In this technology assignment, you'll learn how to graph exponential functions. This will be a useful skill to learn for projects involving exponential functions. In that project you'll solve an exponential equation algebraically and then verify this solution with the Method of Intersection. In this technology assignment, we'll focus on applying the Method of Intersection to an exponential equation.

The exponential equation you'll solve is

$$F = e^{0.1L \cdot x}$$

where F is the number of letters in your full first name and L is the number of letters in your last name. If your name was Al G, you would be solving

$$2 = e^{0.1x}$$

Apply the Method of Intersection on your Calculator

1. To find the solution of your equation graphically, you'll need to apply the Method of Intersection. This means you'll graph each side of your equation. If your name were Al G, you'd graph

$$Y_1 = e^{0.1x}$$

$$Y_2 = 2$$

Enter each equation into your calculator's equation editor using the $\boxed{Y=}$ button.

2. Set an appropriate window by pressing the $\boxed{\text{WINDOW}}$ button. A good starting point would be a standard window. Press $\boxed{\text{GRAPH}}$ to see the graph. If you don't see two curves and the point of intersection between these curves, adjust your window.

3. Once you have found a window containing the point of intersection, estimate the location of the point of intersection by pressing $\boxed{\text{2nd}}\boxed{\text{TRACE}}$ and select 5: intersect. Once you have located the point of intersection, write down it location and the window you used. You'll need these values to make your graph in Excel.

Apply the Method of Intersection in Excel

4. Follow the instructions in the video in the technology assignment's folder to create a graph like the one on your calculator. Make sure you use your equation and not the one in the video.

5. As indicated in the video, you'll turn in a Word document containing the equation you solve (shown using Mathtype) and the corresponding graph that demonstrates what the solution is using the Method of Intersection.

6. Before you attach your document to the Turn In page, make sure it includes the following:

      a. Two different graphs – one will be a horizontal line and the other will be an increasing exponential.
      b. A point of intersection between the two graphs.
      c. Labels on each axis with either x or y.
      d. Label on the point of intersection.
      e. A circle on the point of intersection.

If any of these items are missing, like the circle of label on the point of intersection, and you put them on the graph in Excel. Remember that the graph must be selected by clicking on its border before you Insert a Shape.