

Sampling questions

Q1

Here are some descriptions of sampling methods.

A: The population is split into groups and a proportional representation of the different groups is selected.

B: Every member of the population has an equal chance of being selected.

C: A convenient sample is taken from any members of the population at any time.

D: A repetitive system used to select a sample from the population.

E: The population is split into groups and a certain number from each group is chosen in any order.

In the table below, match each sampling method with the letter of its description.

Method	Letter
Quota Sampling	
Stratified Sampling	
Simple Random Sampling	
Opportunity Sampling	
Systematic Sampling	

Q2

A gym wants to find out what its members think about the gym's opening times and decides to carry out a survey.

(a) Suggest a suitable sampling frame for the survey

(b) Identify the sampling units

The gym decides to ask the first 20 members that come into the gym one morning to complete the survey.

(c) State the sampling technique the gym used.

(d) Give one advantage and one disadvantage of this technique.

Q3

A sixth form college has 84 students in Year 12 and 56 students in Year 13

The head teacher selects a stratified sample of 40 students, stratified by year group.

(a) Describe how this sample could be taken.

(3)

Q4

A lake contains three different types of carp.

There are an estimated 450 mirror carp, 300 leather carp and 850 common carp.

Tim wishes to investigate the health of the fish in the lake.

He decides to take a sample of 160 fish.

(a) Give a reason why stratified random sampling cannot be used.

(1)

(b) Explain how a sample of size 160 could be taken to ensure that the estimated populations of each type of carp are fairly represented.

You should state the name of the sampling method used.

(2)

Q5

Helen is studying one of the qualitative variables from the large data set for Heathrow from 2015.

She started with the data from 3rd May and then took every 10th reading.

There were only 3 different outcomes with the following frequencies

Outcome	<i>A</i>	<i>B</i>	<i>C</i>
Frequency	16	2	1

(a) State the sampling technique Helen used.

(1)
