Creating a Graph in Excel

Enter the data in an Excel spreadsheet in columns. Label the first column with your $x$ data and the second column with your $y$ data. Enter the data under the appropriate column. In the example below, Elapsed Time (s) is my $x$ data and Temperature ($^\circ$C) is my $y$ data. Do not type units with the numbers. Excel will only graph numbers not units.

Once all of your data is entered, highlight the data only (not the data titles). You can do this by clicking in the upper left hand data box and using your mouse to scroll over the rest of the data.
After highlighting the data, click on the Chart Wizard button located on the toolbar at the top of the page.

The Chart Wizard dialogue box will open up.
Choose the XY (Scatter) chart type and keep the selected default chart subtype. Do not connect the dots. Click the next button after you have everything selected.

At this point, you should see your data being graphed. Make sure the **columns** radio button is selected for your series.
Click on the series tab located at the top of this screen. If you are graphing more than one set of data on a graph, you can name each data set at this point. Click in the name box and type the name you want. This data that I am graphing is from Trial 1, so I’ve named the series “Trial 1”. If you are only graphing one set of data, you can skip this step.

Click next. You will see a new dialogue box that will allow you to name the chart and label the axes. Type an appropriate name for your graph. The axes should be labeled with the physical quantity being measured and the units in parentheses.
There are 5 tabs at the top of this dialogue box. The axes tab allows you to choose whether you want to display the axes or not. The gridlines tab allows you to choose to show minor gridlines as well as major gridlines. If you have only one data set, click on the legends tab and uncheck the box “Show Legend”. The data labels box will allow you to display the (x,y) value for each data point. Click on the tabs and experiment with these options. In the image below, I chose to display major and minor gridlines for the x-axis.

Click next after making your selections. Choose the radio button labeled “As new sheet:” and click finish. Your chart will be displayed on a separate sheet.
Right click on the background of your chart until you see the dialogue box shown in the image below. Choose “clear” and you will erase the colored background. This saves on your printer ink. You do not have to print graphs in fancy colors.

To add a trendline, right click on any data point. Choose “Add Trendline” from the dialogue box that opens up.
Another dialogue box with trendline options will open. Choose the appropriate trendline to fit your data. For the data that I’ve graphed, I am choosing a linear trendline.

Choose the “Options” tab at the top of the dialogue box. Under this menu, you can display the equation of your trendline (in the form $y = mx + b$). You can also choose to have your trendline go through the origin. You need to determine whether this is appropriate for your graph. In my data, I will have some temperature at zero time. Therefore, it would not make sense for me to choose to have my data go through the origin. If we were measuring speed in relation to time, I would have zero speed at zero time. In this case, I would choose to have my data go through the origin. You can also forecast your trendline under this tab. Forecasting means your trendline will be extended forwards or backwards. Rather than using a ruler to do this, Excel will do it for you. You can change the number of units you would like the line to be extended by typing in a number.
When you are finished, click “OK”. Your chart will now display a trendline and the equation if you selected it.

You can move the line equation by selecting it and dragging it with your mouse.
The legend box is now displaying a line labeled “Linear (xxxxx)”. Left click on the legend to highlight the trendline only. Delete the trendline from the legend.

To add a second set of data, choose the “Sheet 1” tab at the bottom of the screen. Type in your second set of data in any two columns. Make sure you type the $x$ values in the first column and the $y$ values in the second column.
Go back to your chart and right click in the background. Select “Source Data”.

Click on the “Series” tab and click “Add” under the series section. Name your second set of data.
To select the data for the series, click on the graph icon to the right of the “X Values”. The dialogue box will shrink.

Choose “Sheet 1” from the tabs below. Highlight your $x$ values by clicking and dragging the mouse. If the dialogue box is in your way, drag it out of the way. Once you have your data selected, click the graph icon on the dialogue box again.
The dialogue box will open back up to full size. Your $x$ values are now displayed in the box.

Now enter the $y$ values by clicking on the graph icon to the right of the “Y Values”. Again, the dialogue box will shrink. Your screen will also be displaying the chart. Click on the “Sheet 1” tab at the bottom of the screen. Highlight the $y$ values and repeat the steps you followed to enter the $x$ values.
If you completed everything correctly, you will now have the “Y Values” filled. Click “OK”. The new data points are displayed on the chart.

You can add a trendline to this data by following the steps above. Once your graph is complete, print it. Click outside of the graph before printing. You can also copy and paste your graph into a Word document. Make sure your trendline equations are next to the line they represent.