

Name: _____

Date: _____

4.5 Analyzing Lines of Fit – Part 2

Essential Question: How can you analytically find a line of best fit for a scatter plot?

Using a graph or its equation to _____ a value between two _____ values is called _____. Using a graph or its equation to _____ a value outside the range of known values is called _____. In general, the farther _____ a value is from the known values, the less _____ you can have in the _____ of the _____.

EXAMPLE 4 Interpolating and Extrapolating Data

Refer to Example 3. Use the equation of the line of best fit.

- Approximate the duration before a time of 77 minutes.
- Predict the time after an eruption lasting 5.0 minutes.

Correlation and Causation

When a _____ in one variable causes a change in another _____, it is called _____. Causation produces a strong _____ between the two variables. The converse is not true. In other words, _____ does not imply _____.

EXAMPLE 5 Identifying Correlation and Causation

Tell whether a correlation is likely in the situation. If so, tell whether there is a causal relationship. Explain your reasoning.

- time spent exercising and the number of calories burned
- the number of banks and the population of a city