Relative Frequency

ANSWERS

1 Femi drops a shuttlecock 40 times. It lands on its base or on its side. Find the relative frequency of it landing on its base.

Outcome	Base	Side	Total
Frequency	26	14	40

relative frequency = $\frac{26}{40}$ = 0.65

2 Hana takes a counter from a bag, records its colour and puts it back.
She does this 25 times. Find the relative frequency of green.

Colour	Green	Orange	Total
Frequency	9	16	25

relative frequency = $\frac{9}{25}$ = 0.36

3 Leo spins a coin on a table 60 times.
Find the relative frequency of tails.

Outcome	Heads	Tails	Total
Frequency	27	33	60

Answer $\frac{33}{60}$ = 0.55

4 A dice is rolled 40 times. Find the relative frequency of a 5.

Score	1	2	3	4	5	6	Total
Frequency	5	8	6	7	9	5	40

Answer $\frac{9}{40}$ = 0.225

5 A spinner is spun 50 times.
Complete the table.

Colour	Red	Blue	Green	Total
Frequency	17	20	13	50
Relative frequency	0.34	0.4	0.26	

50 − 17 − 13 = 20

6 Kemi flips a coin 100 times. Is the coin fair?
Give a reason.

Outcome	Heads	Tails	Total
Frequency	71	29	100

$\frac{71}{100}$ = 0.71, a long way from 0.5

Answer Probably biased

7 Ravi thinks his dice lands on 1 too often. He rolls it 60 times. Is the dice biased?
Give a reason.

Score	1	2	3	4	5	6	Total
Frequency	21	8	7	9	6	9	60

$\frac{21}{60}$ = 0.35, more than double 0.17

Answer Probably biased

8 Ezra flips a bottle cap 40 times.
He says the relative frequency of up is $\frac{12}{28}$.
Explain his mistake. Then find the relative frequency of up.

Outcome	Up	Down	Total
Frequency	12	28	40

28 is the other outcome, not the total

Answer $\frac{12}{40}$ = 0.3

Relative Frequency *further practice*

ANSWERS

9 A toy frog jumps 30 times. It lands on its feet or on its back. Complete the relative frequency row.

Outcome	Feet	Back	Total
Frequency	21	9	30
Relative frequency	0.7	0.3	

10 A spinner numbered 1 to 4 is spun 50 times. Find the relative frequency of it not landing on 4.

Number	1	2	3	4	Total
Frequency	11	14	12	13	50

$11 + 14 + 12 = 37$

Answer $\frac{37}{50} = 0.74$

11 A dice is rolled 100 times. Find the relative frequency of a 3.

Score	1	2	3	4	5	6	Total
Frequency	15	18	15	17	16	19	100

$100 - 85 = 15$

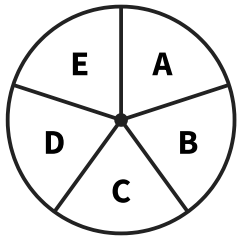
Answer $\frac{15}{100} = 0.15$

12 Spinner B landed on red more times than spinner A. Which spinner landed on red the larger share of its spins? Show how you know.

	Spins	Red	Relative frequency
Spinner A	40	18	0.45
Spinner B	60	21	0.35

Answer Spinner A

13 This spinner has five equal sections. It is spun 200 times and lands on E 41 times. Does the spinner look fair for E? Give a reason.



$\frac{41}{200} = 0.205$, close to $\frac{1}{5} = 0.2$

Answer Looks fair

14 The table shows the relative frequencies for a spinner with three colours. Find the relative frequency of green.

Colour	Red	Blue	Green
Relative frequency	0.3	0.45	0.25

$1 - 0.3 - 0.45$

Answer 0.25

15 Ama spins a spinner with four equal sections 100 times. She says the spinner is biased because her relative frequencies are not all 0.25. Is she right? Explain.

Section	A	B	C	D
Relative frequency	0.24	0.27	0.25	0.24

Answer No, they are all close to 0.25

16 Zara records a team's results in 40 games. Her relative frequencies add up to 1.1. Explain how you know she has made a mistake, and correct it.

Result	Win	Draw	Lose	Total
Frequency	14	10	16	40
Zara's	0.35	0.25	0.5	1.1

they must add up to 1

Answer lose is $\frac{16}{40} = 0.4$