

Correlation vs. Causation: CORRELATION IS NOT CAUSATION.

Correlation: Two variables tend to be related to each other. The correlation may just be a coincidence.	Causation: One variable CAUSES the other to change. Causation is NOT a coincidence. Causation has a DIRECTION (A causes B, not the other way around)
Positive Correlation: When one variable increases, so does the other. When one decreases, so does the other. (Think of a line with positive slope).	Negative Correlation: When one variable increases, the other decreases. When one decreases, the other increases. (Think negative slope).

Example: # of Shark Bites and gallons of ice cream sold per month in the USA.

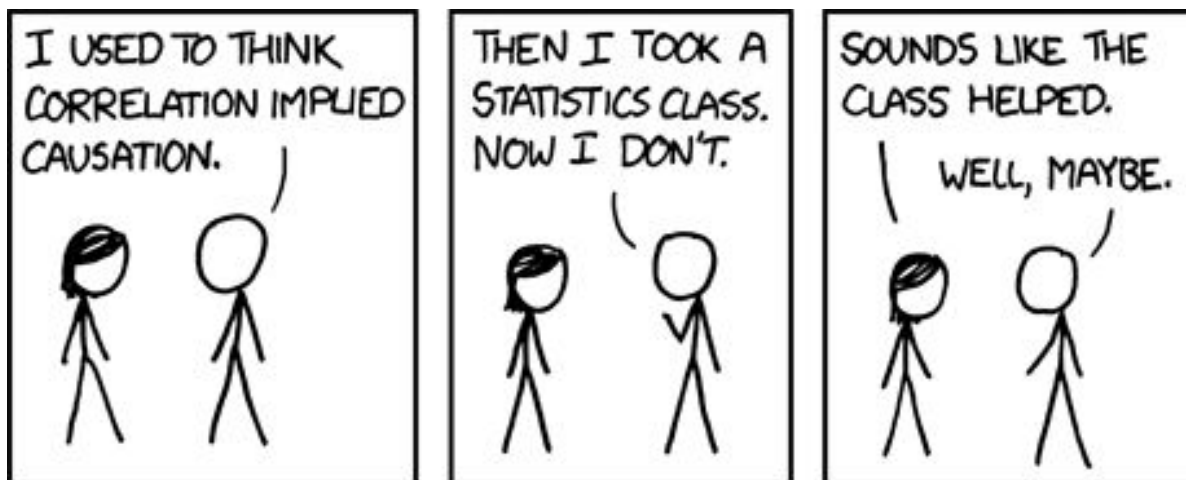
The # of shark bites tends to increase as the number of gallons of ice cream sold increases. When more ice cream is sold, more people are bitten by sharks. Similarly, when very little ice cream is sold, very few people are bitten by sharks.

This is a perfect example of POSITIVE CORRELATION. When one variable goes up, so does the other. When one decreases, so does the other. The two variables are related to each other.

However, this is NOT causation. There is no way that shark bites are causing people to buy more ice cream. There is also no way that buying more ice cream makes you more likely to be bitten (unless it gives you a tummy ache and you can't swim away... nvm)

So.... what's the explanation? Is there something ELSE going on that explains both shark bites and ice cream sales?

Answer: BOTH shark bites and ice cream sales increase in summer, and decrease in winter. It is all about the weather. The two variables don't cause each other to change. They are merely correlated.



Write a sentence that explains the punch line of the comic strip:

You try: Describe the correlation as POSITIVE or NEGATIVE. Then, decide if it is truly CAUSATION or merely CORRELATION. Indicate the direction of the Causation (e.g. warm weather causes shark bites)

- 1. # of hours spent studying for a test and the grade on that test.**
- 2. # of Pumpkin Spice Lattes drank and # of calories consumed**
- 3. # of snowboarding injuries and # of hot chocolates sold (on Mt. Hood)**
- 4. # of vitamin supplements you eat and lifespan**
- 5. Average # of Hours of social media use and self-esteem**
- 6. Average height of an NBA team and # of wins for the season**