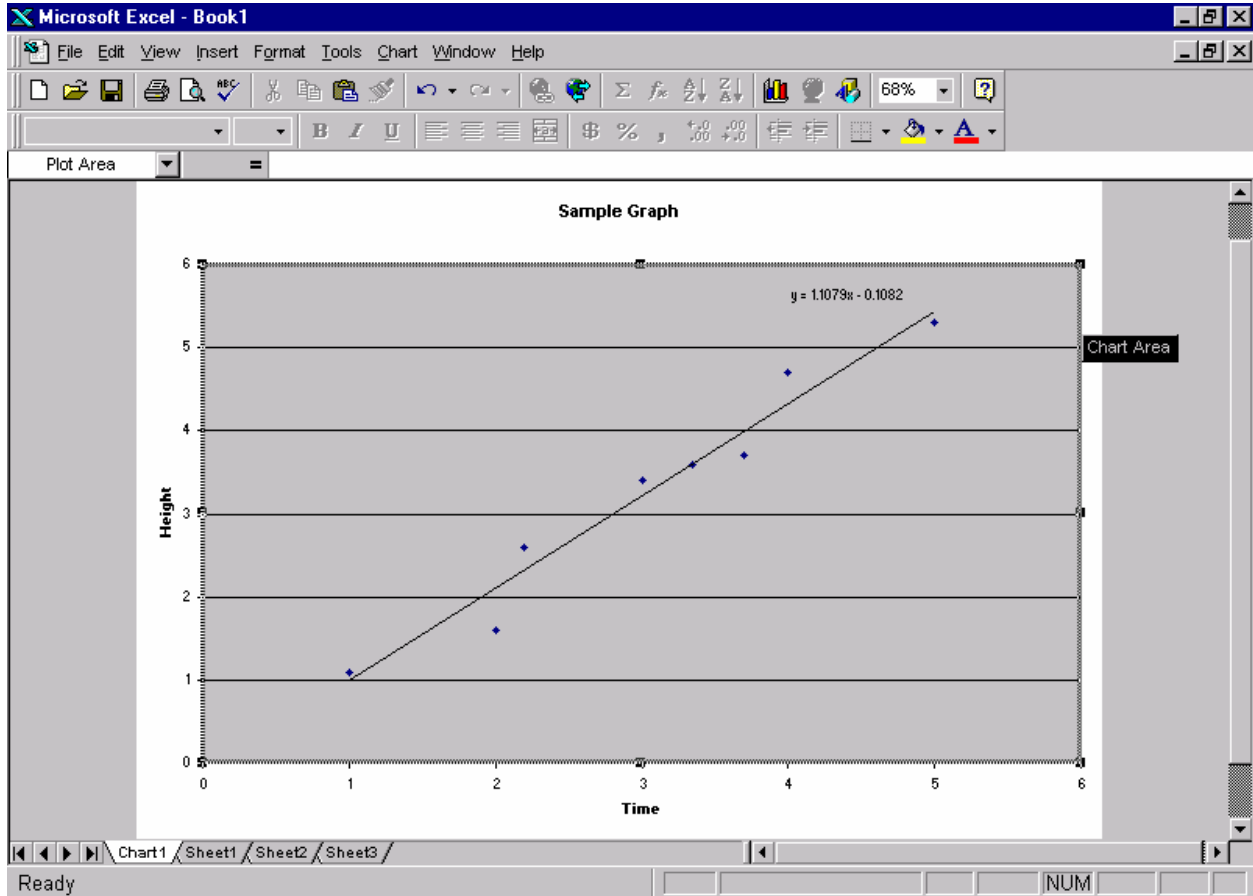

Figure 10