

Correlation vs. Causation Practice

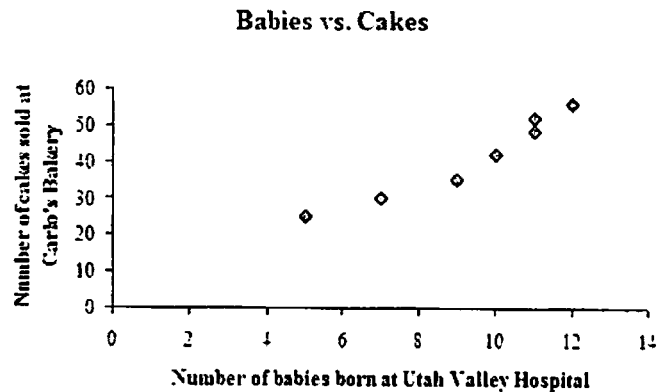
Name Key

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When a scatter plot shows a correlation between two variables, even if it's a strong one, there is not necessarily a cause-and-effect relationship. Both variables could be related to some third variable that actually causes the apparent correlation. Also, an apparent correlation simply could be the result of chance.

Example 1: During the month of June the number of new babies born at the Utah Valley Hospital was recorded for a week. Over the same time period, the number of cakes sold at Carlo's Bakery in Hoboken, New Jersey was also recorded. What can be said about the correlation? Is there causation? Why or why not?

Number of babies born	Number of cakes sold
5	25
7	30
9	35
10	42
11	48
11	52
12	56



- There is a correlation - strong positive
- There is NO causation

Example 2: Mr. Jones gave a math test to all the students in his school. He made the startling discovery that the taller students did better than the short ones. His Causation Statement: *As your height increases, so does your math ability.*

What can be said about the correlation? Is there causation? Why or why not?

Mr. Jones found a positive correlation with his students. However, there is no causation b/c a person's height does not affect their academic ability.

Example 3: In this present economy families are trying to find ways to save money. Families might be thinking about not eating out to spend less money. Causation Statement: *The more you eat out, the more money you spend at restaurants.*

What can be said about the correlation? Is there causation? Why or why not?

There is a positive correlation. Also, there is causation b/c the more you eat out, the more money you spend.

Correlation

- Statistical way to measure the relationship between two sets of data.
- Both observed at the same time

Ex: College students more likely to vote than that of their peers not in school.

- Correlation (school does not CAUSE you to vote)

Ex: Hit your little sister and she ~~cries~~ ^{cries}.

- Causation