GCSE HIGHER · REVISION MAT 3

Sampling

1 Give one reason for taking a sample rather than surveying everyone.

2 A sample of 10 people is used to represent a town of 20 000.

Give one problem with this.

3 Explain why an online survey might be biased.

4 A school has 360 boys and 440 girls.

A stratified sample of 80 is taken.

How many girls are in it?

5 Explain how to take a systematic sample of 25 from a list of 500.

6 120 beetles are marked.

Later, 15 of 90 beetles caught are marked.

Estimate the population.

7 Explain why the capture–recapture estimate may be inaccurate.

8 Five groups have 45, 75, 60, 90 and 30 people.

A stratified sample of 40 is taken.

How many from the group of 90?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Sampling

1 A census can be too expensive or take too long.

2 It is too small to be reliable.

3 Only people who use the internet (and choose to reply) are included.

4 $\frac{440}{800} \times 80$

44

5 Pick a random start from 1 to 20, then every 20th name.

6 $\frac{120}{N} = \frac{15}{90}$

720

7 Marked animals may not mix evenly, or animals may be born, die or move.

8 Total 300

12

Mr&Mrs MATHS