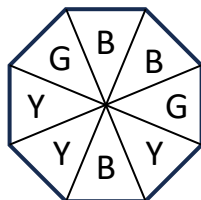


Probability – Relative Frequency and Expected Outcomes



- 1 The relative frequency of flipping a tails on a biased coin is 0.18.
If the coin is flipped 50 times, how many heads can we expect?

- 2 The following spinner is spun 48 times. Complete the table for the expected outcomes of each colour.



Colour	B	G	Y
Expected Outcome			

- 3 Ben rolls a die 50 times, here are his results:

Number	Frequency	Relative Frequency
1	12	
2	8	
3	1	
4	15	
5	5	
6	6	

- a Ben states: “The die must be biased because I only rolled one 3 in 50 rolls”
Is Ben correct? Explain.

- b By calculating the relative frequencies, complete the table.

- c If Ben rolled the dice 80 times how many even numbers can he expect to roll?

- 4 Lewis and Gracie roll a biased 4 sided die.
Lewis rolls 20 times, Gracie rolls 50 times.
Lewis calculates his relative frequency of rolling a 4 is 0.15, Gracie calculates hers to be 0.2.

- a Who has the better estimate for the probability of rolling a 4? Explain.

- b Using all their data, calculate the amount of 4s expected from 200 rolls.

- 5 A student rolls a biased die. Complete the following table.

Number	Frequency	Relative Frequency
1		
2		0.25
3	2	
4		0.2
5	4	0.1
6	12	

- 6 Tom and Sally flip a biased coin.
Tom says that they flipped 36 more heads than tails.
Sally says that they flipped heads 4 times as much as tails.

- a Calculate the relative frequency of flipping a head.

- b How many flips did they complete?

- 7 Neda has played a game numerous times, her relative frequency of winning is **0.6**.
Neda plays an additional game and wins, her relative frequency after the win is now **0.625**.
How many games has Neda played including the recent win?