

A dice is thrown 50 times.
The number shown on the dice is recorded after each throw.
The table below shows the results recorded.

Number shown on dice	1	2	3	4	5	6
Frequency	9	7	8	7	6	13

- (a) The relative frequency of throwing a 1 was calculated as $\frac{9}{50} = 0.18$.
What was the relative frequency of throwing a 6?
Give your answer as a decimal. [1]
- (b) The number 4 was thrown 7 times in the first 50 throws.
Using **this fact**, calculate how many times you would expect a 4 to be thrown when this dice is thrown 3000 times. [2]
- (c) How many times would you expect a 4 to be thrown when a **fair** dice is thrown 3000 times? [2]

Intermediate Maths Nov 2017 P2 Q7

The following cards spell out the name Ystradgynlais.

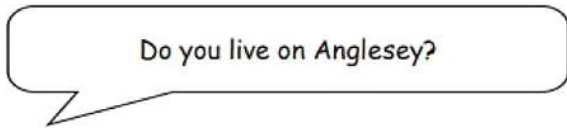


In an experiment, the cards are turned face down and rearranged.
A card is selected at random and the letter on the card is recorded.

The experiment is carried out 325 times.

How many times would you expect the letter **Y** to be recorded? [3]

(a) On the first day, a random sample of 2000 visitors at the show were asked:



640 of them answered 'Yes'.

What was the relative frequency of those who answered 'Yes'?
 Give your answer as a decimal.

[1]

(b) On the second day a random sample of 3000 visitors at the show were asked the same question.
 The relative frequency of those who answered 'Yes' on this day was 0.42.

Calculate the relative frequency of those who said they lived on Anglesey when the samples for **both** days were combined.
 Give your answer as a decimal.

[4]

(c) Which of the following is most likely to give the best estimate for the relative frequency of visitors to the show living on Anglesey?
 Circle your answer.

Your answer
to part (a)

0.42

Your answer
to part (b)

You **must** give an explanation for your choice.

[1]

Intermediate Maths Sample 1 P1 Q15

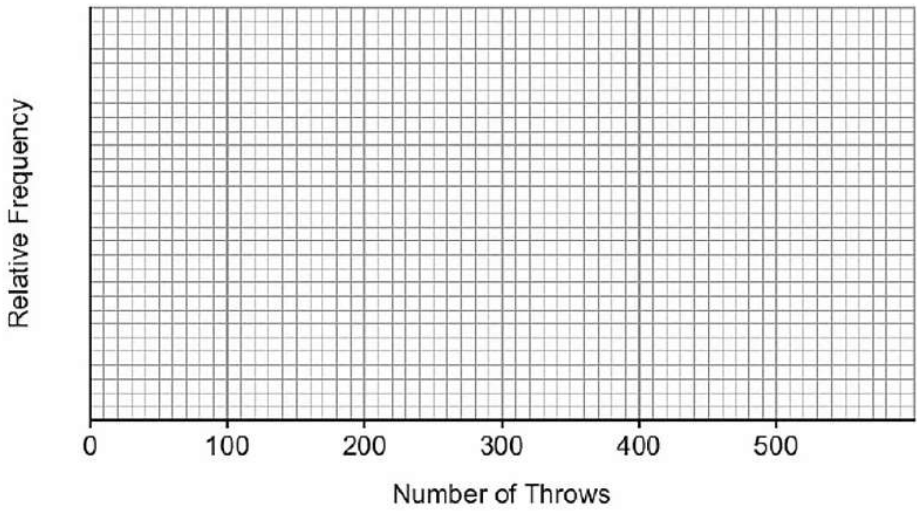
A six-sided dice was thrown repeatedly.
 After every 100 throws, the **cumulative** number of sixes thrown was recorded.

(a) Complete the table below, which gives a summary of the results obtained.

[1]

Number of throws	100	200	300	400	500
Number of sixes	8	28	60	72	80
Relative frequency	0.08	0.14		0.18	

- (b) Draw a relative frequency diagram to show the information given in the table. [1]



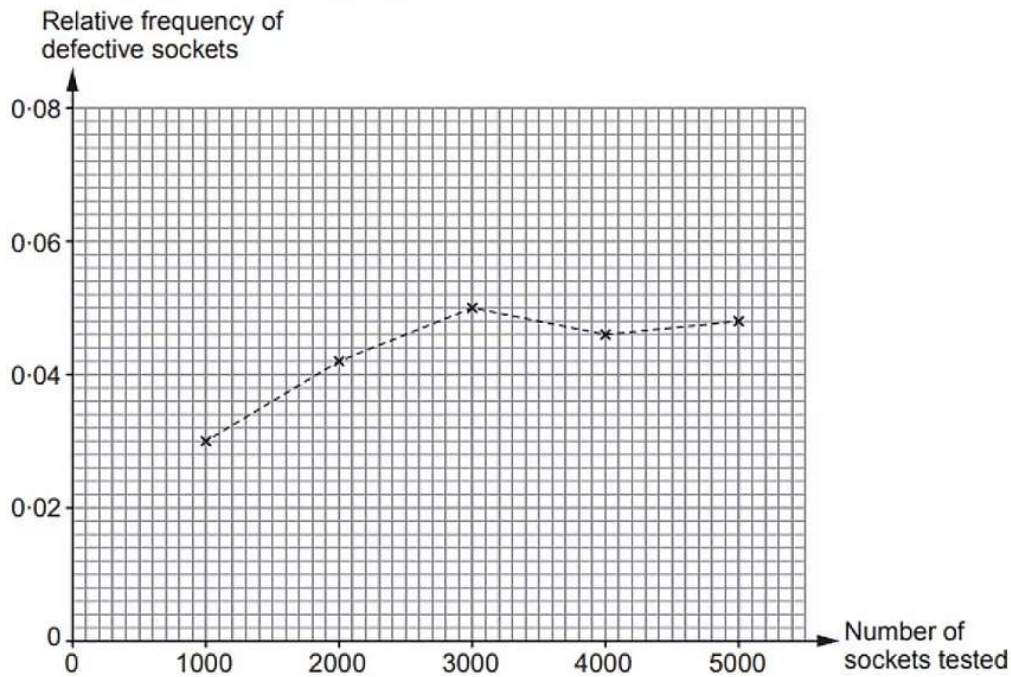
- (c) From the table, which value gives the best estimate for the probability of throwing a six? You must give a reason for your choice. [1]

- (d) Do you think this is a fair dice? You must give a reason for your choice. [1]

Intermediate Maths Nov 2016 P2 Q16

A factory uses a machine to produce electrical sockets. The manager carries out a survey to investigate the probability of the machine producing a defective socket.

The relative frequency of defective sockets produced was calculated after testing a total of 1000, 2000, 3000, 4000 and 5000 sockets. The results are plotted on the graph below.



- (a) How many of the first 3000 sockets tested were defective? [2]
- (b) Write down the best estimate for the probability that one socket, selected at random, will be defective.
You must give a reason for your choice. [2]

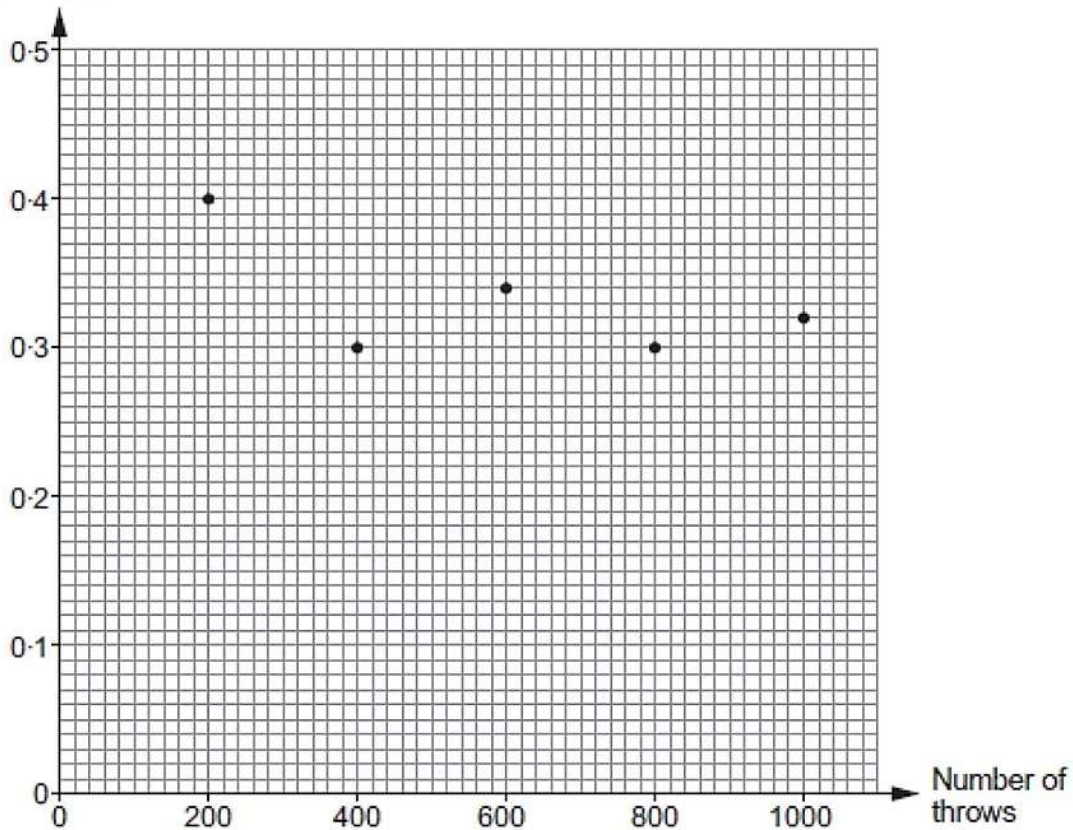
Probability:

Reason:

Intermediate Maths Nov 2018 P1 Q17

A biased six-sided dice is thrown a total of 1000 times.
The graph shows the relative frequency of throwing a 'six' after 200, 400, 600, 800 and 1000 throws.

Relative frequency of throwing a 'six'



- (a) Which of the following is the best estimate for the probability of throwing a 'six' with this dice?
Circle your answer. [1]
- 0.4 0.3 0.5 0.32 0.34
- (b) (i) How many 'sixes' were thrown in the first 600 throws of the dice? [2]
- (ii) How many more 'sixes' were recorded for these 600 throws than you would expect when a fair six-sided dice is thrown 600 times? [2]