**Mathematical Modeling Project**

**Functions Statistics and Trigonometry**

**Mrs. Schenkel**

**Assignment:**

1. Find data (minimum of 10 data points) that you can use a **linear or quadratic** model to fit. Once you find your data points **you must site your source.**
2. Use the program fathom to build a model for your data points and analyze the data to determine the appropriateness and accuracy of your model.
3. Using Microsoft Word, build a **one page** analysis of your data. The following components must be on the presented page.

* Data Values
* Independent Variable Assignment
* Dependent Variable Assignment
* Scatterplot of the data with the model you created shown (screen shot directly from fathom)
* Final Model
* Analysis of the Data (from residuals – both pattern and size) in complete sentences
* Create two problems you can solve using your model. Give the problem and its solution showing all of your work.
* For one you must give the independent variable and use algebra to solve for the dependent variable
* For one you must give the dependent variable and use algebra to solve for the independent variable

***Grading Rubric***

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| **Criteria** | **Points Possible** | **Points Earned** |
| Assignment submitted in the correct format (Microsoft Word Document) | 2 points |  |
| Data can be modeled using a linear or quadratic function | 2 points |  |
| Data clearly shown | 1 point |  |
| Source of data is clearly sited | 1 point |  |
| Independent Variable Assigned | 1 point |  |
| Dependent Variable Assigned | 1 point |  |
| Scatterplot is shown and accurate based on assigned independent and dependent variables | 2 points |  |
| Model is fit through data points and is clearly shown in the scatterplot | 2 points |  |
| Model is clearly given | 2 points |  |
| Analysis of Residuals (both pattern and size) in complete sentences | 2 points |  |
| Problem and Solution (given independent variable and solve for dependent variable) | 2 points |  |
| Problem and Solution (given dependent variable and solve for independent variable) | 2 points |  |
| Project is aesthetically pleasing. Information is organized and easy to read. | 1 point |  |
| Project is creative. Feel free to use color or insert art that might add to the appeal of your project. | 1 point |  |

**This assignment can be submitted electronically to Mrs. Schenkel OR you can turn in a hard copy paper.**

**This Project will count as a 22 point Test Grade.**