Mock Grade 4
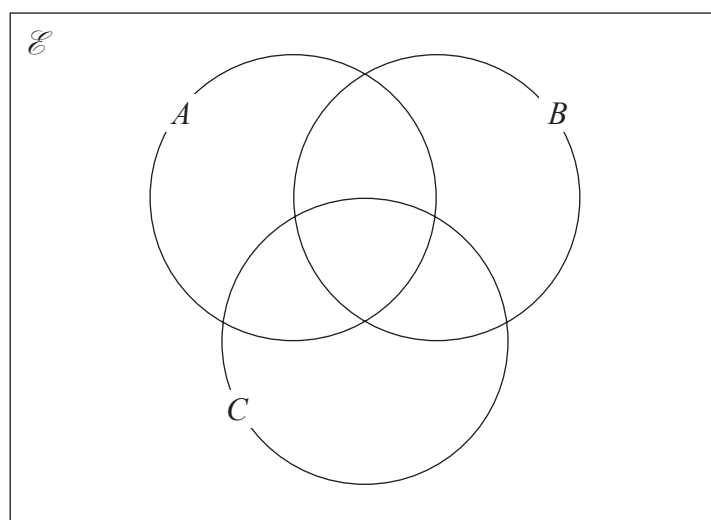
Maths Booklet 6

Paper 2H
Calculator

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1 $\mathscr{E}$ = {odd numbers between 1 and 28}
  A = {5, 11, 17, 21, 27}
  B = {11, 19, 21}
  C = {5, 11, 19, 25}

(a) Complete the Venn diagram for this information.
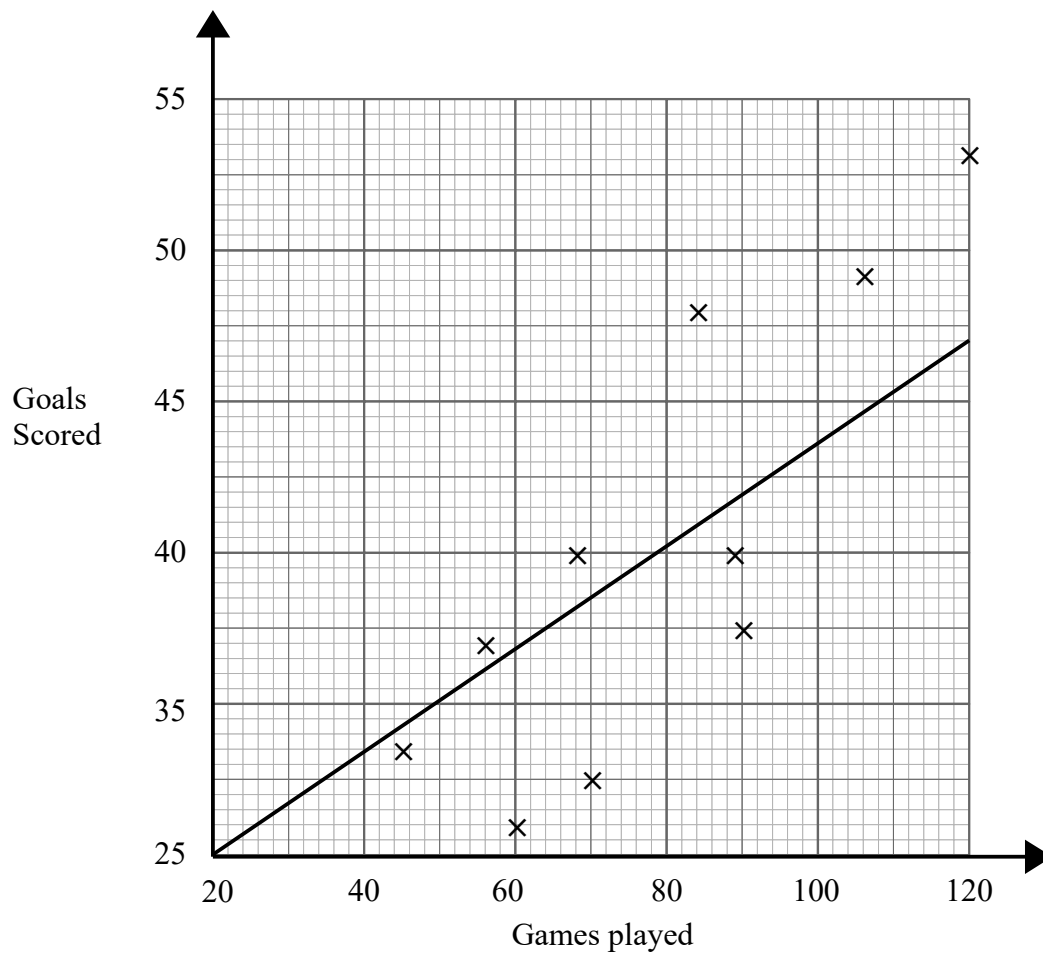
(4)

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

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

....

(2)

(Total for Question 1 is 6 marks)

2 Wayne has data about the number of goals 10 football players had scored and the number of games they had played.

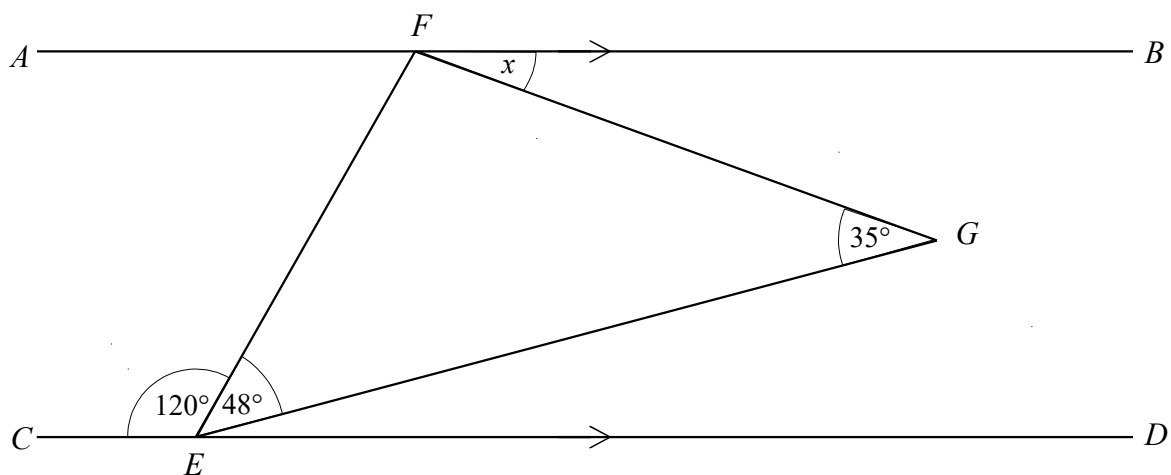He was asked to display the data on a scatter graph.
Here is his answer.

Wayne 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

AB and CD are parallel.

Work out the size of angle *x*.
Give a reason for each stage of your working.

°
....

(Total for Question 3 is 4 marks)

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

| **Cash savings account** |
| Interest |
| 3.4% per annum |

| **Shares account** |
| Interest |
| 2.8% per annum |

Ali invests £1700 in the cash savings account.
Ben invests £2300 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 1, on 2, on 3, on 5 and on 6

Number	1	2	3	4	5	6
Probability	0.14	0.2	0.08		0.13	0.21

Neymar rolls the biased dice 180 times.

Work out an estimate for the total number of times the dice will land on 4 or on 5

....

(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 7 : 3

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

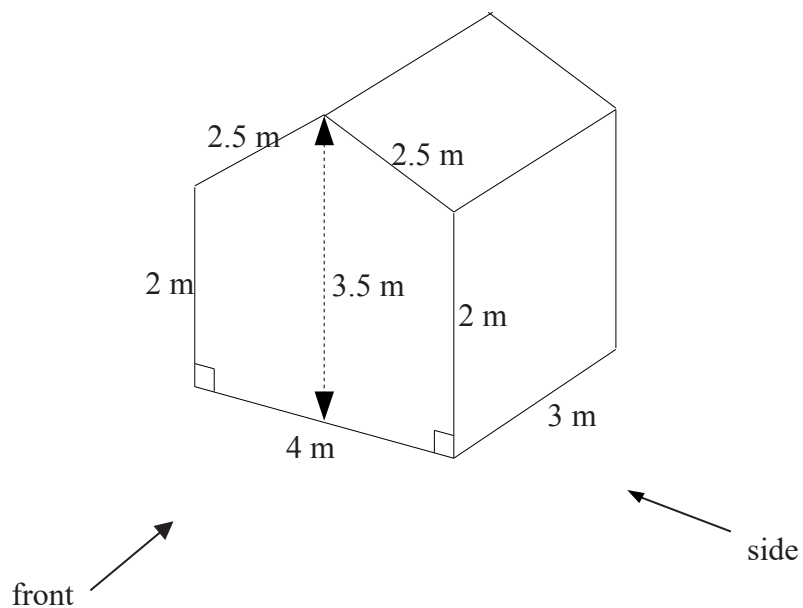$\dfrac{3}{5}$ of the children had seats in the Stalls.

141 children had seats in the Circle.
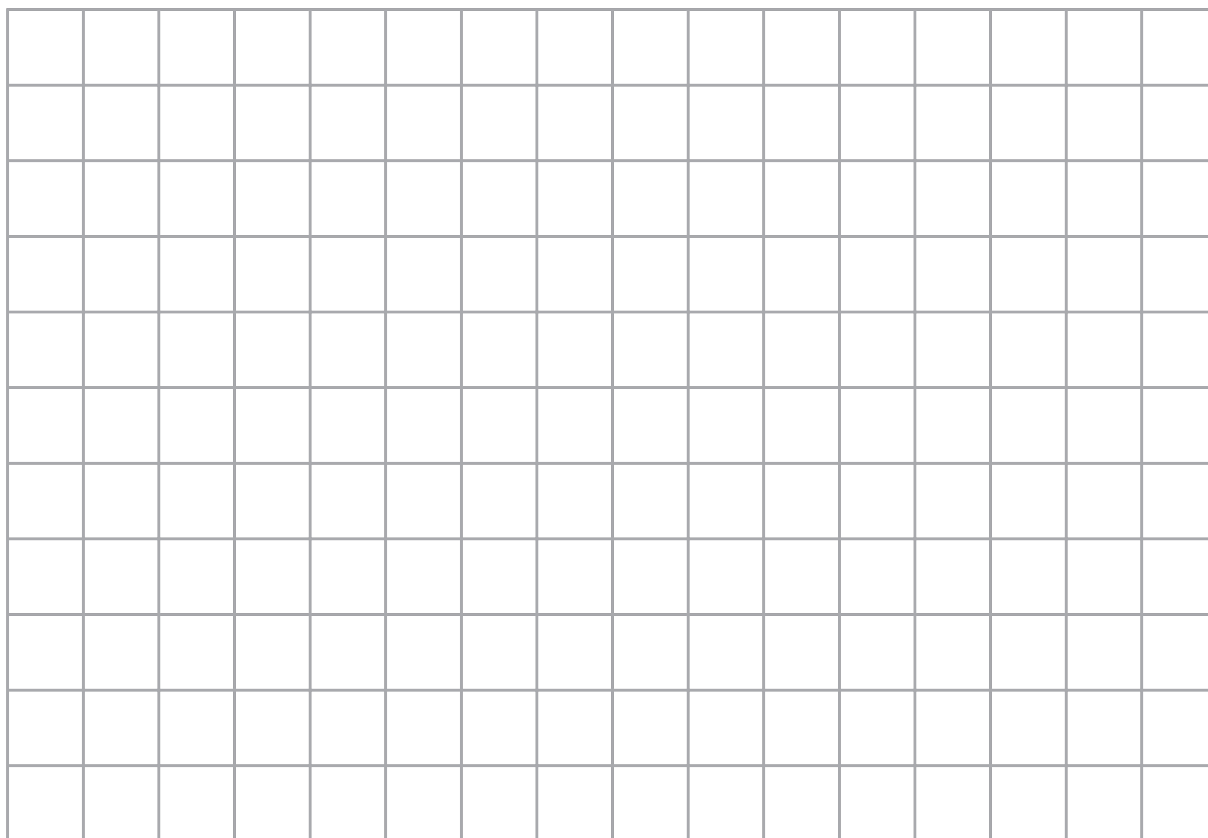
There are exactly 3900 seats in the theatre.

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

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

2.5 m

2.5 m

2 m

3.5 m

2 m

4 m

3 m

side

front

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 93 km from Liverpool to Manchester.
He then drove 72 km from Manchester to Sheffield.

Olly's average speed from Liverpool to Manchester was 85 km/h.
Olly took 45 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)

The distance from Liverpool to Manchester is actually greater than 93 km.

(b) How does this affect your answer to part (a)?

....

....

(1)

(Total for Question 8 is 5 marks)