

Name _____ Period _____ Date _____

Correlation vs. Causation Homework

Identify the relationship between the two quantities in the given question as *causation* or *correlation*.

1. The number of cold, snowy days and the amount of hot chocolate sold at a ski resort.
2. The number of miles driven and the amount of gas used.
3. The number of additional calories consumed and the amount of weight gained.
4. The age of a child and his/her shoe size.
5. The amount of cars a salesperson sells and how much commission he makes.
6. The number of cars traveling over a busy holiday weekend and the number of accidents reported.
7. The number of homework assignments turned in and how well an individual does in class.
8. The annual salary and blood pressure for men ages 20-60

9. Which of the following statements shows a relationship that is correlated but *not* causal?

- A) The amount of rainfall received and level of water in the lake.
- B) The number of lights left on each day and the amount of the electric bill.
- C) The increase of warm, sunny days and the number of ice cream vendors visible.
- D) The number of hours worked and how much money is made.

10. Which of the following statements shows a relationship that is correlated but *not* causal?

- A) The number of tardies to class and the number of detentions received.
- B) The season of the year and the number of water related injuries/deaths.
- C) As the temperature rises, more the mercury in a thermometer will expand and rise.
- D) The larger the dimensions of a rectangular patio, the more square footage there will be.

11. Which of the following statements shows a causal relationship and *not* just a correlated one?

- A) An individual's decision to work in construction and his diagnosis of skin cancer.
- B) A decrease in temperature and the increase in attendance at an ice skating rink.
- C) As a child's weight increases so does her vocabulary.
- D) The number of minutes spent exercising and the amount of calories burned.

12. Which statement below might be caused by the statement, "The more the furnace runs...."?

- A) the less time individuals will spend outside
- B) the longer you will have to let your car warm up
- C) the colder it is outside
- D) the warmer the house becomes

13. Consider a large number of countries around the world. There is a positive correlation between the number of Nintendo games per person x and the average life expectancy y . Does this mean that we could increase the life expectancy in Rwanda by shipping Nintendo games to that country?

- A) Yes: the correlation says that as Nintendos go up, so does life expectancy.
- B) No: if the correlation were negative we could accept that conclusion, but this correlation is positive.
- C) Yes: positive correlation means that if we increase x , then y will also increase.
- D) No: the positive correlation just shows that richer countries have both more Nintendos and higher life expectancies.
- E) It makes no sense to calculate correlation between these variables.