Name\_

Date\_\_\_\_\_Pd\_\_\_\_

## **Unit 1 CP Review: Scientific Methods**

1. The following data are based on charges for membership in a CD purchasing club.



- a. What are the units of slope for this graph?
- b. What is the meaning of the slope?
- c. What are the units of y-intercept for this graph?
- d. What is the meaning of the y-intercept?
- e. What is the mathematical equation that states the relationship described by the graph?
- f. How much is the first CD? How much is each additional CD after the first?
- g. Estimate the cost of 13 CD's. How do you know?

3. The graph below shows the relationship between scores on the SAT exam and the number of years students study science.



a. What is the mathematical equation that states the relationship described by the graph?

- b. Write a clear, English sentence that describes the meaning of the slope.
- c. What would be the SAT score of a student who took seven science classes?

- 4. A student performed an experiment with a metal sphere. The student shot the sphere from a slingshot and measured its maximum height. Six different trials were performed with the sphere being shot at a different angle from the horizontal for each trial.
  - a. What is the relationship being studied?
  - b. What is the independent variable in this experiment?
  - c. What is the dependent variable in this experiment?
  - d. What variable must be held constant throughout this experiment?
- 5. Describe the relationships that we proved in our pendulum lab. The variables included were period, mass, amplitude, and length. Use complete, English sentences to describe the relationships!!

mass vs period

length vs period

amplitude vs period

6.



a. What type of relationship does this graph suggest?

b. Estimate the number of accidents for a 28 year old person. How do you know?

7. Below is a graph of the relationship between scholarship awards and the effort students exerted trying to win scholarships.



- a. Write the mathematical equation that states the relationship described by the graph.
- b. What is the rate at which scholarships are affect by effort?
- c. What does the y-intercept illustrate?
- d. Using the mathematical model or the graph, how many applications would be needed to earn \$8000?

8. For each of the following graphs, state the relationship between the variables.

