Mock Grade 4

Maths Booklet 1

Paper 3H
Calculator

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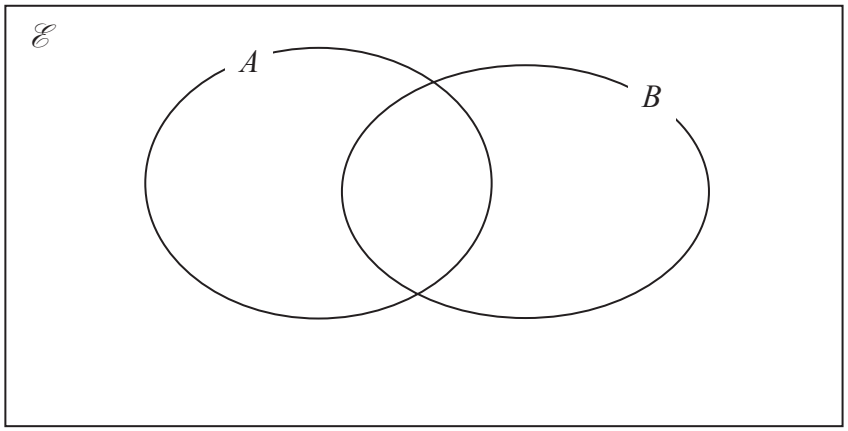
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 $\mathscr{E} = \{10, 11, 12, 13, 14, 15, 16, 17, 18, 19\}$
$A = \{12, 15, 16, 17, 19\}$
$B = \{12, 16, 19\}$



(a) Complete the Venn diagram to represent this information.

(3)

A number is chosen at random from the universal set $\mathscr{E}$.

(b) Find the probability that the number is in the set $A \cap B$

.....

(2)

(Total for Question 1 is 5 marks)

2 Katy invests £320 000 in a savings account for 3 years.
The account pays compound interest at a rate of 2.8 % per annum.

Calculate the total amount of interest Katy will get at the end of 3 years.

£.....

(Total for Question 2 is 3 marks)

3 The table shows information about the time taken for 20 people to to run 10 km.

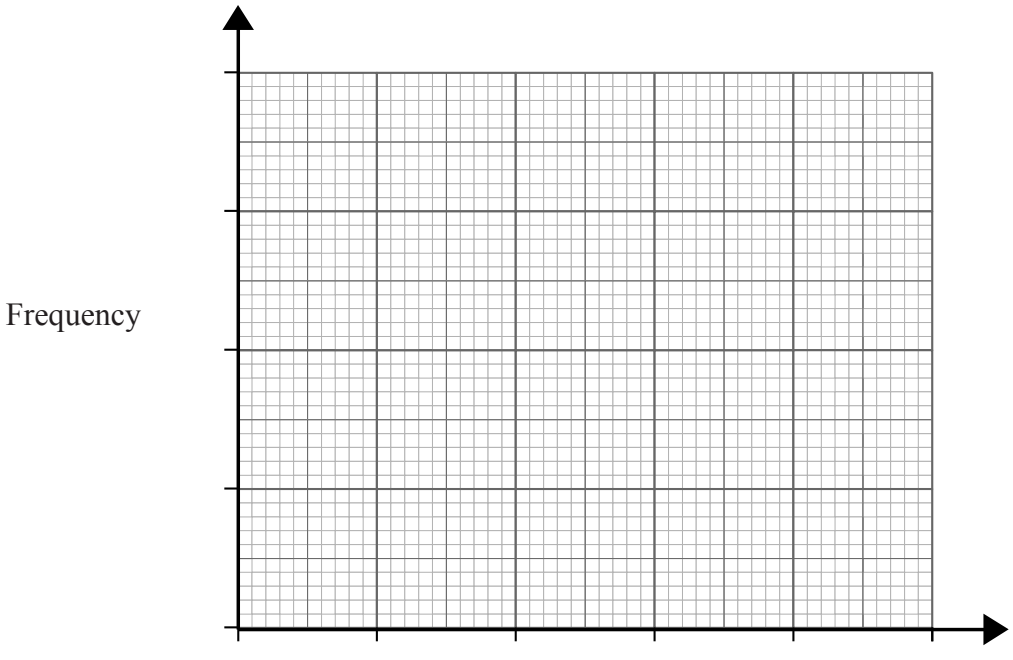
Time (minutes)	Frequency
$15 < t \leqslant 20$	3
$20 < t \leqslant 25$	6
$25 < t \leqslant 30$	7
$30 < t \leqslant 40$	4

(a) Find the class interval that contains the median.

.....

(1)

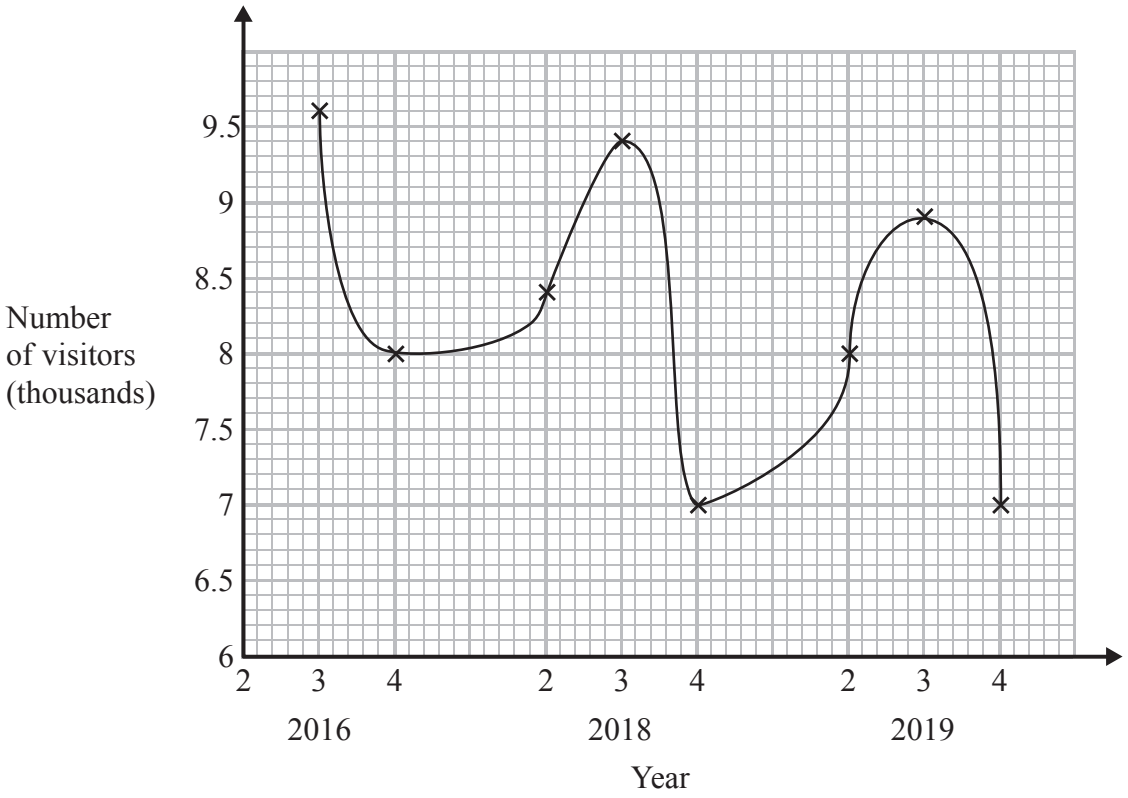
(b) Draw a frequency polygon to show this information.



(2)

(Total for Question 3 is 3 marks)

4 Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a fun park.



Write down two things that are wrong or could be misleading with this graph.

1 .....

.....

.....

2 .....

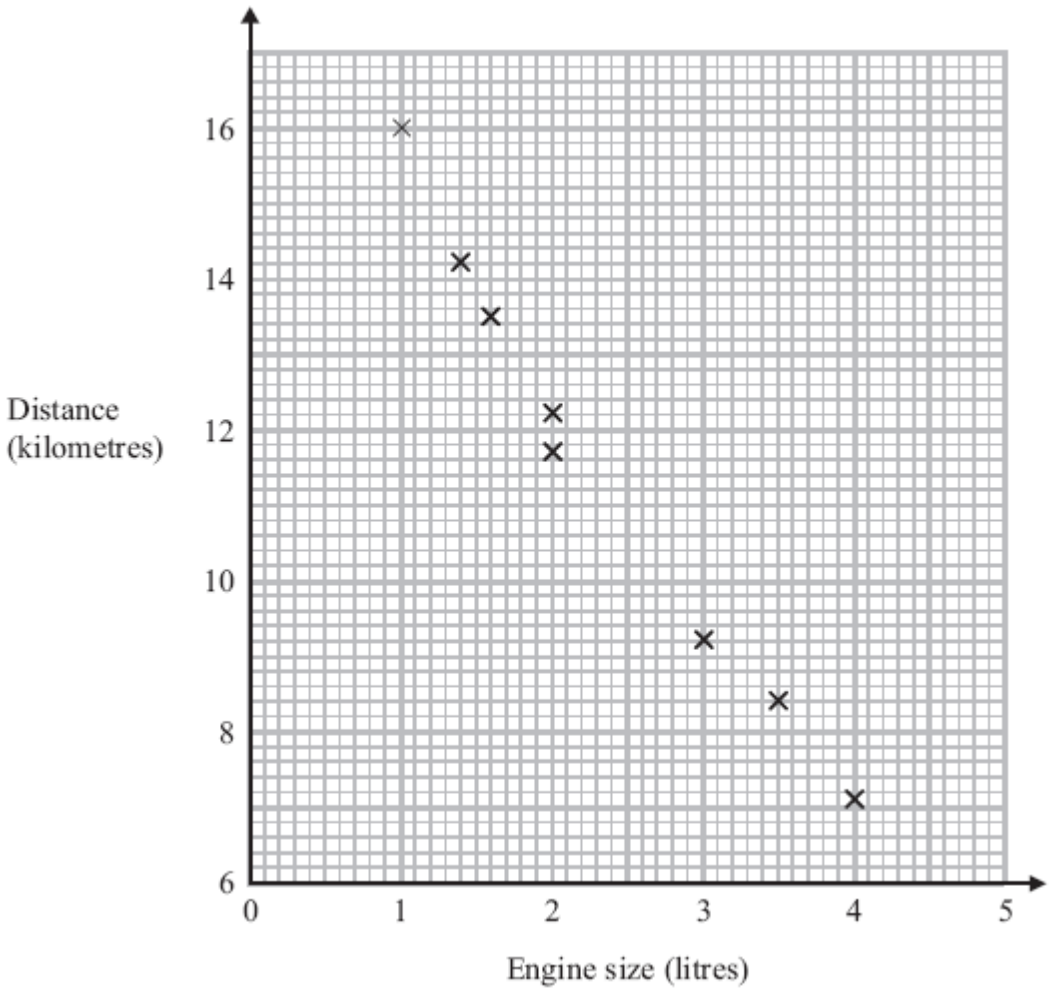
.....

.....

(Total for Question 4 is 2 marks)

5 The scatter graph shows some information about 8 cars.

For each car it shows the engine size, in litres, and the distance, in kilometres, the car travels on one litre of petrol.



(a) Write down the type of correlation.

.....

(1)

A different car of the same type has an engine size of 2.5 litres.

(b) Estimate the distance travelled on one litre of petrol by this car.

..... kilometres

.....

.....

(2)

(Total for Question 5 is 3 marks)

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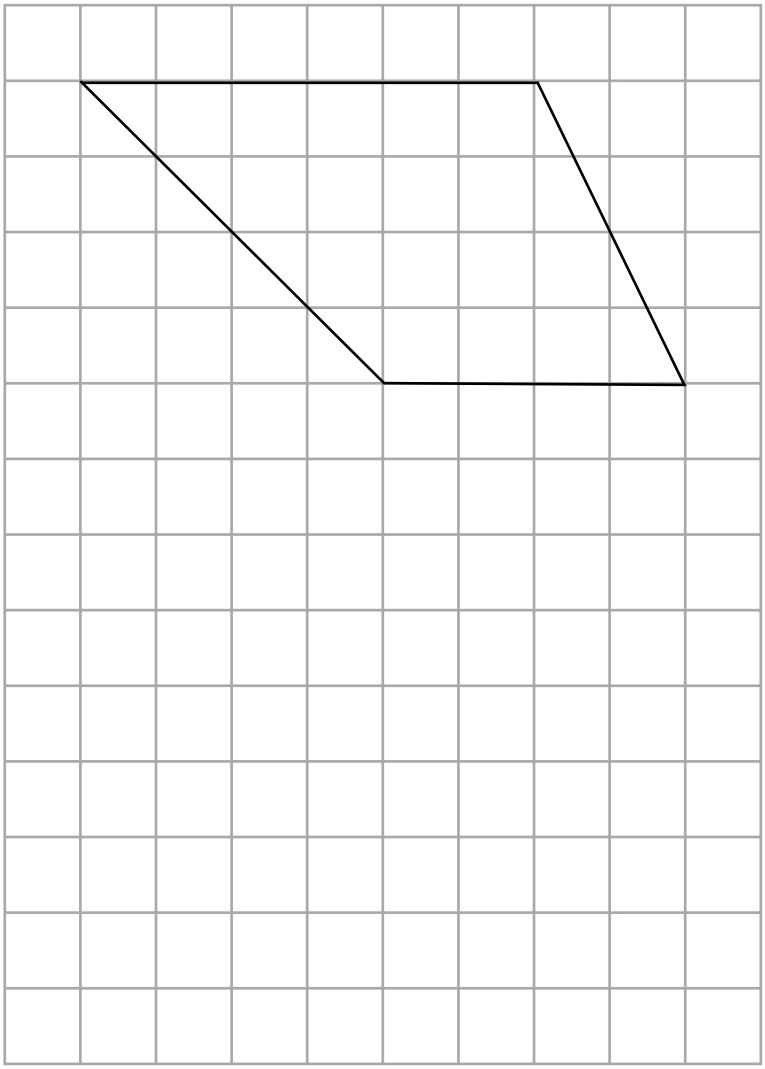
6 Expand and simplify $12(2p + 3a) - 6(8a - 5p)$

.....

(Total for Question 6 is 2 marks)

7 Here is a trapezium drawn on a centimetre grid.

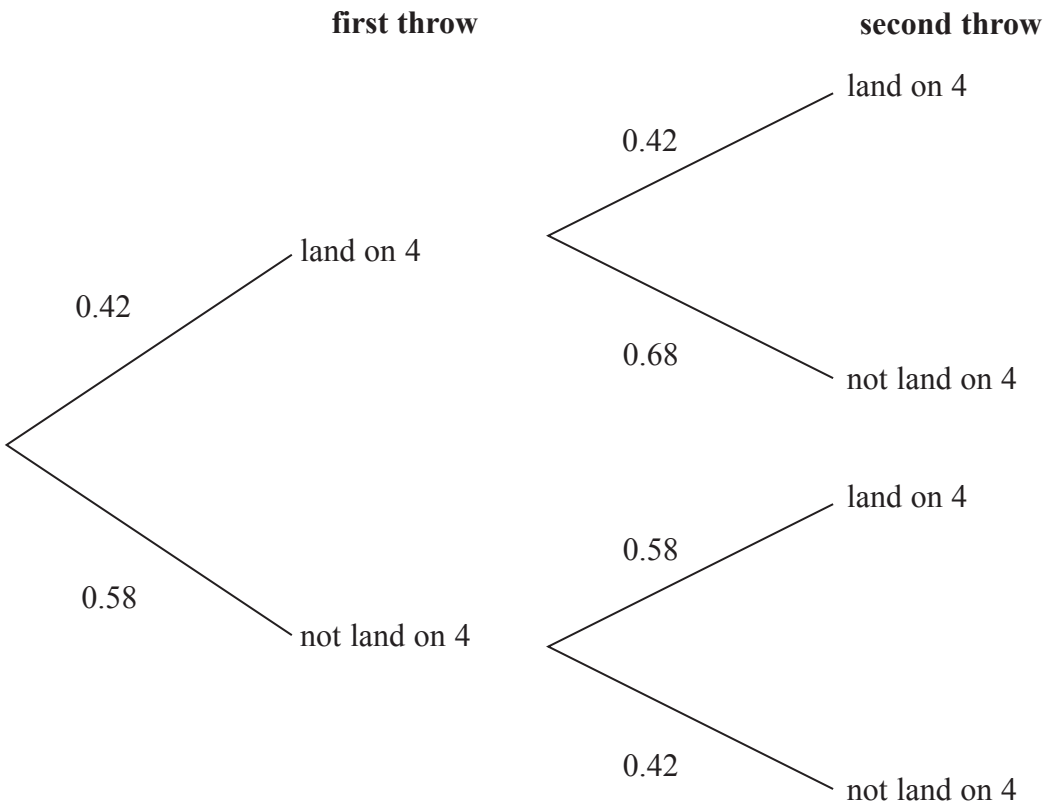


On the grid, draw a triangle equal in area to this trapezium.

(Total for Question 7 is 2 marks)

8 When a biased 6-sided dice is thrown once, the probability that it will land on 4 is 0.42
The biased dice is thrown twice.

Amir draws this probability tree diagram.
The diagram is **not** correct.



Write down **two** things that are wrong with the probability tree diagram.

1 .....

.....

2 .....

.....

(Total for Question 8 is 2 marks)