Some Useful Excel Commands for Physics 40 Lab Work

Basic Spreadsheet Commands:

=A4 puts the contents of the cell A4 into the current cell
=A4/A5 can do math with cell contents
=SUM(A4:A8) puts the sum of A4 through A8 into the current cell
=AVERAGE(B2:B9) puts the average of B2 through B9 in the current cell
=STDEV(B2:B9) … and the standard deviation
=SQRT(2) or =SQRT(C4) will square-root a number or another cell
=COS(radians) give your angle in radians, and it returns the cosine
Any text in a cell makes the entire cell contents text - i.e., "3 cm" is not a recognized number.

To Graph Data:
Highlight your column of x-values, holding down <Ctrl>, highlight columns of y-values, from the menu, choose Insert, Chart, or use the Chart icon on the task bar.

The Chart Wizard will run:

Step 1: choose XY (Scatter), Next,
Step 2: view the graph and, under the Series tab, make sure the x and y data values are the correct ones, Next,
Step 3: add a chart title, labels for the x and y axes, and any other formatting you desire by clicking the appropriate tab, Next,
Step 4: choose whether you want to put the graph in your spreadsheet or on a new page, then Finish.

To get the Best fit line Through Your Data:

You have to give Excel the data given by by x-range and y-range:
Highlight a 2 x 2 block of cells, type (do not click on a cell just start typing):
=linest(y-range,x-range,1,1), then hit <Ctrl-Shift-Enter>
y-range, x-range is the range of cells, which contains the y- and x-values for the data you want evaluated with the linest command (typically it is the data on your graph), e.g. b3:b7.

NOTE: The Chart Wizard asks for your data x-axis first, while the linest command asks for your data y-axis first, be careful!
y = mx + b is the best fit straight line for the set of data.

To get a Trendline (the best fit line) on Your Graph:

Right click on one of the data points on your graph and select add trendline, click the Options tab and select “Display equation on chart”. Click OK and the best-fit line and the line’s equation will appear on your graph.

To Edit a Graph:

First, right click on the part of the graph you want to edit and choose the appropriate command from the pop-up menus:
Data Graphed Incorrectly: click on Source Data, then click the Series tab. Click the icon to the right of the Y Values box, and highlight the correct y-values on the spreadsheet. Then click the icon again. Do the same for the x-values in the X Values box.

Editing Series Name: click on Source Data, click the Series tab, and then enter the name in the Name box.

Change Graph Type: choose Chart type, and choose the Chart sub-type desired.

Lines Connecting Points: To add or delete a line connecting points, double click on a data point, under the Patterns tab, choose Automatic or None under the Line option.

Editing Labels: To edit a title or axis label, single click the text on the plot. Edit the text, clicking the mouse outside the graph when through.

Insert Labels or Gridlines: Choose Chart Options. Click the appropriate tab, edit text or click the appropriate box, and then click OK.

Hints for Printing: If the column widths are the standard (i.e., you haven’t changed them; Excel’s standard is 8.43 wide), then only everything through column I will print on a page, if you go past that to the right, then it will get cut off and print on a second page. Shrink graphs that are not on a sheet of their own so that they fit on a single page. Also remember that row 52 is the lowest line on the first page.

Switching Between Charts and Spreadsheets on Different Sheets: You can go back and forth between graphs (plotted on their own sheet) and spreadsheets, or just between different spreadsheets, by clicking on the tabs at the bottom of the page (e.g. Sheet1 or Chart1).