GCSE HIGHER · REVISION MAT 5

Sampling

1 Explain why a sample must be representative.

2 Give one reason why a census might be impossible.

3 A phone survey is made during the working day.

Explain why it may be biased.

4 A college has 320 full-time and 480 part-time students.

A stratified sample of 50 is taken.

How many full-time students?

5 Explain the difference between a random sample and a stratified sample.

6 80 snails are marked.

Later 12 of 60 snails caught are marked.

Estimate the snail population.

7 Explain why marks used in capture–recapture must not harm the animals.

8 Three classes have 30, 36 and 24 students.

A stratified sample of 15 is taken.

How many from each class?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Sampling

1 So that conclusions about the sample apply to the whole population.

2 The population is too large or hard to reach (e.g. all fish in the sea).

3 People who work in the day are less likely to answer.

4 $\frac{320}{800} \times 50$

20

5 Random: everyone has an equal chance. Stratified: groups are sampled in proportion to their size.

6 $\frac{80}{N} = \frac{12}{60}$

400

7 Harmed animals may be caught more or less easily, making the estimate wrong.

8 Total 90

5, 6 and 4

Mr&Mrs MATHS