GCSE FOUNDATION · REVISION MAT 5

Sampling

1 A farmer has 800 apple trees.
He checks 40 trees for disease.

(a) What is the population?

(b) What is the sample?

2 A farmer has 800 apple trees. They checks the 40 trees nearest the house.

Explain why this sample may be biased.

3 A farmer has 800 apple trees.
He checks 40 trees for disease.

Explain why a larger sample would give more reliable results.

4 A farmer has 800 apple trees.
He checks 40 trees for disease.

6 out of the 40 in the sample have disease.

Show that this suggests about 120 of the trees have disease.

5 A survey includes this question:

"How many apples do you eat? 1–2, 3–4, 5–6"

Give one criticism of the question.

6 Two samples of 40 are taken from the 800 trees. In the first, 6 have disease. In the second, 10 have disease.

Use both samples to estimate how many of the 800 trees have disease.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Sampling

1 (a) **800 trees**

(b) **40 trees checked**

2 Trees in other parts of the farm may be different; the sample is not random.

3 A larger sample is more likely to represent the whole population.

Results from small samples vary more by chance.

4 6 ÷ 40 × 800 = **120** ✓

5 There is no option for 0 or for more than 6, and no time period.

6 Combined: 16 out of 80

16 ÷ 80 × 800 = **160**