## Section 3.2b Sampling Techniques – Day 2

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1. An auto analyst is conducting a satisfaction survey, sampling from a list of 10,000 new car buyers. The list includes 2,500 Ford buyers, 2,500 GM buyers, 2,500 Honda buyers, and 2,500 Toyota buyers. The analyst selects a sample of 400 car buyers, by randomly sampling 100 buyers of each brand.

Is this an example of a simple random sample?

- a) Yes, because each buyer in the sample was randomly sampled.
- b) Yes, because each buyer in the sample had an equal chance of being sampled.
- c) Yes, because car buyers of every brand were equally represented in the sample.
- d) No, because every possible 400-buyer sample did not have an equal chance of being chosen.
- e) No, because the population consisted of purchasers of four different brands of car.
- 2. Identify the sampling technique used:
  - a) Every fifth person boarding a plane is searched thoroughly.
  - b) At a local community College, five math classes are randomly selected out of 20 and all of the students from each class are interviewed.
  - c) A researcher randomly selects and interviews fifty male and fifty female teachers.
  - d) A researcher for an airline interviews all of the passengers on five randomly selected flights.
  - e) 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.
  - f) A community college student interviews everyone in a biology class to determine the percentage of students that own a car.
  - g) A market researcher randomly selects 100 drivers under 35 years of age and 100 drivers over 35 years of age.
  - h) All of the teachers from 85 randomly selected nation's middle schools were interviewed.
  - i) To avoid working late, the quality control manager inspects the last 10 items produced that day.
  - j) 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.

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3. There are 400 trees in a plantation. All the trees have been planted in rows. Describe how to create a systematic sample of 25 trees.

4. A council wants to talk to the residents of a street to discuss a proposed street party. There are 62 houses on the street. Describe how to create a random sample of 20 houses.

5. Each of the 15 teachers selects 2 children from his or her classroom to be in the sample by numbering the children from 1 to 24, and then uses a random number generator to select two different numbers between 01 and 24. The two children who correspond to those numbers are in the sample. What type of sampling technique was used?