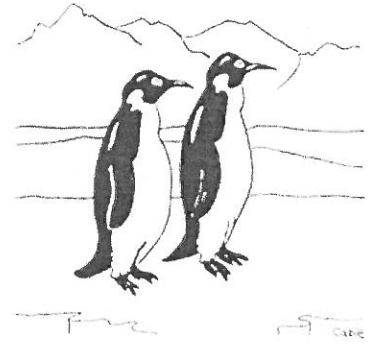


Correlation v. Causation

Student: _____

#1-5, Positive, negative or no correlation?

1. Amount of calories you consume versus your weight.
2. Amount ice cream consumed on a beach vs. the number of people who go in the water.
- 3 The number of police cars on a street vs. the number of speeders on the street.
4. The amount people in a family vs. the number of cars the family owns.
5. A person's age vs. the number of medical conditions they have.



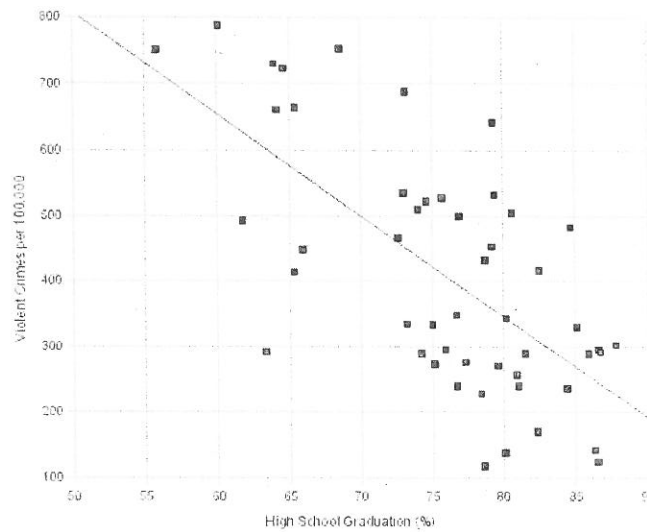
"Do you think all these film crews brought on global warming or did global warming bring on all these film crews?"

**#6-9, Which situation describes a correlation that is *not* a causal relationship?
Be ready to defend your answer.**

6. The length of a cube and the volume of the cube
7. The distance traveled and the time spent traveling
8. The amount of cantaloupes sold in Idaho and the crime rate in Wyoming
9. The age of a child and the number of siblings that child has
10. Give an example of two topics that have a negative relationship AND decide if it is causal.

11. The following chart shows violent crime rates compared to high school graduation for all fifty states.

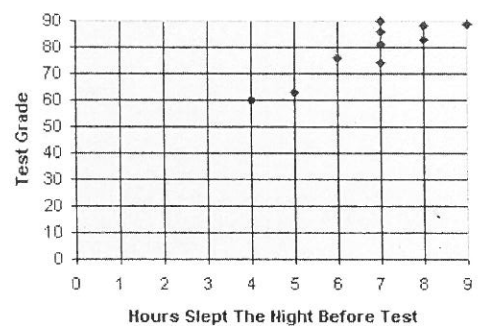
- a. Determine if the correlation is positive, negative, or none.
- b. *Estimate* the correlation coefficient.
- c. Do you think this an illustration of cause and effect, or are these two variables simply correlated ?



12. A history teacher asked her students how many hours of sleep they had the night before a test. The data above shows the number of hours the student slept and their score on the exam

- a. Determine if the correlation is positive, negative, or none.
- b. *Estimate* the correlation coefficient.
- c. Do you think this an illustration of cause and effect, or are these two variables simply correlated ?

History Grades In Relation To Hours Slept



13. Mr. Humberger gave a math test to all the students at his high school. He made a startling discovery that the tall students did better than the shorter ones. He concludes: *As your height increases, so does your math ability.*

- a. What type of correlation is this?
- b. Is there causation? Why or why not?

14. In the present economy families are trying to find ways to save money. Some families are not eating out as much in order to spend less money. Causation statement: *The more you eat out, the more money you spend.*

- a. What type of correlation is this?
- b. Is there causation? Why or why not?