

1. (4 points) A social researcher wishes to obtain information on the number of children in households that receive welfare support in a particular city. A random sample of 400 households is selected from the city welfare rolls. A check on welfare recipient data provides the number of children in each household.

a. What is the population of interest to the researcher?

The population of interest to the researcher is households receiving welfare support.

b. What is the sample?

The sample taken is a random sample of welfare households in the city.

c. What characteristics of the population are of interest to the researcher?

The characteristic of interest of the population are the number of children in households receiving welfare support.

d. Will this sample be representative to the population?

Yes, it will be a representative sample as long as enough households were selected relative to the total number of welfare homes.

2. (1 point) Describe how to draw a stratified random sample.

Follow the same method as random sampling, however we sample individuals within different categories or sub-types within a population (one example is gender) called stratum. For instance, we may randomly sample within strata of social class or race. This helps to control variables to improve validity. Each strata should represent a homogenous group pulled from a heterogenous larger population.

Megan Fedor 6/29/10 4:34 PM

Comment: In this case, the 400 households selected

3. (2 points) Describe how you would use a table of random digits to draw a simple random sample of 250 from a population of 1000.

In a table of random digits, we might have five or six digit numbers throughout the table. First, I would randomly choose a place on the table as a starting point. Since we are working with a population of 1000, a four-digit number, I would only be looking at the last four digits. For instance, if the last four digits were 0071, I would choose the 71st individual from my population as part of my sample. Once I have chosen a starting place, I continue through the table and columns until I have selected all 250 individuals.

4. (1 point) You have been asked to select a sample to estimate the proportion of students at Michigan State University who use MAC computers. Suggest an appropriate sampling plan.

Because we most likely have a specific list of students which would be large enough to support systematic sampling, I would determine a proper sample size and then choose a student near the top of the list (k) and then take the k th student thereafter until I had reached my sample size. From there, I would determine how many students within my sample owned a Mac computer and feel confident that the results were generalizable to the entire MSU student population.

5. (1 point) The principal of a high school has been asked to estimate the proportion of students involved in extra-curricular activities. She has an alphabetic listing of all 1,000 students enrolled in the high school, and wants to take a sample of 50 students. How would she select a systematic sample of students?

In order to select a systematic sample of these students, we would choose an individual at random near the top of the list (let's say number 17) and then select every 17th student from the list until we had reached a sample of 50 students.

6. (2 points) The authorities of a university wish to conduct a survey to elicit views of its faculty introducing four day work weeks at the university. Suggest a possible sampling frame for this study.

A sampling frame we might use would be the faculty email directory. From the faculty email directory we might use random sampling, using a table of random numbers, to choose a sample of the faculty from the email list. In this way we could email the survey to the faculty to fill out. Because the university issues email addresses to every faculty member, we would be assured that the email list encompasses the entire population in question.

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Comment: Grade: 13/13

7. (2 points) The principal of a high school has been asked to estimate the proportion of students who plan to go to college after graduation. He has an alphabetic listing of all 962 students enrolled in the high school, and wants to select a sample of 40 students. Describe how he would select a random sample of students, describing each step in detail.

In order to select a random sample of this high school, we could drop all 962 names of the students into a hat and draw 40 at random. Another option would be to utilize a random number generator or random number table to select students from the list after assigning numbers to the students, 1 through 962. Finally, a third option, since we have an alphabetized list, would be to use systematic sampling, choosing one student near the top of the list (k), and then choosing every k th student until we reached a sample of 40 students.