GCSE HIGHER · REVISION MAT 5

Sample size and reliability

1 A goalkeeper saves 21 of 60 penalties.

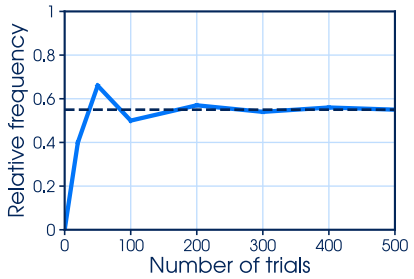
Find the relative frequency of a save.

2 Which value is the best estimate?

Trials	10	50	100	500
Relative frequency	0.6	0.66	0.71	0.7

3 Explain why surveys of more people give more reliable results.

4 The graph shows the relative frequency of a drawing pin landing point up.



Estimate the number of times it lands point up in 2000 throws.

5 Show that 36 successes in 120 trials gives a relative frequency of 0.3.

6 A: 30 successes in 75 trials.

B: 170 in 425 trials.

Combine to estimate the probability.

7 Explain why two people doing the same experiment can get different results.

8 After 40 trials the relative frequency is 0.25.

After 60 more trials it is 0.4.

What was the relative frequency in the last 60 trials?

Mr&Mrs MATHS

ANSWERS · REVISION MAT 5

Sample size and reliability

1 0.35

2 0.7 (from 500 trials)

3 Larger samples reduce the effect of random variation.

4 P ≈ 0.55

About 1100

5 $\frac{36}{120} = 0.3$

6 $\frac{200}{500}$

0.4

7 The outcomes are random, so results vary by chance.

8 10 successes, then 40 in total

30 out of 60

0.5

Mr&Mrs MATHS