Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Ms. Klimczuk – AP Statistics

Chapter 6 – Graphing Calculator Activity

***Activity 1: Let’s use our graphing calculators to make a scatterplot.***

Let’s give our data names. This is useful when you have a lot of data because sometimes it can get confusing as to what your L1, L2, L3, etc. actually stood for. To see how, let’s store some data that shows the change in tuition prices for a university over the years starting with 2000.

|  |  |
| --- | --- |
| Year starting with 2000 | Tuition |
| 0 | 10,000 |
| 1 | 10,500 |
| 2 | 11,000 |
| 3 | 12,000 |
| 4 | 13,000 |
| 5 | 15,000 |
| 6 | 20,000 |
| 7 | 28,000 |
| 8 | 38,000 |
| 9 | 47,000 |

Go to STAT Edit, place the curser on L1, and use the arrow key to move to the right across all the lists until you encounter a blank column. Type YR to name the first variable, and hit ENTER. Now enter the years starting with 0 into this column.

Now, go to the next blank column and type TUIT to name the second variable, and hit ENTER. Now enter the tuition into this column.

Now, set up the scatterplot. Do this by turning the PLOT1 on and choose the scatterplot icon. Identify which lists you want to us. To specify your X-LIST, go to 2nd LIST NAMES. Scroll down the list of variables until you find YR and hit ENTER. Do the same thing for your Y-LIST, but select TUIT.

Now, select ZOOMSTAT to see your scatterplot.

You can use the TRACE feature to see each x-value and y-value for each point.

**QUESTION: What can you tell about the trend in tuition costs? (Remember: Direction, Form, and Strength).**

***Activity 2: Let’s use our calculators to find the correlation.***

Hit 2nd CATALOG. Scroll down to DiagnosticOn, and hit ENTER.

NOTE!!!!!!!: This plot doesn’t look very linear, so finding the correlation isn’t a good option for this data, but we will fix this in a minute. However, let’s just do this so you know how to find the correlation when the data is linear. DO NOT DO THIS IN THE FUTURE FOR NON-LINEAR DATA!!!!!

Under the STAT CALC menu, select 8:LinReg(ax + b). You may need to specify your lists, so import the variable names from the LIST NAMES menu, separated by a comma, to create the command LinReg(a+bx)LYR,LTUIT.

**QUESTION: What is the r-value? If this scatterplot was linear, what would it say about the cost of tuition?**

***Activity 3: Let’s use our calculators to straighten this curve and find the correlation (which will now be an appropriate measure of association).***

Go back to the main screen. Take the LOG(TUIT) and STOre those results in L1. Then hit ENTER. Now make the new scatterplot by going back to STATPLOT and changing the setup so that the Y-LIST is L1. Press ZoomStat again.

The plot should be straightened.

**QUESTIONS:**

**What can you tell about the trend in the log of tuition costs? (Remember: Direction, Form, and Strength).**

**What is the correlation coefficient of the plot?**

**What does the r-value tell us about the log of tuition prices?**