

Solutions are included at the end of the worksheet. This worksheet is optional and will not be turned in, but may be helpful in reviewing material and studying for exams.

1) True or False: Experiments assist the researcher in isolating the causes of the relationships that exist between two variables.

2) Determine the level of measurement of the variable.

category of storm (gale, hurricane, etc.)

A) nominal

B) ratio

C) ordinal

D) interval

3) A drug company wanted to test a new depression medication. The researchers found 600 adults aged 25–35 and randomly assigned them to two groups. The first group received the new drug, while the second received a placebo. After one month of treatment, the percentage of each group whose depression symptoms decreased was recorded and compared. What is the response variable in this experiment?

A) the one month treatment time

B) the type of drug (medication or placebo)

C) the 600 adults aged 25–35

D) the percentage who had decreased depression symptoms

4) A salesman boasts to a farmer that his new fertilizer will increase the yield of the farmer's crops by 15%. The farmer wishes to test the effects of the new fertilizer on her corn yield. She has four equal sized plots of land—one with sandy soil, one with rocky soil, one with clay-rich soil, and one with average soil. She divides each of the four plots into three equal sized portions and randomly labels them A, B and C. The four A portions are treated with her old fertilizer. The four B portions are treated with the new fertilizer. The four C portions receive no fertilizer. At harvest time, the corn yield is recorded for each section of land. What is the claim she is testing?

A) The new fertilizer yielded at least a 15% improvement.

B) The A sections had at least a 15% increase in yield.

C) The total yield increased at least 15%.

D) The average soil field had at least a 15% increase in yield.

5) An online newspaper conducted a survey by asking, "Do you support the lowering of air quality standards if it could cause the death of millions of innocent people from pollution related diseases?" Determine the type of bias.

6) Classify the variable as qualitative or quantitative.

the colors of book covers on a bookshelf

A) quantitative

B) qualitative

7) Determine whether the study depicts an observational study or an experiment.

A medical researcher obtains a sample of adults suffering from diabetes. She randomly assigns 52 people to a treatment group and 52 to a placebo group. The treatment group receives a medication over a period of three months and the placebo group receives a placebo over the same time frame. At the end of three months the patients' symptoms are evaluated.

8) Which of the following is not true of statistics?

A) Statistics can be used to organize and analyze information.

B) Statistics involves collecting and summarizing data.

C) Statistics is used to draw conclusions using data.

D) Statistics is used to answer questions with 100% certainty.

9) Determine whether the underlined value is a parameter or a statistic.

In a survey conducted in the town of Atherton, 25% of adult respondents reported that they had been involved in at least one car accident in the past ten years.

10) Determine the sampling technique which is used.

Thirty-five math majors, 64 music majors and 35 history majors are randomly selected from 454 math majors, 309 music majors and 567 history majors at the state university. What sampling technique is used?

A) convenience

B) stratified

C) random

D) cluster

E) systematic

11) Determine whether the quantitative variable is discrete or continuous.

the number of pills in an aspirin bottle

Answer Key

Testname: MATH 1040 WORKSHEET 1

- 1) True
- 2) C
- 3) D
- 4) A
- 5) Response bias; poorly worded question
- 6) B
- 7) experiment
- 8) D
- 9) statistic
- 10) B
- 11) discrete