

Name:

Statistics & Research Methods Homework 1

1. Fill in each blank with a term from the chapter. (Terms are in capitals in the notes.)

a) Reed is testing to see if people drive red cars faster than white cars. His _____ is color, and the _____ he is using are red and white. His _____ is speed, which has a _____ level of measurement. The symbols he will use to show his results will be \bar{x}_1 and \bar{x}_2 for the averages and s_1 and s_2 for the standard deviations. His study is a(n) _____ because he is not _____ what color car each person drives. Because of this, even if he finds out that the red cars average a much higher speed, he will not be able to conclude that there is a _____ between car color and speed. In other words, he will not be able to conclude that car color actually _____ speed.

2. In a study of 6200 American kindergartners, Shah, Weeks, Richards, and Kaciroti (2018) found that greater curiosity was associated with greater achievement in math and reading. Justify or explain each of the following statements.

a) The independent variable was curiosity.

b) The dependent variables were math achievement and reading achievement.

c) A mediator variable could be that curiosity leads to greater learning by causing children to ask questions and try new things.

d) They found that socioeconomic status was a moderator variable: The effect was greater for students with lower socioeconomic status.

e) A confounding variable could be preschool attendance: Children who go to preschool have more opportunities to experience new things and gain curiosity, and they also have more opportunities to start learning math and reading.

f) An extraneous variable could be dyslexia.

g) This is not a true experiment.

h) The researchers cannot conclude that curiosity in kindergartners necessarily increases math and reading achievement.

3. In a sample of 976 teenagers, the more harshly their parents verbally disciplined them, the more depressed and aggressive they tended to be (Wang & Kenny, 2013). Identify each of the following.

a) the independent variable

b) both dependent variables

c) one or more possible mediator variables

d) one or more possible moderator variables

e) one or more possible confounding variables

f) one or more possible extraneous variables that is not confounding

4. Based on your answers to #3, what do you, personally, think are likely reasons why teenagers who are harshly verbally disciplined by their parents are more likely to be depressed and aggressive?