



Practice with Collecting Data

Name Key

Directions: Read carefully. Be ready to justify your answers.

1. A doctor wants to determine the effectiveness of a new nasal spray on patients experiencing the flu. The flu patients are separated into two groups with the nasal spray prescribed for only one of the groups. The results are compared. Which type of study best describes this situation?

- 1) survey 2) census 3) observational study 4) designed experimental study

2. Which method of collecting data would be best served for a study to determine the effect a tidal wave would have on Los Angeles?

- 1) survey 2) simulation 3) designed experiment 4) observational study

3. An elementary school offers voluntary after-school review sessions for students prior to end-of-year testing. Mrs. Callen recorded the students in her second grade class who attended a review session and compared their test scores to the scores of the remaining students in her class. Did Mrs. Callen perform an observational study or an experimental study?

4. A study is needed to determine what proportion of a specific population like chocolate chip cookies. A random sample set of the population is chosen. Which of the following statements best describes a "survey" of data for this situation?

- 1) The researchers follow the people in the sample set for a designated period of time to observe their cookie purchases at coffee shops and cafeterias.
2) The researchers ask the sample set of people whether they like chocolate chip cookies.
3) The researchers separate the sample set into several smaller groups and record their responses to eating different types of cookies.

5. Why should a lengthy study as to whether cigarette smoking has an effect on heart disease not be accomplished through an experimental study?

- 1) It would be impossible to select a random sample set.
2) The control group would not be a random group.
3) It is unethical to tell a group they must smoke, or must continue smoking.

6. A study gathered 100 men aged 35 such that 50 of the men had followed an aerobic exercise routine every day for the previous 12 months, while the other 50 men had not followed any exercise routine for the previous 12 months. Lung capacity was measured for each of the 100 men, and the data was analyzed. Was this study observational or experimental?

7. Selena wanted to determine if temperature affected the germination rate of sunflower seeds. She planted 30 seeds in a container and placed the container outside in spring temperatures ranging from 42° F to 62°. She planted 30 seeds in a second container which she placed under a heat lamp with temperatures ranging from 72° and 85°. Is Selena's investigation an example of a designed experiment or an observational study?

she affects the temp

8. The town council wants to conduct a survey to determine if the citizens would be in favor of increased taxes to fund a new snowmobile trail to surround the perimeter of the township. Which segment of the population would provide the most unbiased response?

- 1) every seventh senior citizen living in the town on a fixed income
- 2) every fifth person from the town's "Lower Taxes Coalition" group
- 3) every ninth person over 18 years of age walking down the center of town.
- 4) every tenth person belonging to the local snowmobile club

* don't worry about bias for test

9. Which survey is *least likely* to contain bias?

- 1) Surveying the members of a basketball team to determine the most watched sporting event on TV.
- 2) Surveying a sample of people leaving a coffee shop to determine the most popular beverage.
- 3) Surveying a sample of people leaving a movie theater to determine the most popular date-night outing.
- 4) Surveying a sample of people leaving a mall to determine the most popular make of car.

10. A study of the effects of the drug Lipitor is conducted. Two random sample sets of 100 patients each are chosen. One of the sample sets receives the drug Lipitor and the other sample set does not. At the end of a designated time period, data is collected and analyzed. Is this study an observational study or an experimental study?