

## Graphing with Excel

Students can assess their graphing skills by comparing their hand-drawn graphs to those created with a graphing program like Excel:

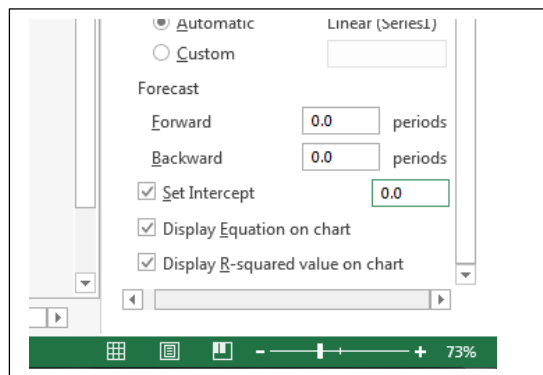
Enter the data for your standard curve into Excel so that you can create an X-Y scatterplot. Be sure to organize the data so that the X-values are on the left and the y-values are in the column immediately to the right (like a coordinate pair would be written  $x, y$ ). Once the data is entered, select those cells containing the data that you wish to graph. Under the “Insert” tab, click on the option for “Scatter”. Choose the option that does not connect the dots with any lines. When the graph appears in the middle of your spread sheet, right click on it and select “move chart” (this option won’t appear if you click on certain chart elements; if you click on the blank space around the grid but still within the graph, this option should appear). In the box that appears, select the option “As a new sheet.” This will spread the points and features of the graph more appropriately than small graphs that are squished onto a data table.

Next, we need to give the graph an appropriate title and label the axes, including units. When you again click on the graph, two tabs with “Chart Tools” appear in the menu bar at the top of the page. Click on “Design.” All the way to the left, there is a pull-down menu to “Add a Chart Element.” Here you find the options you need to add the axes labels.

Once the graph is labeled to your satisfaction (including units!), it is time to insert a trendline. The option for this is located in the same pull-down menu that we just used to add the axes labels. Hover the mouse over “Trendlines” and several options appear. Select “More Trendline Options.” In the menu bar that appears to the right of the document, select “Trendline Options” in the top menu (icon looks like a bar graph). Make sure that “Linear” is selected. Scroll down the options and check off all three boxes at the bottom (See figure). Set y-intercept to zero. Once these are selected, the equation of your trendline should appear on your graph.

Compare this equation to the one that you got when you graphed the data by hand.

Were you pretty close? Why or why not?



If you were not close to what you got with the computer, what can you do differently next time to get a more accurate representation of the data with your line of best fit?