

PLOTTING DATA WITH MICROSOFT EXCEL 2007

Introduction

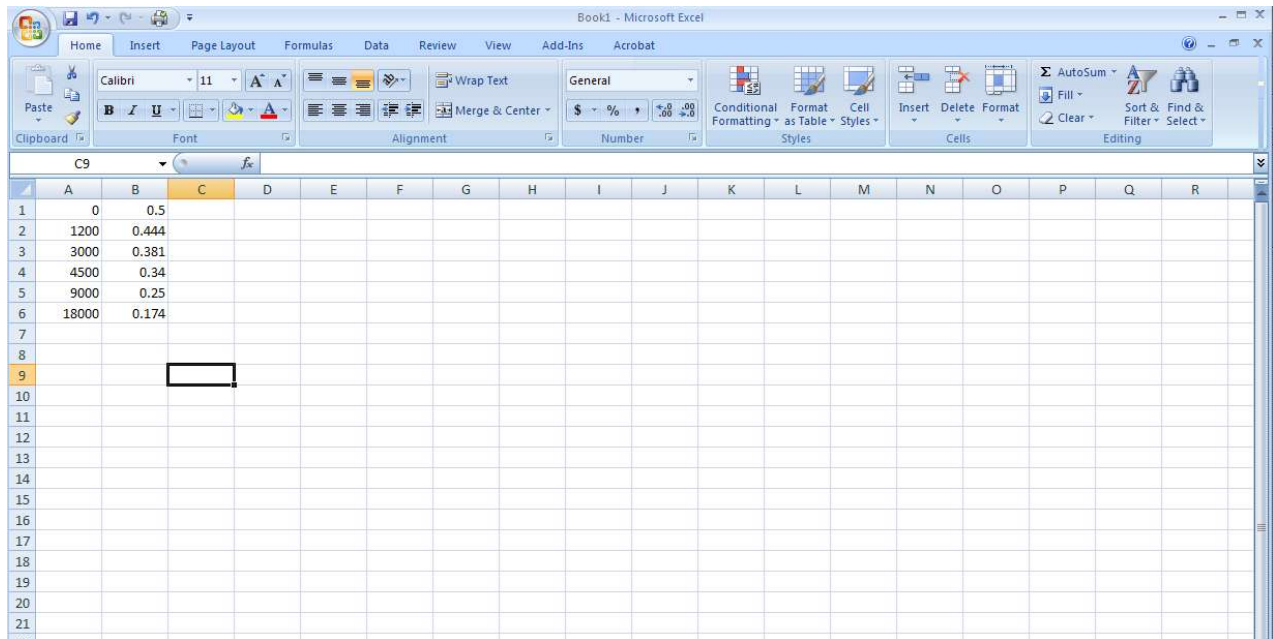
In this tutorial, you will learn how to perform simple data analysis and graphing by using Microsoft Excel. To start learning Microsoft Excel, follow the simple instructions below.

Running Excel

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.

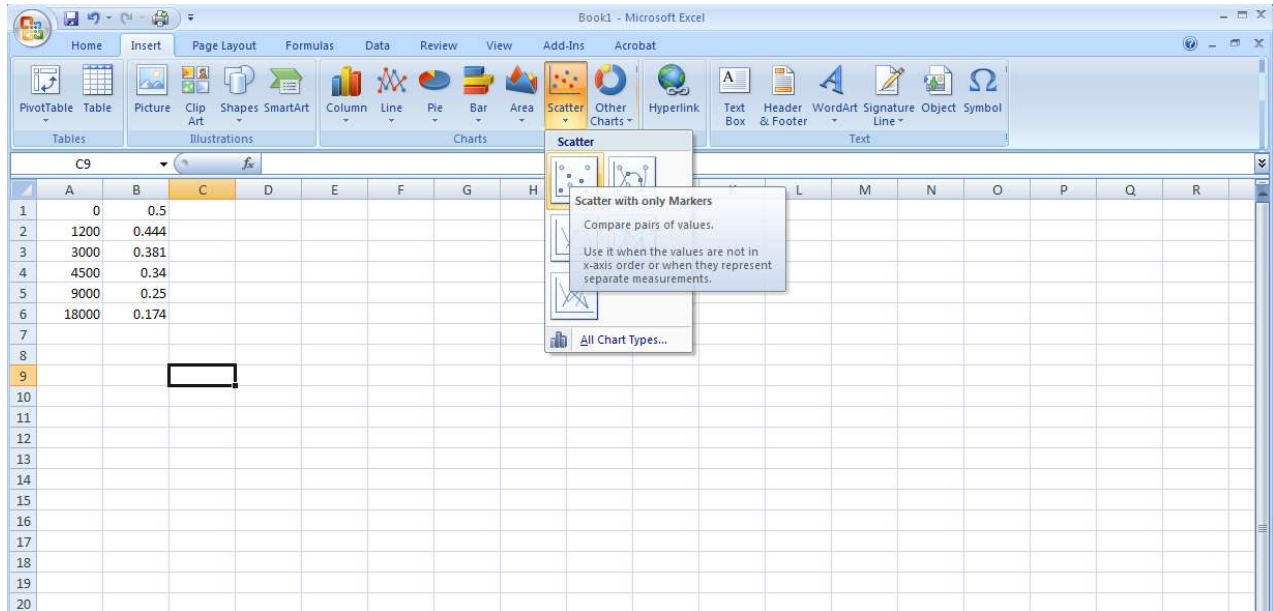
Entering Data

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 1 shows a set of sample data.

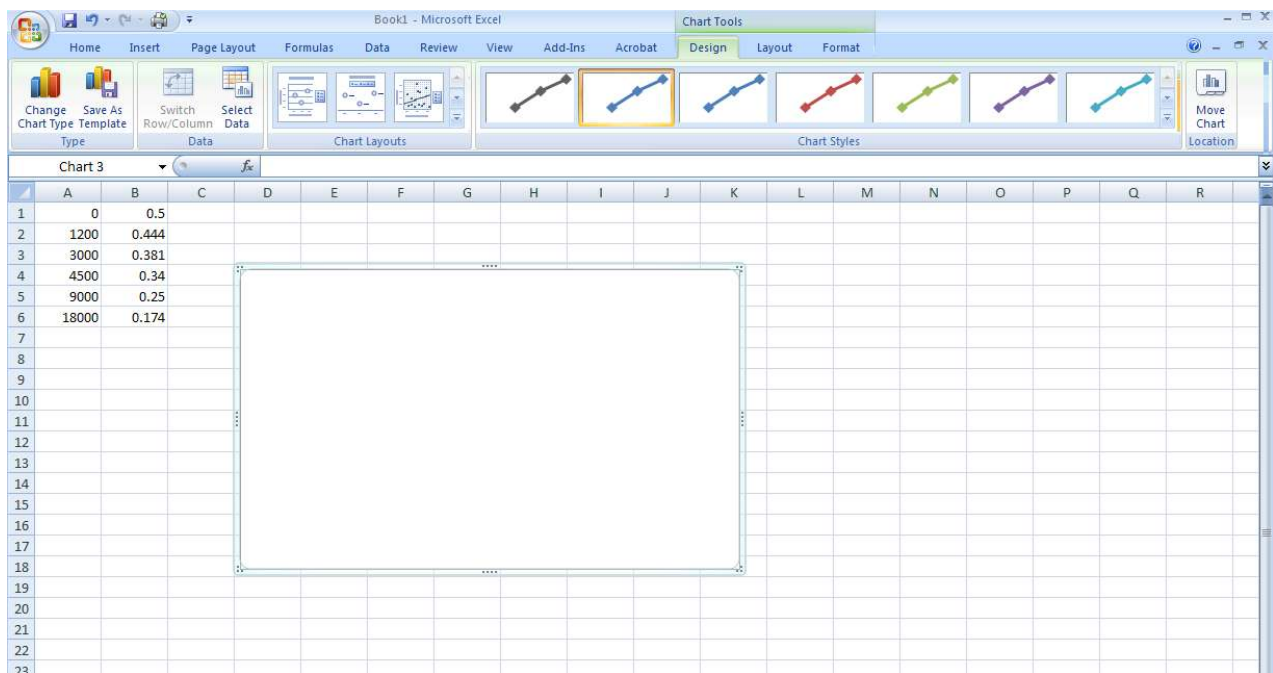


D. Plotting a Linear Graph

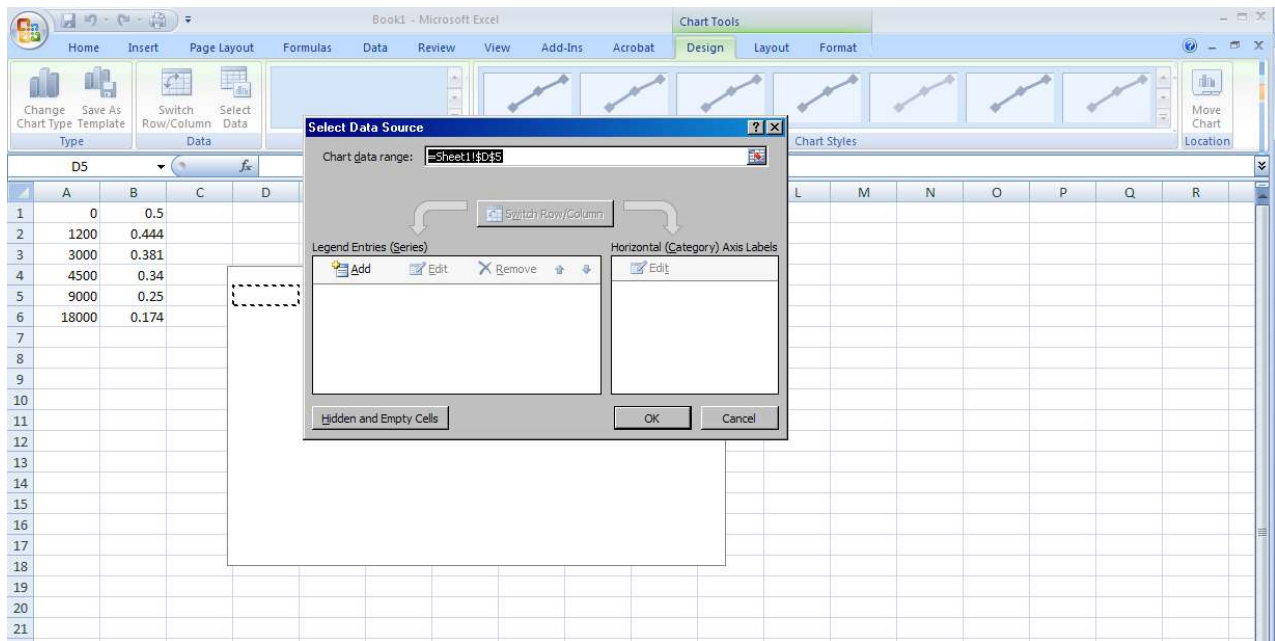
1. After entering your data, go to the menu bar and select “Insert”. On the menu bar that appears, select your choice of plots. For most data plots, you will select “Scatter Plot”. Select the data points plot from the menu that results.



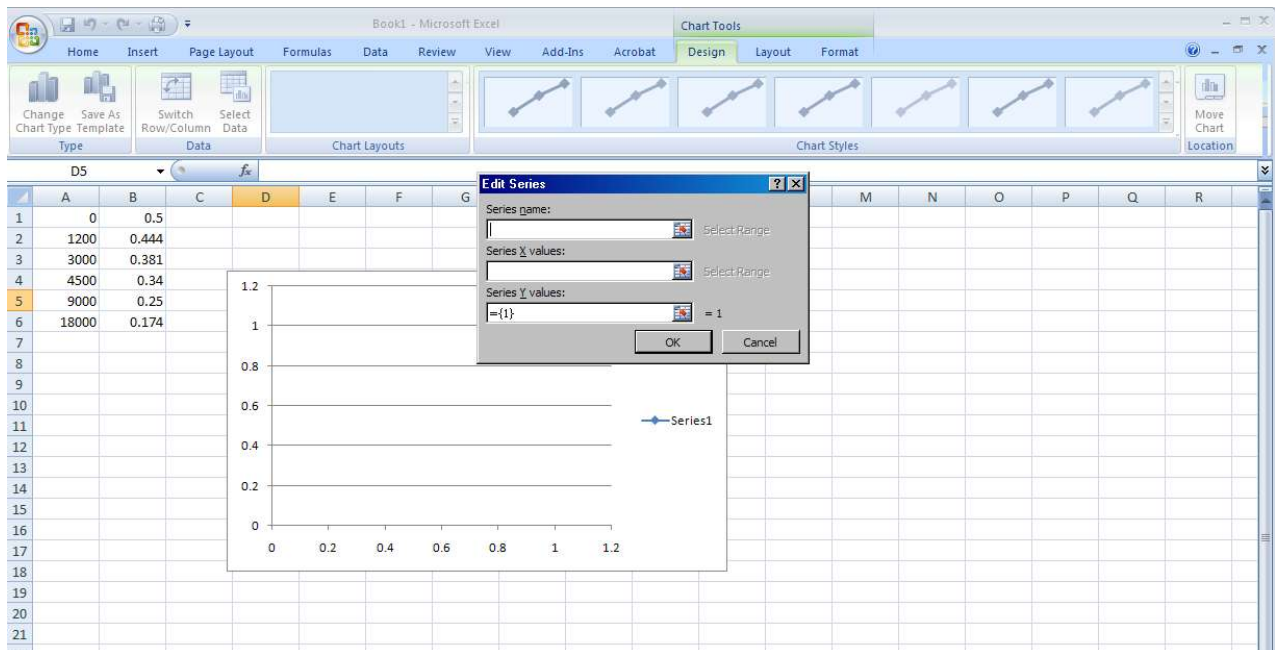
2. A blank chart will appear as shown below. Now, it is time to select the preferred data.



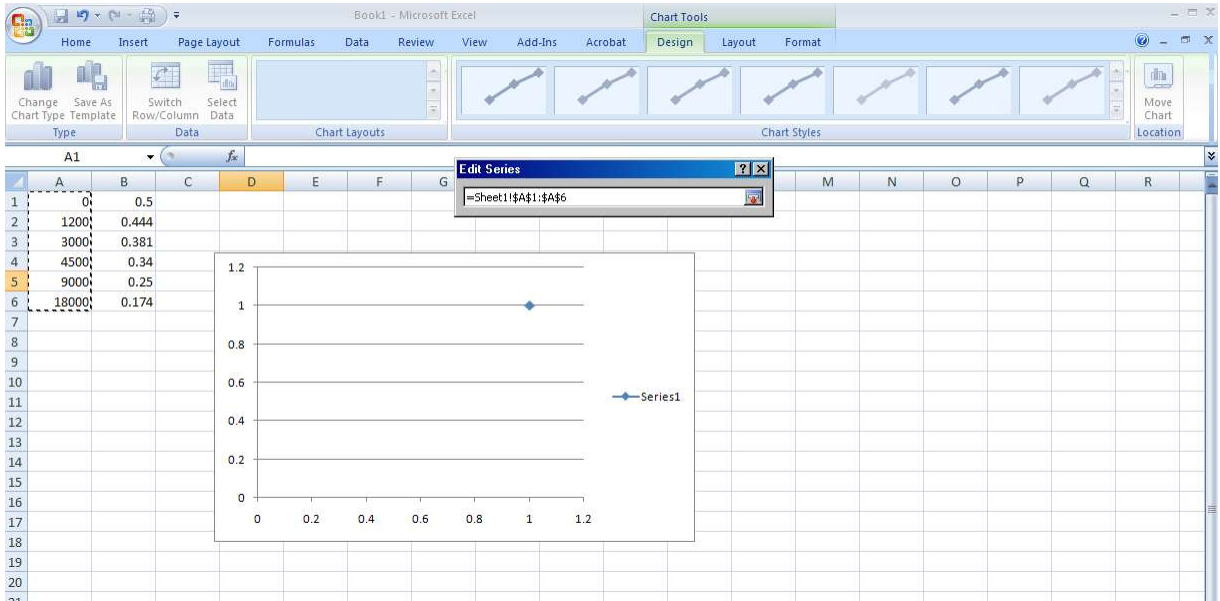
3. Go to “Select Data” from the menu bar or right-click on the chart and pick the Select Data from the options. A dialog box will appear.



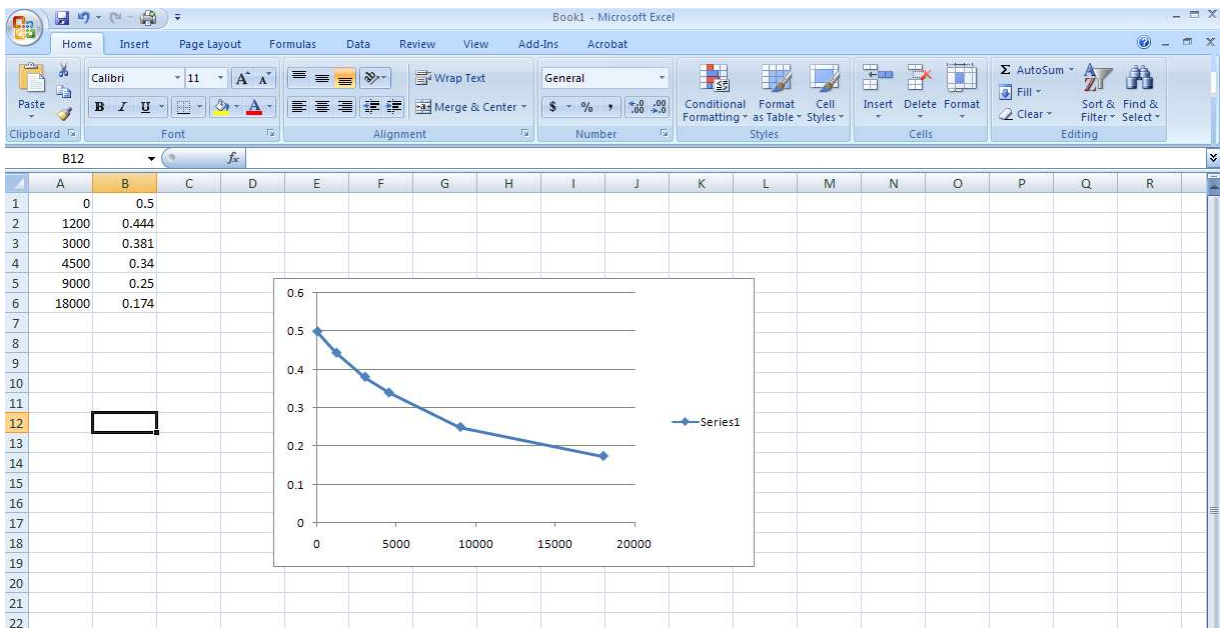
4. Select “Add” from the box and another box will appear.



- When ready, click on the “Series X Values” icon to the right of the space. When you do so, the dialog box will minimize and you can then drag the mouse and select the values you wish to plot on the x-axis.



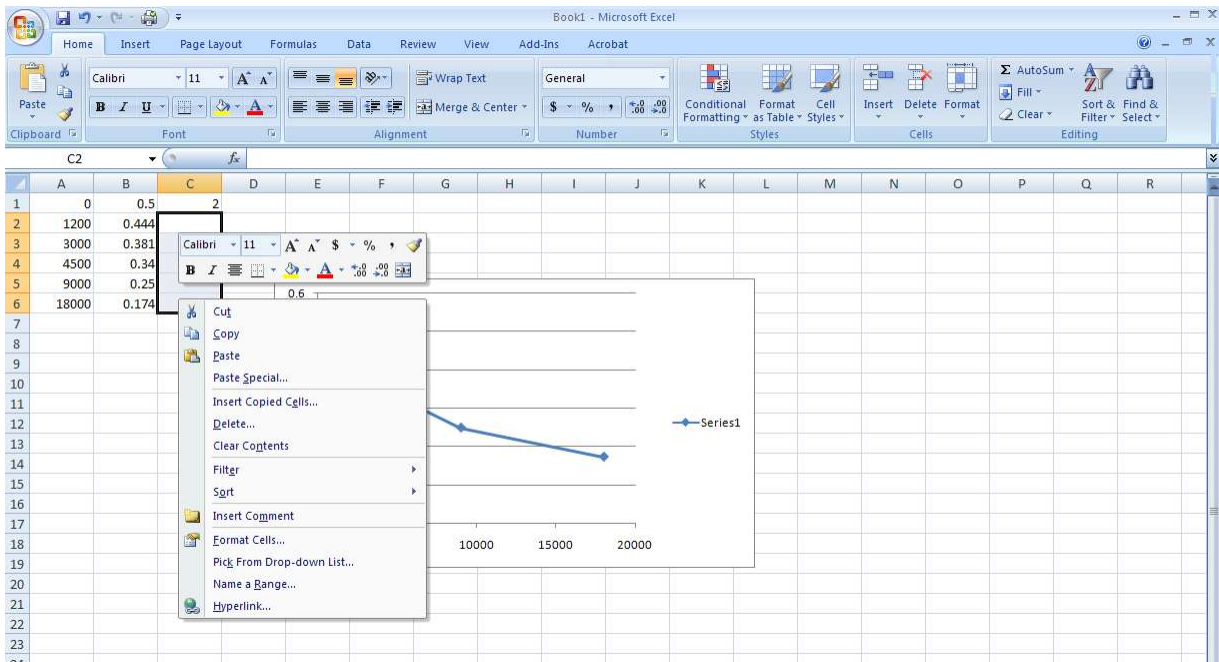
- When the x-values are selected, click on the icon to the right of the space in the dialog box. The larger box will appear again and you may repeat this for the “Series Y Values”. Select “OK” when done to clear the dialog box and reveal the plot.



Selecting new Data and Curve Fitting

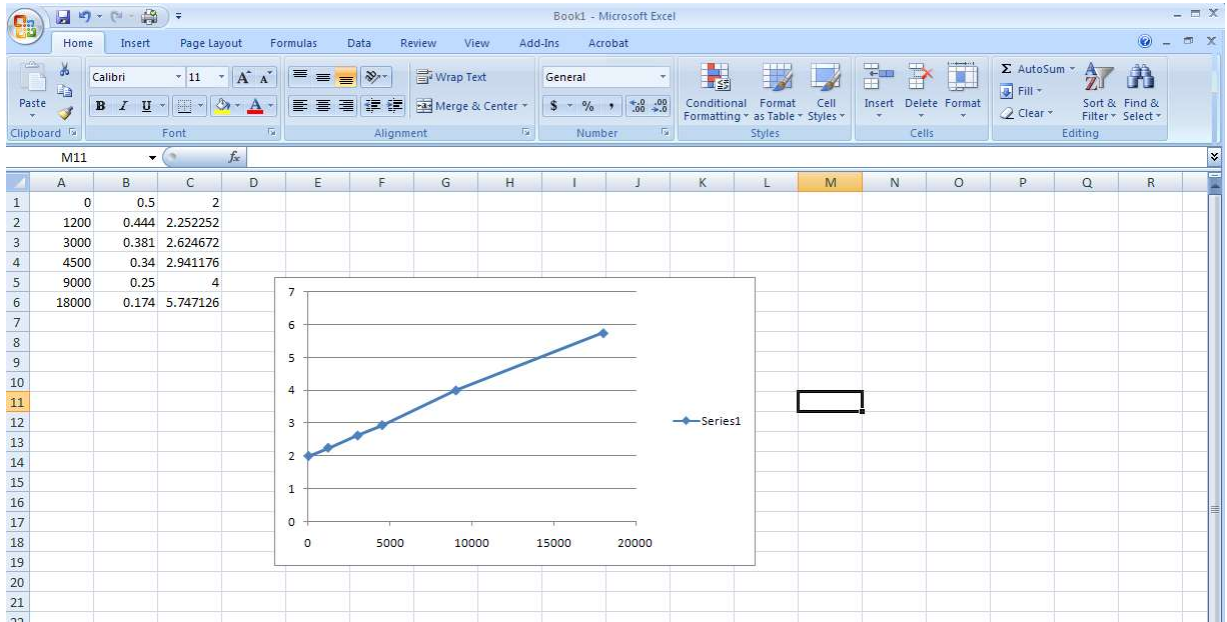
At this point, we can fit this to a curve of choice. In this instance, the user wishes to re-plot the data to produce a linear plot by plotting the inverse of the y-axis data.

1. In the next column, I type the following.. “=1/B1” and hit enter. Excel takes the value in cell B2 and takes then takes the inverse, or divides it into 1.
2. Next, select the cell that has the equation, this time cell, C1, and select “Copy” from the Edit menu or right-click on the cell C1 and select “Copy” from the drop-down menu.
3. Next, select the cells you wish to copy the equation to and select “Paste” from the right-click menu.



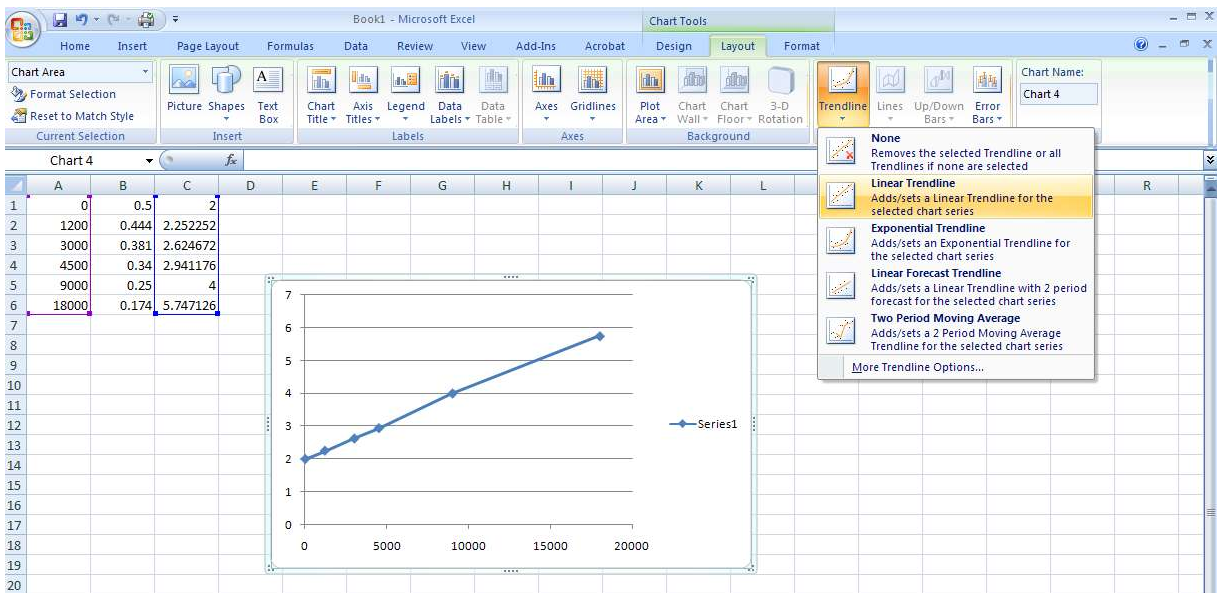
4. The new data now appears. Notice that each cell contains the calculation from the adjacent cell. Now, it's time to edit the data that is plotted. To do this, once again, select “Select Data” from the menu bar above OR right-click on the plot and pick “Select Data” from the drop down menu.

- This time, select “Edit” in the dialog box. Then, click on the “Select Y Values” icon and select the data in the new column as you did previously. When you click on “OK”, the new data is plotted.

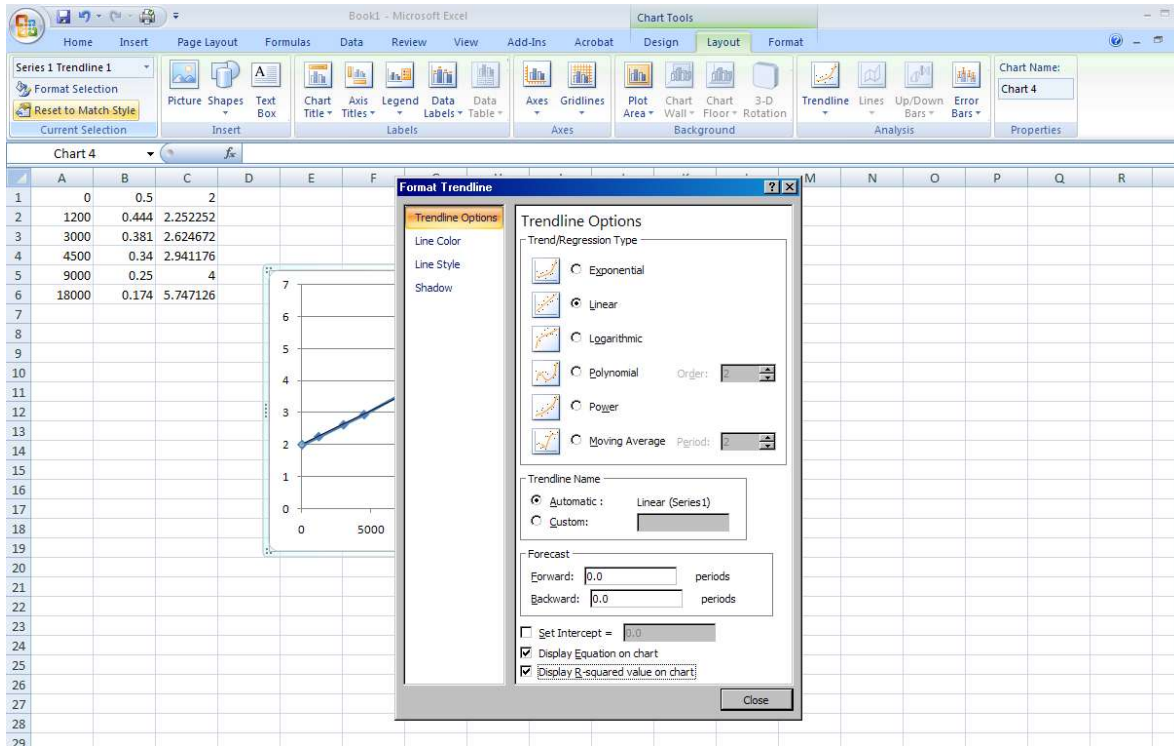


Adding a trend line and equation

- Click on the plot and from the menu bar, select “Layout”. Select “Trendline” and in this case, “Linear Trendline” from the drop down menu.



When you do this, a fitted line will appear. What we would like Excel to do next, is to give us the quality of the fit (R^2) and the equation for the fitted line. To do this, click on the “Trendline” drop down from the menu again. This time, go to the bottom of the list and select “More Trendline Options”. Another dialog box will appear. (Also, you can right-click on the trendline itself and select “Options”)



Select “Display Equation on Chart” and also “Display R squared value on Chart” from the options.

At this point, you may customize further by editing the Title and colors etc., however, you have the essentials in place.