

A Sample of Sampling Methods

*For each situation, identify the sampling technique used
(simple random, cluster, stratified, convenience, voluntary response, or systematic):*

- 1) Every fifth person boarding a plane is searched thoroughly.
- 2) At a local community College, five math classes are randomly selected out of 20 and all of the students from each class are interviewed.
- 3) A researcher randomly selects and interviews fifty male and fifty female teachers.
- 4) A researcher for an airline interviews all of the passengers on five randomly selected flights.
- 5) Based on 12,500 responses from 42,000 surveys sent to its alumni, a major university estimated that the annual salary of its alumni was 92,500.
- 6) A community college student interviews the first 100 students to enter the building to determine the percentage of students that own a car.
- 7) A market researcher randomly selects 200 drivers under 35 years of age and 100 drivers over 35 years of age.
- 8) All of the teachers from 85 randomly selected nation's middle schools were interviewed.
- 9) To avoid working late, the quality control manager inspects the last 10 items produced that day.
- 10) The names of 70 contestants are written on 70 cards, The cards are placed in a bag, and three names are picked from the bag.
- 11) 32 sophomores, 35 juniors and 49 seniors are randomly selected from 230 sophomores, 280 juniors, 577 seniors at a certain high school.
- 12) To ensure customer satisfaction, every 35th phone call received by customer service will be monitored.
- 13) Calling randomly generated telephone numbers, a study asked 855 U.S. adults which medical conditions could be prevented by their diet.
- 14) A pregnancy study in Chicago, randomly selected 25 communities from the metropolitan area, then interviewed all pregnant women in these communities.

Observational Study or Experiment

For each situation, determine whether the research conducted is an observational study or an experiment. Explain your reasoning.

1. The muscles of men aged 40-50 were 40% to 50% stronger after they participated in a 10 week high intensity training program twice a week.
2. Among a group of women aged 65 and older who were tracked for several years, those who had a vitamin B12 deficiency were twice as likely to suffer from severe depression as those who did not.
3. Forty volunteers suffering from insomnia were divided into two groups. The first group was assigned to a special no-desserts diet while the other continued desserts as usual. Half of the people in these groups were randomly assigned to an exercise program while the others did not exercise. Those who ate no desserts and engaged in exercise showed the most improvement.
4. Some gardens prefer to use nonchemical methods to control insect pests in their gardens. Researchers have designed two kinds of traps and want to know which design will be more effective. They randomly choose 10 locations in a large garden and place one of each kind of trap at each location. After a week, they count the number of bugs in each trap.
5. In 2001, a report in the *Journal of the American Cancer Institute* indicated that women who work nights have a 60% greater risk of developing breast cancer. Researchers based these findings on the work histories of 763 women with breast cancer and 741 women without the disease.
6. Scientists at a major pharmaceutical firm investigated the effectiveness of an herbal compound to treat the common cold. They exposed each subject to a cold virus, and then gave him or her either the herbal compound or a sugar solution known to have no effect. Several days later, they assessed the patient's condition, using a cold severity scale of 0 to 5.
7. To research the effects of dietary patterns on blood pressure in 459 subjects, subjects were randomly assigned to three groups and had their meals prepared by dietitians. Those who were fed a diet low in fat and cholesterol lowered their systolic blood pressure by an average of 6.7 points when compared with subjects fed a control diet.
8. Some people who race greyhounds give the dogs large doses of vitamin C in the belief that the dogs will run faster. Investigators at the University of Florida tried three different diets in random order on each of five racing greyhounds. They were surprised to find that when the dogs ate high amounts of vitamin C, they ran more slowly.