

## Relative Frequency

### Workout

Question 1:

The coin throws are independent. The probability of getting a head each time is  $\frac{1}{2}$  and the probability of getting a tail each time is  $\frac{1}{2}$  but this doesn't mean you will get exactly 25 of each.

Question 2:

$$\frac{20}{30} = \frac{2}{3}$$

Question 3:

(a)  $\frac{37}{50}$

(b) Yes - a fair dice probability of landing on a 6 is  $\frac{1}{6}$  and if rolled 50 times, expected amount of times it would land on 6 would be approximately 8 times.

Question 4:

(a)

	Heads	Tails
Relative Frequency	$\frac{13}{24}$	$\frac{11}{24}$

(b) No it is not biased, the probability of either a heads or a tails on a fair coin would be  $\frac{12}{24} = \frac{1}{2}$  and this is approximately around this.

Question 5:

(a)

Number	1	2	3	4	5	6
Relative Frequency	$\frac{2}{30}$ or $\frac{1}{15}$	$\frac{2}{30}$ or $\frac{1}{15}$	$\frac{7}{30}$	$\frac{3}{30}$ or $\frac{1}{10}$	$\frac{1}{30}$	$\frac{15}{30}$ or $\frac{1}{2}$

(b) Yes - 6 was rolled significantly more than any other number therefore there was not equal probability.

Question 6:

12 times

Question 7:

(a)  $\frac{45}{100}$  or  $\frac{9}{20}$

(b)  $\frac{53}{100}$

(c)  $\frac{42}{100}$  or  $\frac{21}{50}$

(d)  $\frac{22}{100}$  or  $\frac{11}{50}$

(e)  $\frac{19}{100}$

(f)  $\frac{50}{100}$  or  $\frac{1}{2}$

Question 8:

(a) 75

(b) 60

(c) 75

Question 7:

(a)  $\frac{4}{30}$  or  $\frac{2}{15}$

(b)  $\frac{12}{150}$  or  $\frac{2}{25}$

(c) Laura – higher number of trials used.

(d) 48

### Apply

Question 1:

(a)

Colour	Red	Yellow	White
Frequency	16	6	28
Relative Frequency	0.32	0.12	0.56

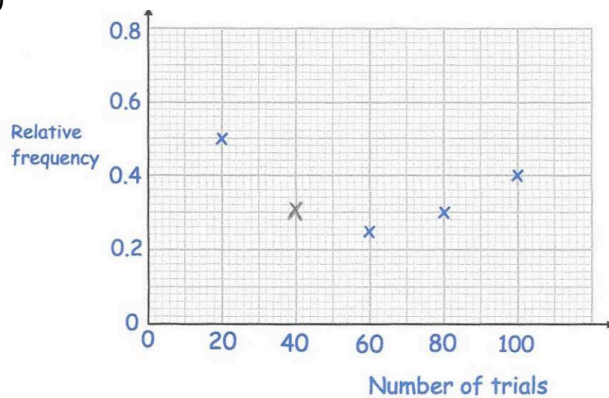
(b) 15

Question 2:

34 words

Question 3:

(a)



(b) 15

(c) 100 trials

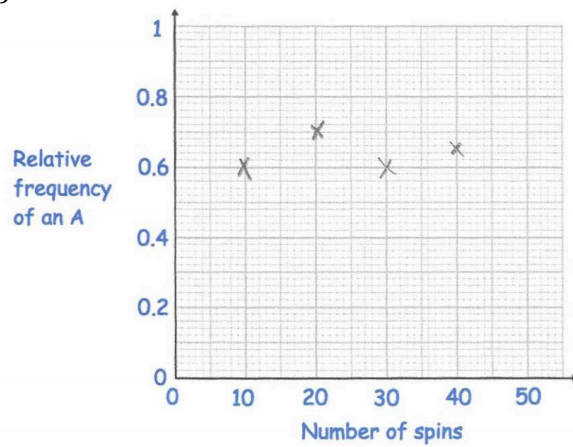
(d) 28

Question 4:

500

Question 5

(a)



- (b) The spinner lands on A 26 times out of the first 40 spins.  
If Jacob is right, that means the spinner would land on A 40 times out of 50 spins.  
That would mean that the spinner lands on A 14 times out of the next 10 spins, which is impossible.