Relative Frequency and Expected Outcomes – www.m4ths.com

(1) John sees 100 cars passing his house. He notes the colour of each car. There were 28 red, 16 blue 31 black and 18 other colours. Find the relative frequency of each colour.

(2) Janet wants to know if a coin is fair or biased. She flips it 8 times and it lands on tails 3 times.

    (a) What is the relative frequency of getting a tail?

Janet decides that the coin is biased.

    (b) Why might she think it's biased?

    (c) What should she do to check if it's biased?

(3) Peter plays darts. The probability of him winning is 0.3. If he played 800 games, how many would you expect him to win?

(4) A spinner with 4 sections is spun 1 and the colour noted.

A table shows some information about the probabilities below.

Colour	Red	Blue	Black	Green
Probability	0.1	0.3	*X*	*X*

    (a) Find the value of X

    (b) Is the spinner fair or biased?

    (c) If the spinner is spun 400 times, how many times would you expect it to land on Black?

(5) Fred has some counters in a bag. The number of each is show below. Find the relative frequency of each colour.

Colour	Yellow	Blue	Red	Pink
Number	42	68	28	52

(6) The probability of James winning a game of pool is 7/9. If he plays 720 games, how many would you expect him to win?

(7) John can either win, draw or lose in a game. The probability of him winning is 0.6 and the probability of him drawing or losing is the same. If he plays 360 games, how many would you expect him to win?

(8) A spinner is spun. The probability of each coloured section on the spinner is shown below.

    (a) Find the value of n

    (b) If the spinner is spun 900 times, how many times would you expect it to land on pink?

Colour	Green	Pink	Blue	Orange
Probability	n	3n	0.1	5n

(9) Helen flips a coin 32 times and it lands on heads 19 times.

    (a) Find the relative frequency of heads

    (b) What should Helen do to check it the coin is biased or not?