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1.2 Sampling

1 a. A simple random sample of size n is one where every sample of size n has an equal chance of being selected.

b. Put the population into a sampling frame and generate 20 random numbers using the random number function on a calculator

2 a. The required items are chosen at regular intervals from an ordered list. The first item is chosen at random.

b. Choose the first item by random and then select every 5th item in from the population.

3 a. A sample which is proportional to the number of items in each group.

b. Calculate the proportion of each group required in the sample and then select these at random from the ordered list.

4 a. Easy and cheap to carry out; each pupil has a known and equal chance of being selected

b. The simple random sample may not reflect the proportion of boys and girls at the school

c. The teacher should divide the same proportion as population and then randomly select 15 boys and 25 girls

5 a. Generate the number of the first employee to be chosen at random and then select every 20th employee from the ordered list of employee members.

b. The sampling frame is not random so the sampling method can introduce bias. Eg. if the first person chosen has a number ending in 0, all of the employees chosen will have a number ending in 0, the entire sample will be 0.

6 a. Number students by admission number and randomly generate 50 numbers.
Disadvantages: population is large and the sample may not be representative of all age / year groups of pupil.

b. Stratified sampling: divide the sample into the same proportion of students in each year, and select required number of students randomly