**5.7 Linear Regression Project- Algebra I Quadratic Emphasis**

***UNKNOWN DATA***

For this project you will randomly pick a set of data from the options available. With this data you will have to create a background story that explains the data, including why there may be a certain correlation, causation, or outliers. Therefore you will be defining the variables. You will complete the following steps and present them to the class. You will be working in groups of 3-4 students.

Step 1: Graph the data on a piece of poster board in the form of a scatter plot (include the table).

Step 2: Find the linear regression equation and present this somewhere on your poster (round to the nearest hundredth).

Step 3: Graph the linear regression equation “line of best fit” on your scatter plot.

Step 4: Define your variables. (Label the x and y axis and create a title for your poster)

Step 5: Use your equation to predict a data value not present on your scatter plot. Write this prediction on your poster.

Step 6: Write on your poster the value of r. Is there a strong/weak positive correlation or a strong/weak negative correlation or neither? Write your type of correlation on your poster.

Step 7: Type up a full detailed analysis of your data explaining your background story/defined variables. This will be turned in separate to your poster and will help prepare you for your presentation.

In the end, as a group you will present your work (everyone should have a part in the presentation) and handing in one copy of:

* *A Poster*
* Title (names can go under title or on back)
* Scatter plot with data points and line of best fit that matches the linear regression equation (x and y axis labeled)
* Table of values
* Linear regression equation
* Prediction of an unknown data point
* Description of the type of correlation (include the value of r)
* *A typed up Analysis*
* What is the story behind your data?
* What do the variables represent?
* What type of correlation is this? Explain how you know.
* Is there causation? Why do you think so?
* Are there any outliers? What do the outliers represent in terms of your story?
* Why did you find that missing data value? What does it mean in relation to your story?
* Why is finding the linear regression equation/“line of best fit” helpful for you data?