

Name:

Date:

1. I had pizza and candy delivered to the fifth period Statistics & Research Methods class, while the third period Statistics & Research Methods class was a control group with no pizza or candy. I hypothesized that the period with the pizza party would learn the material better, as measured by test scores the test the following week. State whether each variable below is extraneous, confounding, or neither.

a) party (pizza or none)

b) success in the class (test score)

To see if pizza affects how well students learn, everyone either did or did not have pizza.

I was using test scores as a way to measure learning success.

c) time of day (8:35 or 10:45)

d) class period (3rd or 5th)

Everyone without pizza had class at 8:35, and everyone with pizza had class at 10:45.

Everyone with pizza had class after everyone without pizza.

e) intelligence (IQ score)

f) motivation (scale of 0 to 10)

Some people in each group are smarter than others.

Some people in each group are more motivated than others.

2. The class average was significantly higher in fifth period, with the pizza party, than in third period. What causal conclusion might people draw from this finding that is not necessarily correct?

The results make it seem that _____ causes people to _____.

However, this was not a true experiment (there was no random assignment), so we cannot conclude that there is a cause-and-effect relationship.

3. Anthony hypothesizes that living far away from school makes it harder to do well in school. Use the given explanation to state whether each variable below is mediating, confounding, or neither.

a) Living far from school takes time away from schoolwork, resulting in lower grades, so free time is...

b) Some classes are more difficult than others, which makes it harder to get good grades, so class difficulty is...

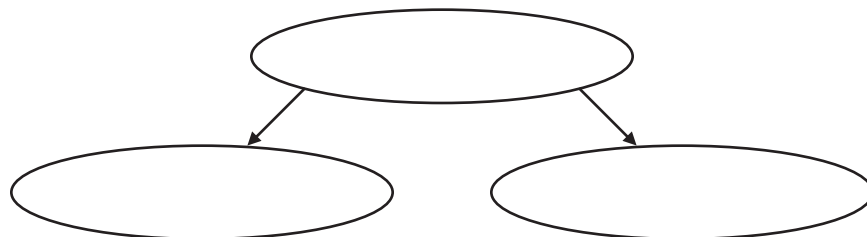
c) Some students are more motivated than others, which causes them to do better in school, so motivation is...

d) If parents with college degrees and high-paying jobs are less likely to live far from town, then socioeconomic status is...

4. For one of the following claims, identify a possible confounding variable, sketch a diagram showing it affecting both the independent and dependent variable, and write a sentence in context explaining how the confounding variable could make the claim true correlationally but not causally.

a) People who exercise regularly tend to have better GPAs.

b) People with college degrees tend to have higher salaries.



People who _____ tend to have _____, making it appear that _____ affects _____. This might be true, but the relationship between these variables could also be because people who are _____ are more likely to _____ and are also more likely to _____.