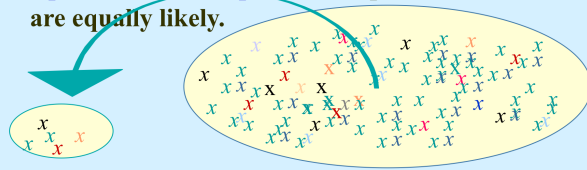**Random Sample**: Each member of the population has an equal chance of being selected.
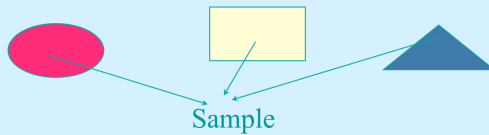
Simple Random Sample: All samples of the same size are equally likely.

✓ Assign a number to each member of the population.
✓ Random numbers can be generated by a random number table, software program or a calculator.
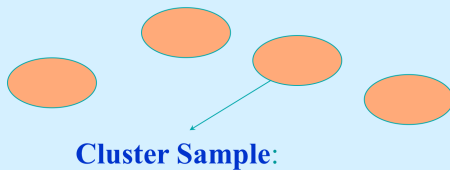✓ Data from members of the population that correspond to these numbers become members of the sample.

Stratified Random Samples

Divide the population into groups (strata) and select a random sample from each group. Strata could be age groups, genders or levels of education, for example.

Sample

Cluster Samples

Divide the population into individual units or groups and randomly select one or more units. The sample consists of all members from selected unit(s).

Cluster Sample:

Systematic Samples

Choose a starting value at random. Then choose sample members at regular intervals.

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x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x
x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x

We say we choose every *k*th member. In this example, *k* = 5. Every 5th member of the population is selected.

Other Samples

Convenience Sample: Choose readily available members of the population for your sample.

8. Identify the sampling technique used (random, cluster, stratified, convenience, systematic):
   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 200 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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8. systematic — a
   cluster — b
   stratified — c
   cluster — d
   random — e
   convenience — f
   stratified — g
   cluster — h
   convenience — i
   random — j