College Algebra 1

5.7 Scatter Plots and Trend Lines

Starter:



**Scatter Plots and Prediction Equations**

Data with two variables, such as year and number of visitors, are called \_\_\_\_\_\_\_\_\_\_\_\_\_. A set of bivariate data graphed as ordered pairs in a coordinate plane is called a \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_. A **\_\_\_\_\_\_\_\_\_\_\_\_** is a measure of the strength of a relationship between two quantities.

A scatter plot can show whether there is a \_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_, or \_\_\_\_ correlation between two variables. Correlations are usually described as \_\_\_\_\_\_ or \_\_\_\_\_\_. In a strong correlation the points of the scatter plot are closer to the graph of the line than the points representing a weak correlation. When you find a line that closely approximates a set of data, you are finding a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for the data. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is when a change in one quantity causes a change in a second quantity. A correlation between quantities does not always imply causation.

An equation of such a line is often called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because it can be used to predict one of the variables given the other variable. To find the line of best fit and a prediction equation for a set of data, select two points that appear to represent the data well. This is a matter of personal judgment so your line and prediction equation may differ from those of others.



1. **GOT IT? Consider the population of a city and the number of letters in the name of the city. Would you expect a** *positive correlation***, a** *negative correlation***, or** *no correlation* **between the two sets of data? Explain your reasoning.**
2. **GOT IT? Consider the cost of a family's vacation and the size of their house. Is there likely to be a correlation? If so, does the correlation reflect a causal relationship? Explain.**













Hw: Section 5.7 p. 340 #1-6 (Use Graph Paper)