DATA COLLECTION

1. In a survey people are asked "Which brand of toothpaste do you prefer?" The data gathered from this question would be what type of data?

   categorical

   quantitative

   continuous

Items 2 and 3 refer to the following situation:
A student is gathering data on the driving experiences of other college students. One of the variables measured is the type of car the student drives. These data are coded using the following method: 1 = subcompact, 2 = compact, 3 = standard size, 4 = full size, 5 = premium, 6 = mini van, 7 = SUV, and 8 = truck.

2. What type of variable is this?

   categorical

   quantitative

   continuous

3. The student plans to see if there is a relationship between the number of speeding tickets a student gets in a year and the type of vehicle he or she drives. Identify the response variable in this study.

   College students

   type of car

   number of speeding tickets

   average number of speeding tickets last year

4. A researcher is studying the relationship between a vitamin supplement and cholesterol level. What type of study needs to be done in order to establish that the amount of vitamin supplement causes a change in cholesterol level?

   Correlational study

   Randomized experiment

   Time Series study

   Survey

5. An instructor is going to model an experiment in his statistics class by comparing the effect of 4 different treatments on student responses. There are 40 students in the class. Which is the best way for the instructor to distribute the students to the 4 treatments for this experiment?

   Assign the first treatment to the first 10 students on the class list, the second treatment to the next 10 students, and so on.

   Assign a unique number to each student, then use random numbers to assign 10 students to the first treatment, 10 students to the second treatment, and so on.

   Assign the treatment as students walk into class, giving the first treatment to the first 10 students and the second treatment to the next 10 student, and so on.

   All of these are equally appropriate methods.

   None of these is an appropriate method.

Items 6 and 7 refer to the following situation:
Suppose two researchers wanted to determine if aspirin reduces the chance of a heart attack.

6. Researcher 1 studied the medical records of 500 randomly selected patients. For each patient, he recorded whether the person took aspirin every day and if the person had ever had a heart attack. Then he reported the percentage of heart attacks for the patients who took aspirin every day and for those who did not take aspirin every day. What type of study did Researcher 1 conduct?

   Observational

   Experimental

   Survey

   None of the above

7. Researcher 2 also studied 500 patients that visited a regional hospital in the last year. He randomly assigned half (250) of the patients to take aspirin every day and the other half to take a placebo everyday. Then after a certain length of time he reported the percentage of heart attacks for the patients who took aspirin every day and for those who did not take aspirin every day. What type of study did Researcher 2 conduct?

   Observational

   Experimental

   Survey

   None of the above

8. The dean of a college would like to determine the feelings of students concerning a new registration fee that would be used to upgrade the recreational facilities on campus. All registered students would pay the fee each term. Which of the following data collection plans would provide the best representation of students' opinions at the school?

   Survey every 10th student who enters the current recreational facilities between the hours of 1:00 and 5:00 pm until 100 students have been asked.

   Randomly sample fifty student ID numbers and send a survey to all students in the sample.

   Place an ad in the campus newspaper inviting students to complete an online survey. Collect the responses of the first 200 students who respond.

   All of the above would be equally effective.

N = 0 (Number who gave a response to item 9)

9. A team in the Department of Institutional Review at a large university wanted to study the relationship between completing an internship during college and students' future earning potential. From the same graduating class, they selected a random sample of 80 students who completed an internship and 100 students who did not complete an internship and examined their salaries 5 years past graduation. They found that there was a statistically higher mean salary for the internship group than for the non-internship group. Which of the following interpretations do you think is the most appropriate?

   More students should take internships because having an internship produces a higher salary.

   There could be a confounding variable, such as student major, that explains the difference in mean salary between the internship and no intership groups.

   You cannot draw any valid conclusions because the samples are not the same size.