

GCSE Grade 4

Maths

Booklet 6

Paper 2H

Calculator

www.ggmaths.co.uk

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

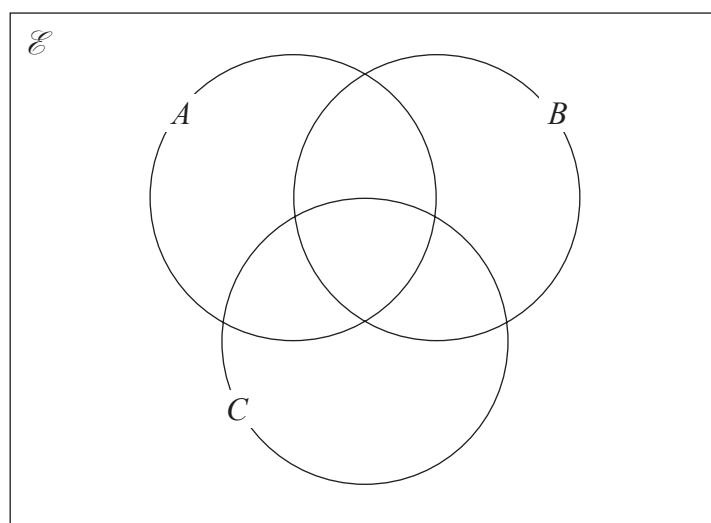
1 $\mathcal{E} = \{\text{even numbers between 1 and 25}\}$

$$A = \{2, 8, 10, 14\}$$

$$B = \{6, 8, 20\}$$

$$C = \{8, 18, 20, 22\}$$

(a) Complete the Venn diagram for this information.



(4)

A number is chosen at random from \mathcal{E} .

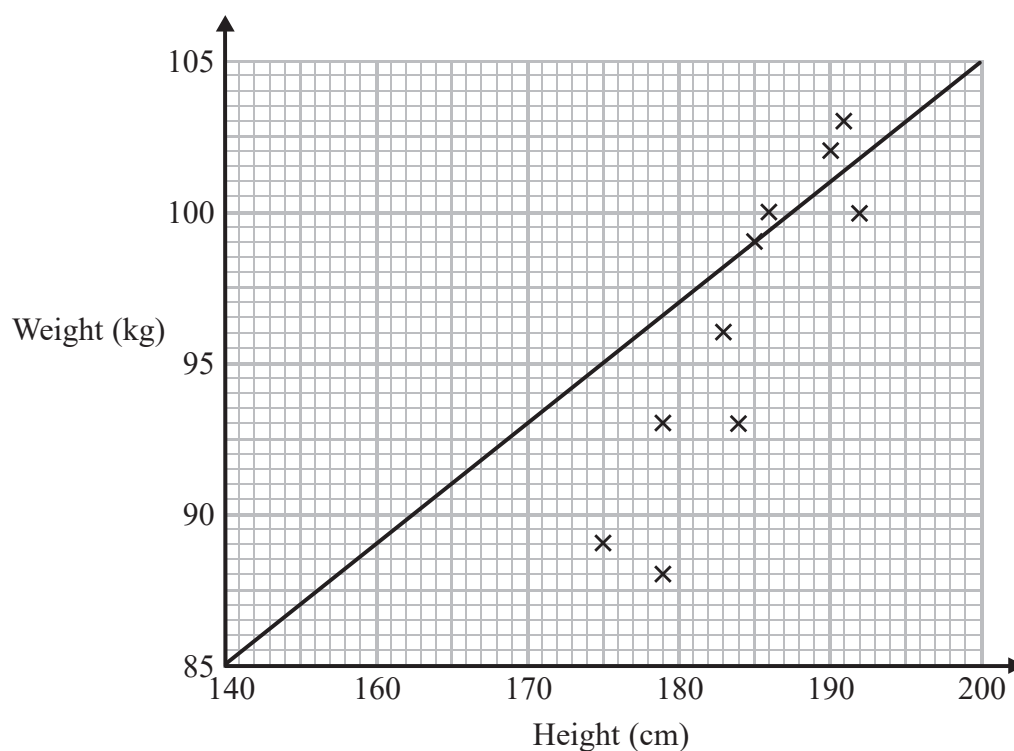
(b) Find the probability that the number is a member of $A \cap B$.

(2)

(Total for Question 1 is 6 marks)



- 2 Sean has information about the height, in cm, and the weight, in kg, of each of ten rugby players. He is asked to draw a scatter graph and a line of best fit for this information. Here is his answer.



Sean has plotted the points accurately.

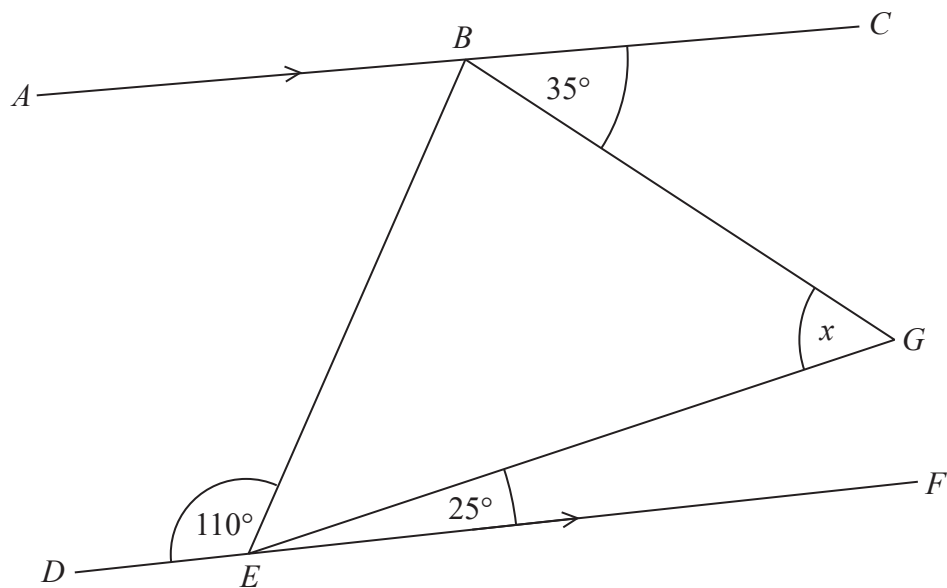
Write down two things that are wrong with his answer.

- 1
- 2

(Total for Question 2 is 2 marks)



3 BEG is a triangle.



ABC and DEF are parallel lines.

Work out the size of angle x .

Give a reason for each stage of your working.

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 3 is 4 marks)



- 4 Northern Bank has two types of account.
Both accounts pay compound interest.

Cash savings account

Interest
2.5% per annum

Shares account

Interest
3.5% per annum

Ali invests £2000 in the cash savings account.

Ben invests £1600 in the shares account.

- (a) Work out who will get the most interest by the end of 3 years.
You must show all your working.

(4)

In the 3rd year the rate of interest for the shares account is changed to 4% per annum.

- (b) Does this affect who will get the most interest by the end of 3 years?
Give a reason for your answer.

(1)

(Total for Question 4 is 5 marks)



- 5 The table shows the probabilities that a biased dice will land on 2, on 3, on 4, on 5 and on 6

Number on dice	1	2	3	4	5	6
Probability		0.17	0.18	0.09	0.15	0.1

Neymar rolls the biased dice 200 times.

Work out an estimate for the total number of times the dice will land on 1 or on 3

(Total for Question 5 is 3 marks)



- 6 On Saturday, some adults and some children were in a theatre.
The ratio of the number of adults to the number of children was 5 : 2

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.

117 children had seats in the Circle.

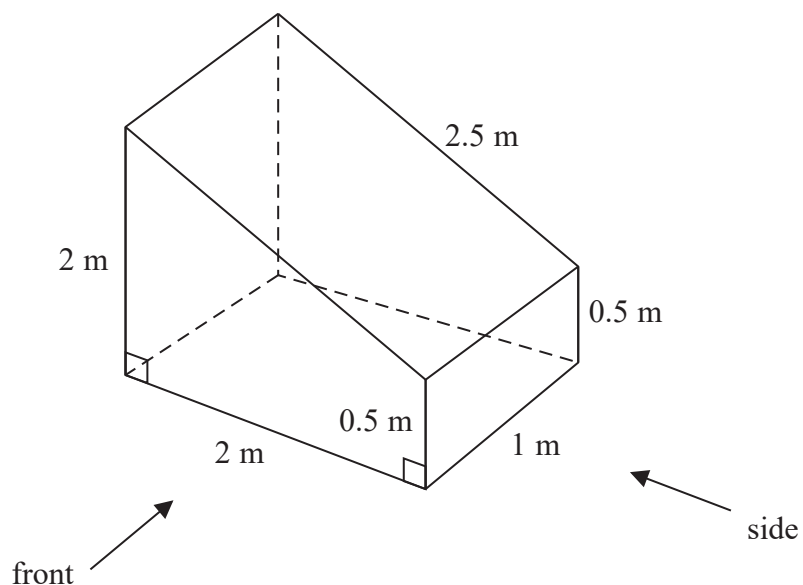
There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?
You must show how you get your answer.

(Total for Question 6 is 5 marks)



- 7 The diagram shows a prism with a cross section in the shape of a trapezium.



On the centimetre grid below, draw the front elevation and the side elevation of the prism.
Use a scale of 2 cm to 1 m.



(Total for Question 7 is 4 marks)



- 8 Olly drove 56 km from Liverpool to Manchester.
He then drove 61 km from Manchester to Sheffield.

Olly's average speed from Liverpool to Manchester was 70 km/h.
Olly took 75 minutes to drive from Manchester to Sheffield.

- (a) Work out Olly's average speed for his total drive from Liverpool to Sheffield.

..... km/h
(4)

Janie drove from Barnsley to York.

Janie's average speed from Barnsley to Leeds was 80 km/h.
Her average speed from Leeds to York was 60 km/h.

Janie says that the average speed from Barnsley to York can be found by working out the mean of 80 km/h and 60 km/h.

- (b) If Janie is correct, what does this tell you about the two parts of Janie's journey?

.....
.....
(1)

(Total for Question 8 is 5 marks)

