**Solving Linear Regression Problems Using the TI 83 Graphing Calculator**

Linear Regression Line --- a best fitting line for a certain group of data that have been plotted. This allows you to make predictions about where other points would most likely fall.

***Instructions for Creating a Scatterplot and Linear Regression Line on the TI - 83 Calculator***

1. To enter data press STAT, EDIT
   1. If there is old data in L1 and L2, clear the lists.
      1. Press STAT, CTRL List (option 4), and type ***L1, L2*** (the keystrokes are: 2nd , 1, 2nd, 2, and the comma key) and press ENTER
   2. Press STAT, then EDIT. Enter the data values into the first list, which the calculator calls L1 and the matching data values into the second list, L2.
2. To plot these data points on a graph
   1. Press STAT PLOT, choose Plot 1 and press ENTER
   2. Select ON and press ENTER
   3. Choose your scatter plot type
   4. Xlist is ***L1*** and Ylist is ***L2***
   5. Mark: Choose whichever mark you like for plotting the data
3. Graphing the data
   1. Press the WINDOW key.
   2. Set the lowest X value (smallest distance) in L1as Xmin.
   3. Set the largest X value Xmax.
   4. Find the difference between Xmax and Xmin and let the Xscl = that result.
   5. Use similar reasoning to set the Yscl.
   6. Press GRAPH
   7. You can also just choose Zoom, ZoomStat and the calculator will set the window for you and draw the graph.   
      \*\*\*If you don't see your scatterplot, here are a couple of possible reasons why:
      1. If your calculator says, ERR: DIM Mismatch, check your 2 lists to see if you have the same number of elements in each list (you may not). Do this using STAT , EDIT, edit.
      2. If nothing appears on your graph, you may not have turned Plot 1 on. Do STAT PLOT, then turn Plot 1 on. Now, hit GRAPH again.
      3. Your Window is not set up as you thought it was. Hit WINDOW and check it.
4. To get the linear regression line to go through the scatterplot
   1. Press STAT
   2. Choose CALC
   3. Choice #4, LinReg(ax + b). (Or whichever regression model you think will be the best fit)
   4. This will take you to the home screen, showing you LinReg (ax+b), etc.
   5. Press ENTER and values for a and b will be given.
5. To Import these values into Y1 =,
   1. Press the y= key. (Clear out any equations currently in here.)
   2. Put the cursor to the right of Y1 .
   3. Press the VARS key located just below the down arrow key.
   4. Go to #5, statistics, and enter this.
   5. Select EQ using the right arrow key.
   6. Select choice #1, RegEQ
   7. Press ENTER. Your regression equation should have been copied into the Y1 = section of the calculator.
   8. Press GRAPH, and you should see the line of regression cut through the scatterplot.