GCSE HIGHER · REVISION MAT 3

Relative frequency and expected outcomes

1 P(red) = 0.3 on a spinner.

It is spun 50 times.

How many reds would you expect?

2 A team wins 14 of its 40 games.

Find the relative frequency of a win.

3 Explain how to estimate the probability of a biased spinner landing on red.

4 A biased coin lands heads 120 times in 200 flips.

Estimate P(tail).

How many tails would you expect in 50 flips?

5 The weather was recorded for 30 days.

Weather	Sunny	Cloudy	Rain
Days	18	9	3

Show that the relative frequency of rain is 0.1.

6 The weather was recorded for 30 days.

Weather	Sunny	Cloudy	Rain
Days	18	9	3

Estimate the number of rainy days in a year of 365 days.

7 An event did not happen in 10 trials.

Explain why this does not mean it is impossible.

8 Ann gets 12 sixes in 50 rolls of a dice.

Ben gets 80 sixes in 500 rolls of the same dice.

Combine the results to find the best estimate of P(6).

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Relative frequency and expected outcomes

1 15

2 $\frac{14}{40}$

0.35

3 Spin it many times and find the relative frequency of red.

4 P(tail) ≈ 0.4

About 20

5 $\frac{3}{30} = 0.1$

6 0.1 × 365

About 37 days

7 It may be unlikely; 10 trials is a small sample.

8 $\frac{12 + 80}{50 + 500} = \frac{92}{550}$

≈ 0.167

Mr&Mrs MATHS