GCSE FOUNDATION · REVISION MAT 1

Relative frequency and fairness

1 A dice is rolled 120 times.

Score	1	2	3	4	5	6
Frequency	18	22	15	20	17	28

Work out the relative frequency of rolling a 3.

2 A fair dice is rolled 300 times.

How many times would you expect to get a 4?

3 A dice is rolled 120 times.

Score	1	2	3	4	5	6
Frequency	18	22	15	20	17	28

Is the dice fair? Explain your answer.

4 A coin is flipped 50 times.
It lands on heads 28 times.

Show that the relative frequency of heads is 0.56.

5 Ali spins a spinner 20 times and gets red 7 times.
Bea spins the same spinner 200 times and gets red 58 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 50 counters, some red and some blue.
Zara takes a counter, records its colour and puts it back. She does this 200 times.

She gets red 76 times.

Estimate how many red counters are in the bag.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 1

Relative frequency and fairness

1 $\frac{15}{120} = \frac{1}{8} \approx 0.12$

2 $\frac{1}{6} \times 300 = \mathbf{50}$

3 Expected about 20 of each. The results are close to this, so it **seems fair**.

4 $28 \div 50 = \mathbf{0.56}$ ✓

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

(b) $(7 + 58) \div (20 + 200) = \frac{13}{44} \approx 0.30$

6 Relative frequency of red = $76 \div 200 = 0.38$

$0.38 \times 50 \approx \mathbf{19}$

Mr&Mrs MATHS