

Name:

Partners:

Statistics

Date:

Review 1 Version A

[A] Anna hypothesizes that soldiers are more likely than civilians to support gun rights because being in the military gives people an appreciation for guns. In a survey of 120 Americans, 41 out of 50 soldiers and 28 out of 70 civilians say they would like to see stronger national gun rights. Circle whether each statement is true or false.

T F 1. $p_2 = 40\%$

T F 2. Anna's data are nominal.

T F 3. Anna's study is an experiment.

T F 4. Anna used random assignment.

T F 5. Nationality is a confounding variable in Anna's study.

T F 6. One level of Anna's independent variable is civilians.

T F 7. Anna's independent variable is the 50 soldiers and the 70 civilians.

T F 8. In the phrase "military service affects attitudes about gun rights," *affect* should be *effect*.

T F 9. Anna's sample is the 41 soldiers and 28 civilians who say they support stronger national gun rights.

T F 10. Anna can conclude that being in the military tends to make people more likely to support gun rights.

T F 11. Anna has demonstrated a causal relationship between military service and support of gun rights.

T F 12. A possible confound is that the type of person who joins the military is likely to be a supporter of gun rights in the first place.

[B] August hypothesizes that a college degree causes people to get higher salaries. He surveys 80 adults, half of whom graduated college.

1. State the levels of the independent variable.

2. State exactly how you would suggest he operationalize his dependent variable.

3. Check the appropriate box for each item.

- a) random assignment no random assignment
- b) experiment quasi-experiment
- c) nominal dependent variable ordinal dependent variable interval dependent variable ratio dependent variable

4. Make up reasonable results for his study that match his hypothesis. Label each statistic with an appropriate symbol (e.g., \bar{x}_1).

5. State a possible mediator variable, and use it to explain how college degrees may result in higher salaries.

6. State a possible confounding variable, and use it to explain why college degrees may not actually affect salaries even if people with college degrees do in fact have higher salaries on average.

[C] Do the following to organize your group's reviews.

1. Make sure your name and your partners' names are at the top of your review the first day.
2. Staple the reviews in order, all facing the same way. Put the staple in the very top left corner if everyone is finished or if the review is due; otherwise put the staple in the top right corner.

Name:

Statistics

Date:

Review 1 Version B

[A] Anna hypothesizes that soldiers are more likely than civilians to support gun rights because being in the military gives people an appreciation for guns. In a survey of 120 Americans, 41 out of 50 soldiers and 28 out of 70 civilians say they would like to see stronger national gun rights. Circle whether each statement is true or false.

T F 1. $p_2 = 40\%$

T F 2. Anna's data are nominal.

T F 3. Anna's study is an experiment.

T F 4. Anna used random assignment.

T F 5. Nationality is a confounding variable in Anna's study.

T F 6. One level of Anna's independent variable is civilians.

T F 7. Anna's independent variable is the 50 soldiers and the 70 civilians.

T F 8. In the phrase "military service affects attitudes about gun rights," *affect* should be *effect*.

T F 9. Anna's sample is the 41 soldiers and 28 civilians who say they support stronger national gun rights.

T F 10. Anna can conclude that being in the military tends to make people more likely to support gun rights.

T F 11. Anna has demonstrated a causal relationship between military service and support of gun rights.

T F 12. A possible confound is that the type of person who joins the military is likely to be a supporter of gun rights in the first place.

[B] Logan hypothesizes that taking Statistics in high school causes people to do better in college. He surveys 40 SVHS graduates who are now in college, half of whom have taken this class.

1. State the levels of the independent variable.

2. State exactly how you would suggest he operationalize his dependent variable.

3. Check the appropriate box for each item.

- a) random assignment no random assignment
- b) experiment quasi-experiment
- c) nominal dependent variable ordinal dependent variable interval dependent variable ratio dependent variable

4. Make up reasonable results for his study that match his hypothesis. Label each statistic with an appropriate symbol (e.g., \bar{x}).

5. State a possible mediator variable, and use it to explain how taking Statistics in high school may cause students to do better in college.

6. State a possible confounding variable, and use it to explain why taking Statistics in high school may not increase success in college even if college students who took Statistics in high school do in fact do better on average.

[C] Bonus.

1. State a possible moderator variable for part [B], and explain how it could be used to test your answer to B #5.

Name:

Statistics

Date:

Review 1 Version C

[A] Anna hypothesizes that soldiers are more likely than civilians to support gun rights because being in the military gives people an appreciation for guns. In a survey of 120 Americans, 41 out of 50 soldiers and 28 out of 70 civilians say they would like to see stronger national gun rights. Circle whether each statement is true or false.

T F 1. $p_2 = 40\%$

T F 2. Anna's data are nominal.

T F 3. Anna's study is an experiment.

T F 4. Anna used random assignment.

T F 5. Nationality is a confounding variable in Anna's study.

T F 6. One level of Anna's independent variable is civilians.

T F 7. Anna's independent variable is the 50 soldiers and the 70 civilians.

T F 8. In the phrase "military service affects attitudes about gun rights," *affect* should be *effect*.

T F 9. Anna's sample is the 41 soldiers and 28 civilians who say they support stronger national gun rights.

T F 10. Anna can conclude that being in the military tends to make people more likely to support gun rights.

T F 11. Anna has demonstrated a causal relationship between military service and support of gun rights.

T F 12. A possible confound is that the type of person who joins the military is likely to be a supporter of gun rights in the first place.

[B] Jacob hypothesizes that attending preschool causes children to have higher academic success in elementary school. He gets 70 fifth graders, half of who had attended preschool, as participants.

1. State the levels of the independent variable.

2. State exactly how you would suggest he operationalize his dependent variable.

3. Check the appropriate box for each item.

- a) random assignment no random assignment
- b) experiment quasi-experiment
- c) nominal dependent variable ordinal dependent variable interval dependent variable ratio dependent variable

4. Make up reasonable results for his study that match his hypothesis. Label each statistic with an appropriate symbol (e.g., \bar{x}).

5. State a possible mediator variable, and use it to explain how taking attending preschool may result in better academic success in elementary school.

6. State a possible confounding variable, and use it to explain why attending preschool may not cause students to do better in elementary school even if students who had been in preschool do in fact do better on average.

[C] Bonus.

1. State a possible moderator variable for part [B], and explain how it could be used to test your answer to B #5.

Name:

Statistics

Date:

Review 1 Version D

[A] Anna hypothesizes that soldiers are more likely than civilians to support gun rights because being in the military gives people an appreciation for guns. In a survey of 120 Americans, 41 out of 50 soldiers and 28 out of 70 civilians say they would like to see stronger national gun rights. Circle whether each statement is true or false.

T F 1. $p_2 = 40\%$

T F 2. Anna's data are nominal.

T F 3. Anna's study is an experiment.

T F 4. Anna used random assignment.

T F 5. Nationality is a confounding variable in Anna's study.

T F 6. One level of Anna's independent variable is civilians.

T F 7. Anna's independent variable is the 50 soldiers and the 70 civilians.

T F 8. In the phrase "military service affects attitudes about gun rights," *affect* should be *effect*.

T F 9. Anna's sample is the 41 soldiers and 28 civilians who say they support stronger national gun rights.

T F 10. Anna can conclude that being in the military tends to make people more likely to support gun rights.

T F 11. Anna has demonstrated a causal relationship between military service and support of gun rights.

T F 12. A possible confound is that the type of person who joins the military is likely to be a supporter of gun rights in the first place.

[B] Jason hypothesizes that iOS allows people to text faster than Android does. He gets 24 iPhone users and 19 Android users as participants.

1. State the levels of the independent variable.

2. State exactly how you would suggest he operationalize his dependent variable.

3. Check the appropriate box for each item.

- a) random assignment no random assignment
- b) experiment quasi-experiment
- c) nominal dependent variable ordinal dependent variable interval dependent variable ratio dependent variable

4. Make up reasonable results for his study that match his hypothesis. Label each statistic with an appropriate symbol (e.g., \bar{x}).

5. State a possible mediator variable, and use it to explain how iOS may provide better texting speed than Android.

6. State a possible confounding variable, and use it to explain why iOS may not provide better texting speed than Android, even if people using iOS do in fact text faster than people using Android.

[C] Bonus.

1. State a possible moderator variable for part [B], and explain how it could be used to test your answer to B #5.