

SOC510 Homework #6 Due October 13 (Tue)

Chapter 8

1. A researcher in early education believes that kindergarten-age children are more receptive to help from a female teacher than from a male teacher. From the list of kindergarten teachers in the state, the researcher randomly samples four classes in which the teachers are male and four in which the teachers are female. The students in each of these classes are interviewed and a measure of how receptive they are to help from the teacher is determined. This is an example of
 - (a) an experiment.
 - (b) an observational study, not an experiment.
 - (c) an experiment, but not a double-blind experiment because the children are aware of whether their teacher is male or female.
2. A sociologist wants to study the attitudes of American male college students toward marriage and husband-wife relations. She gives a questionnaire to twenty-five of the men enrolled in Sociology 101 at her college. All twenty-five complete and return the questionnaire. The sample in this situation is
 - (a) all men taking a comparable sociology class.
 - (b) the twenty-five men who received and returned the questionnaire.
 - (c) all the men in the Sociology 101 class.
3. In a large lecture class, a professor decides to make his class notes available on the Internet. During one of his lectures, he mentions that he would like some feedback concerning the usefulness of these notes. He asks students to leave written comments in his mailbox regarding the usefulness of having the class notes available on the Internet. He gets written comments from twenty-three students, and, in their written comments, most indicate that having the notes readily available helped them in the course. This is an example of
 - (a) a simple random sample because all students had the same opportunity to express their opinion.
 - (b) a probability sample, but not a simple random sample.
 - (c) a voluntary response sample.
4. A researcher is interested in the cholesterol levels of adults in the city in which she lives. A cholesterol screening program is set up in the downtown area during the lunch hour. Individuals can walk in and have their cholesterol determined for free. One hundred seventy-three people use the service, and their average cholesterol is 217.8. The sample obtained is an example of
 - (a) a simple random sample because the experimenter did not know beforehand which individuals would come to the screening.
 - (b) a stratified sample of high- and low-cholesterol individuals.
 - (c) a sample probably containing bias and undercoverage.
5. There are four people in a family—a father, a mother, and two children—and they have won two tickets to go to Disneyland for a week. They decide to select a sample of two people for the trip as follows: the mother and father flip a coin to see which of the two of them will go, and they then flip a coin to see which of the two children will go. Which of the following is true?
 - (a) This is a stratified sample with the adults (mother and father) being one strata and the two children being the other strata.
 - (b) This is a probability sample from the family because each member of the family has a known chance of being selected to go on the trip.
 - (c) Both A and B are correct.

6. A statistics instructor wants to know which route will get her to school the fastest. Each day from October 2 to November 15, when she gets to the turn point, she checks the odometer on her car. If it shows an even number she takes the freeway; if it shows an odd number, she takes the in-town route. She records the total time each day. This study is a(n)
- Observational study.
 - Sample.
 - Experiment.
7. Shere Hite in her 1987 book *Women and Love* reported that, based on her sample, a startling 70% of US women have had extramarital affairs. Her methodology included mailing 100,000 questionnaires; 4500 were completed and returned. The non-response rate for her survey was
- 4.5%
 - 95.5%
 - 70%
8. I want to take a survey of students currently enrolled in my statistics course. There are 250 of them, so I number them alphabetically from 001 to 250. Use the portion of the random number table below to select the numbers for the first five to be interviewed.
- 69041 65817 87174 09514 81740 64239 37582 36121 78945
- 690, 416, 581, 787, 174
 - 174, 095, 148, 064, 239
 - 174, 095, 148, 174, 064
9. In the 2004 presidential election, early exit polls conducted at "key precincts" indicated a strong lead for John Kerry. President George Bush ended up victorious. One problem with exit polls may be that
- The wrong key precincts were chosen.
 - The wording of the poll questions was biased.
 - The poll is really a voluntary response poll.
10. Which statement is more likely to get a positive response from parents of school-age children?
- Should elementary school-age children have to pass high stakes tests in order to remain with their classmates?
 - Should schools and students be held accountable for meeting yearly learning goals by testing students before they advance to the next grade?
 - Both should get equal numbers of positive responses.

Chapter 11

- A random sample of size 36 is to be selected from a population that has a mean μ of 50 and a standard deviation σ of 10.
 - This sample of 36 has a mean of \bar{x} that belongs to a sampling distribution. Find the shape of this sampling distribution.
 - Find the mean of this sampling distribution
 - Find the standard error
- Do the following exercise from the textbook (you should show your work, not just answers):
11.1; 11.3; 11.6; 11.8; 11.12; 11.20; 11.22; 11.24