GCSE FOUNDATION · REVISION MAT 4

Relative frequency and fairness

1 A dice is rolled 240 times.

Score	1	2	3	4	5	6
Frequency	40	42	38	41	39	40

Work out the relative frequency of rolling a 4.

2 A fair dice is rolled 600 times.

How many times would you expect to get a 5?

3 A dice is rolled 240 times.

Score	1	2	3	4	5	6
Frequency	40	42	38	41	39	40

Is the dice fair? Explain your answer.

4 A coin is flipped 40 times.
It lands on heads 22 times.

Show that the relative frequency of heads is 0.55.

5 Ali spins a spinner 10 times and gets red 6 times.
Bea spins the same spinner 100 times and gets red 47 times.

(a) Whose results give the better estimate of P(red)? Why?

(b) Use all the results to estimate P(red).

6 A bag has 20 counters, some red and some blue.
Zara takes a counter, records its colour and puts it back. She does this 80 times.

She gets red 28 times.

Estimate how many red counters are in the bag.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Relative frequency and fairness

1 $\frac{41}{240} = \frac{\mathbf{41}}{\mathbf{240}} \approx 0.17$

2 $\frac{1}{6} \times 600 = \mathbf{100}$

3 Expected about 40 of each. The results are close to this, so it **seems fair**.

4 $22 \div 40 = \mathbf{0.55}$ ✓

5 (a) **Bea's**: she did more trials.

(b) $(6 + 47) \div (10 + 100) = \frac{\mathbf{53}}{\mathbf{110}} \approx 0.48$

6 Relative frequency of red $= 28 \div 80 = 0.35$

$0.35 \times 20 \approx \mathbf{7}$

Mr&Mrs MATHS