# Exploring Data Project

Step 1: Look up data or collect your own data about two related quantitative variables. This could be how a certain quantity changes over time (price of a certain good, number of homes with internet, number of listeners of a podcast, etc.) or two variables that may be related (grams of sugar vs. grams of fat in foods, temperature and number of people at a park, income, and number of vacation days in a year, etc.).

Cleary define your independent and dependent variable. What exactly is being measured? (For example, is the independent variable the actual year or the number of years since _____?). Record your data in the table on the next page. You must have at least 10 data points, though the table has room for 20.

Step 2: Determine if your data is best modeled by a linear, quadratic, cubic, quartic, or exponential regression and explain your choice. Use your graphing calculator to generate a regression model and write it below.

Step 3: Pick a point in your data set. Does your regression model give an overestimate or underestimate for this data point? Calculate and interpret the residual.

Step 4: Make a residual plot for the regression model that you think best models the data. Choose an appropriate scale and label your axes. Explain using the residual plot why this model is appropriate.

Independent Variable:	Dependent Variable:
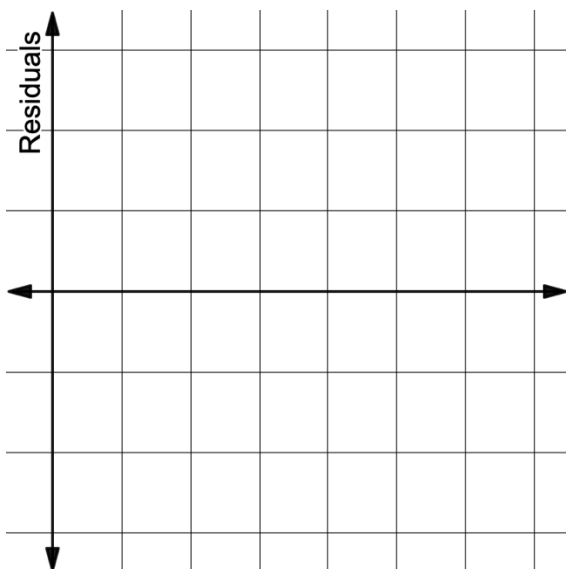
Step 5: What assumptions does your chosen model make?

Step 6: What do you think are the limitations of your chosen model? Explain.

Step 7: Use your model to make a prediction for a value that is not in your data set. How reasonable do you think this prediction is? Explain.

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