

Practice Sampling Methods

Part I: For each example below, determine whether it is a *simple random* sample, a *stratified random* sample, a *cluster random* sample, a *convenience* sample, or a *voluntary response* sample.

1. A professor asks the first 5 students who arrive to class to participate in a research study about young adult sleep patterns.
2. A principal orders t-shirts and wants to check some of them to make sure they were printed properly. She randomly selects 2 of the 10 boxes of shirts and checks every shirt in those 2 boxes.
3. A manager associated each employee's name with a number on one ball in a container, then drew balls without looking to select a sample of 5 employees.
4. A student council surveys 100 students by taking random samples of 25 freshmen, 25 sophomores, 25 juniors, and 25 seniors.
5. A support hotline asks callers to stay on the line after they have completed their call to respond to a short survey.
6. A politician asks his neighbors their opinions about a controversial issue.
7. An airline company wants to survey its customers one day, so they randomly select 5 flights that day and survey every passenger on those flights.
8. Each law firm in one state registers its phone number with the state court system. An employee of the state court system uses a computer to select 500 random registered phone numbers, and the law firms associated with those numbers will be selected for an audit.

9. A large company surveys 100 employees by taking random samples of 10 managers and 90 non-managerial employees.

10. A restaurant leaves comment cards on all of its tables to learn about customer satisfaction. Each comment card is a brief survey that customers can fill out if they choose to.

Part II: *Read the scenario and answer the bolded question.*

1. An airline offers a certain flight once per day that usually contains about 250 passengers. The flight offers seats in first class (most expensive), business class, and economy class (least expensive). The airline wants to survey 500 passengers of this flight about their overall satisfaction. The passengers will be selected using a cluster random sample where each flight is a cluster.

Why might the airline choose a cluster random sample instead of a simple random sample in this setting?

2. A concert venue offers tickets in 3 zones: orchestra, grand tier, and balcony. Tickets in the orchestra zone are most expensive, and tickets in the balcony zone are least expensive. Managers of the venue want to survey approximately 150 guests at an upcoming concert about their overall experience. They want to take a stratified random sample of guests based on the venue's zones.

What surveying strategy will best accomplish their goal?