GCSE HIGHER · REVISION MAT 1

Sampling

1 Explain the difference between a population and a sample.

2 Give one reason for using a sample instead of a census.

3 Explain why asking only your friends would give a biased sample.

4 A school has 240 students in Year 7 out of 1000.

A stratified sample of 50 is taken.

How many should be from Year 7?

5 Explain how to use random numbers to choose a sample of 20 from a list of 400 names.

6 40 fish are caught, tagged and released.

Later 50 fish are caught and 8 are tagged.

Estimate the number of fish in the lake.

7 Give one assumption made in the capture–recapture method.

8 Year 9: 180, Year 10: 220, Year 11: 200.

A stratified sample of 60 is taken.

How many from each year?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Sampling

1 The population is everyone in the group; a sample is part of it.

2 It is quicker and cheaper.

3 Friends may share similar views, so not everyone has an equal chance of being chosen.

4 $\frac{240}{1000} \times 50$

12

5 Number the names 1–400 and pick 20 random numbers in that range, ignoring repeats.

6 $\frac{40}{N} = \frac{8}{50}$

250

7 The tagged fish mix evenly with the others.

Or: the population does not change.

8 Total 600

18, 22 and 20

Mr&Mrs MATHS