

Name:

1-A Populations and Samples

1. Fill in each blank with μ , \bar{x} , σ , s , p , \hat{p} , or n . Use a subscript of $_1$ for Brook Knoll and $_2$ for Vine Hill.

David is comparing physical fitness of fifth grade boys at Brook Knoll versus Vine Hill. He finds that out of _____ = 25 Brook Knoll boys, the average time to run a lap was _____ = 98.1 seconds with standard deviation _____ = 14.8 seconds, while out of _____ = 28 Vine Hill boys the average time was _____ = 92.9 seconds with standard deviation _____ = 15.0 seconds. _____ = 56% of the Brook Knoll boys and _____ = 46% of the Vine Hill boys could do a pull-up.

2. Identify the following for Phillip's study above.

a) the samples

b) the populations

3. Describe a method of random selection Phillip could use to avoid sampling bias.

1-B Measuring Data

4. For each of the following research questions, explain a clear, specific, and appropriate operational definition for the dependent variable, and identify its level of measurement.

a) Are men more likely than women to stay in their hometown?

c) Do freshmen have higher GPAs than juniors?

d) Do romantic relationships last longer for California high school students than for Oregon high school students?

1-C Research Designs

5. Missa is studying the effects of marijuana on academics. State what you would recommend for the following.

a) the independent variable and its levels

b) the dependent variable, operationally defined

6. Why is Missa's study quasi-experimental instead of experimental?

7. Explain how laziness could be a mediator variable that explains why marijuana affects academics.

8. What are some other possible mediator variables that could explain why marijuana affects academics?

9. Explain how type of assignment (homework versus quiz) could be a moderator variable to test the mediator variable of laziness.

10. What are some other possible moderator variables that could test one of the mediator variables above?

11. Fill in each blank with *a* or *e*.

a) Marijuana ___ffects academics.

b) Marijuana has an ___ffect on academics.

c) The ___ffects of marijuana increase with more usage.

d) Some people are particularly ___ffected by marijuana.

1-D Extraneous and Confounding Variables

12. Assume Missa finds that the marijuana smokers perform worse academically.

a) What would be a causal relationship between academics and smoking marijuana?

b) Why could Missa not conclude this?

c) What can Missa conclude?

13. Name one or more possible extraneous variables for Missa's study above, and explain how they could cause random error.

14. Name one or more possible confounding variables in Missa's study, and explain how they could cause systematic error.