

Homework #2
Due Thursday, March 5
No late papers accepted! No excuses!

1. The Coca Cola Company has 366,000 stockholders, and a poll is conducted by randomly selecting 30 stockholders from each of the 50 states. The number of shares held by each sampled stockholder is recorded.
 - a) Are the values obtained discrete or continuous?

 - b) Which type of sampling (random, systematic, convenience, stratified, cluster) is being used?

 - c) If the average (mean) number of shares is calculated from the sample group, is the result a statistic or a parameter?

2. A personnel director is interested in determining how effective a new reading course will be in improving the reading comprehension of her company's employees. The director randomly selects twenty employees and determines the average reading comprehension both before and after instruction in the reading course.
 - a) Identify the population.

 - b) What characteristic of the population is being measured?

 - c) Identify the sample.

 - d) Is the purpose of the data collection to perform descriptive or inferential statistics?

3. Determine if the following study is an experiment or an observational study. If the study is an experiment, list the treatment group and the control group (if any). In an anonymous poll of 1,035 oncologists, policy analysts at Harvard's Kennedy School of Government found that 44% had advised at least one cancer patient to use marijuana to help lessen chemotherapy-induced nausea and vomiting.

4. Identify the following as discrete or continuous variables.
 - a) The number of doctors who wash their hands between patient visits
 - b) The amount of liquid consumed by the average American each day
 - c) The weight of newborn babies at a local hospital
 - d) The time it takes a person to react to a stimulus
 - e) The number of voters who favor a particular candidate
5. Unaware that 35% of the 10,000 voters in his district still support him, a politician decides to estimate his political strength. A sample of 200 voters shows that 40% support him.
 - a) What is the population?
 - b) What is the value of the parameter of interest?
 - c) What is the value of the statistic of interest?
 - d) Compare your answers in (b) and (c). If the politician were to sample another 200 voters, which of the two numbers would most likely change? Explain.
6. Identify which of these types of sampling is used: random, systematic, convenience, stratified, or cluster.
 - a) The Gallup Organization plans to conduct a poll of New York City residents with the “212” area code. Computers are used to randomly generate telephone numbers that are automatically called.
 - b) An ABC news reporter polls people as they pass him on the street.

- c) A Johns Hopkins University researcher surveys all cardiac patients in each of 30 randomly selected hospitals.
- d) The Dutchess County Commissioner of Jurors obtains a list of 42, 763 car owners and constructs a pool of jurors by selecting every 100th name on that list.
- e) The College of Newport conducts a study of student drinking by randomly selecting 10 different classes and interviewing all of the students in each of those classes.
- f) A marketing expert for MTV is planning a survey in which 500 people will be randomly selected from each age group of 10 – 19, 20 – 29, and so on.