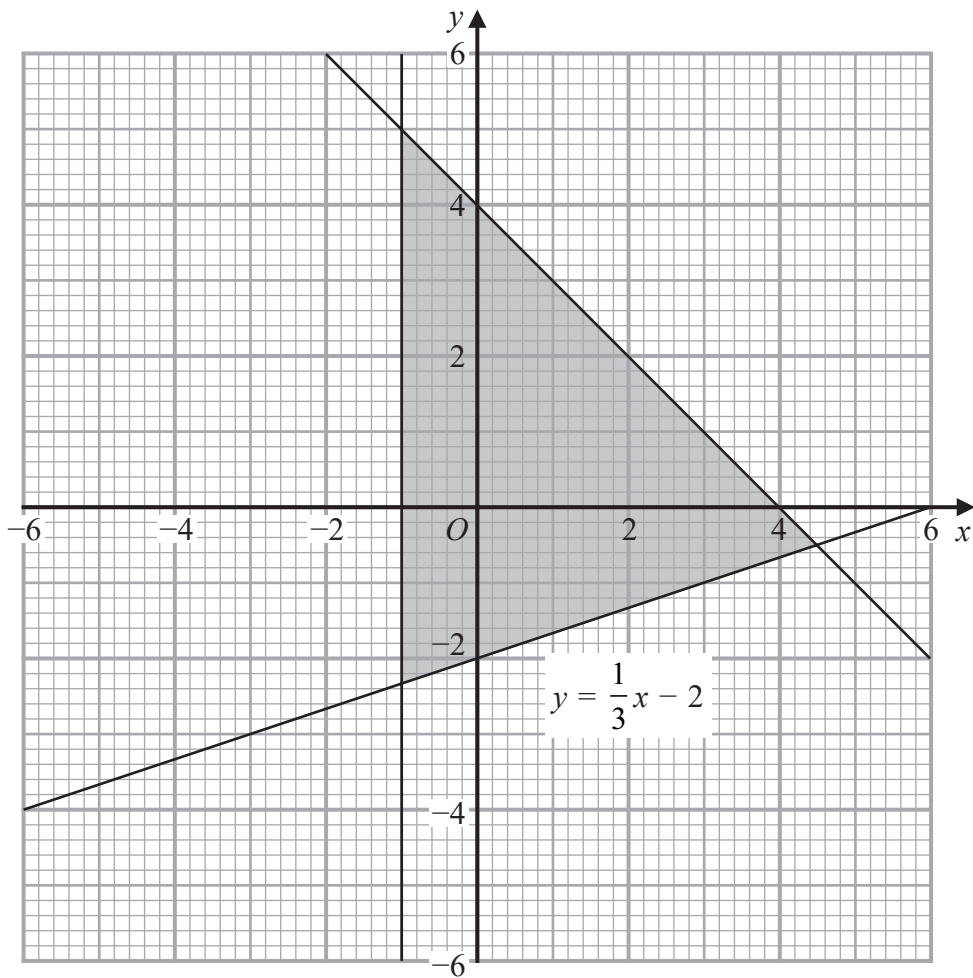


- 10 The shaded region in the diagram is bounded by three lines.
The equation of one of the lines is given.



Write down the three inequalities that define the shaded region.

.....

.....

.....

(Total for Question 10 is 3 marks)



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11 Max invests \$6000 in a savings account for 3 years.
The account pays compound interest at a rate of 1.5% per year for the first 2 years.

The compound interest rate changes for the third year.
At the end of 3 years, there is a total of \$6311.16 in the account.

Work out the compound interest rate for the third year.
Give your answer correct to 1 decimal place.

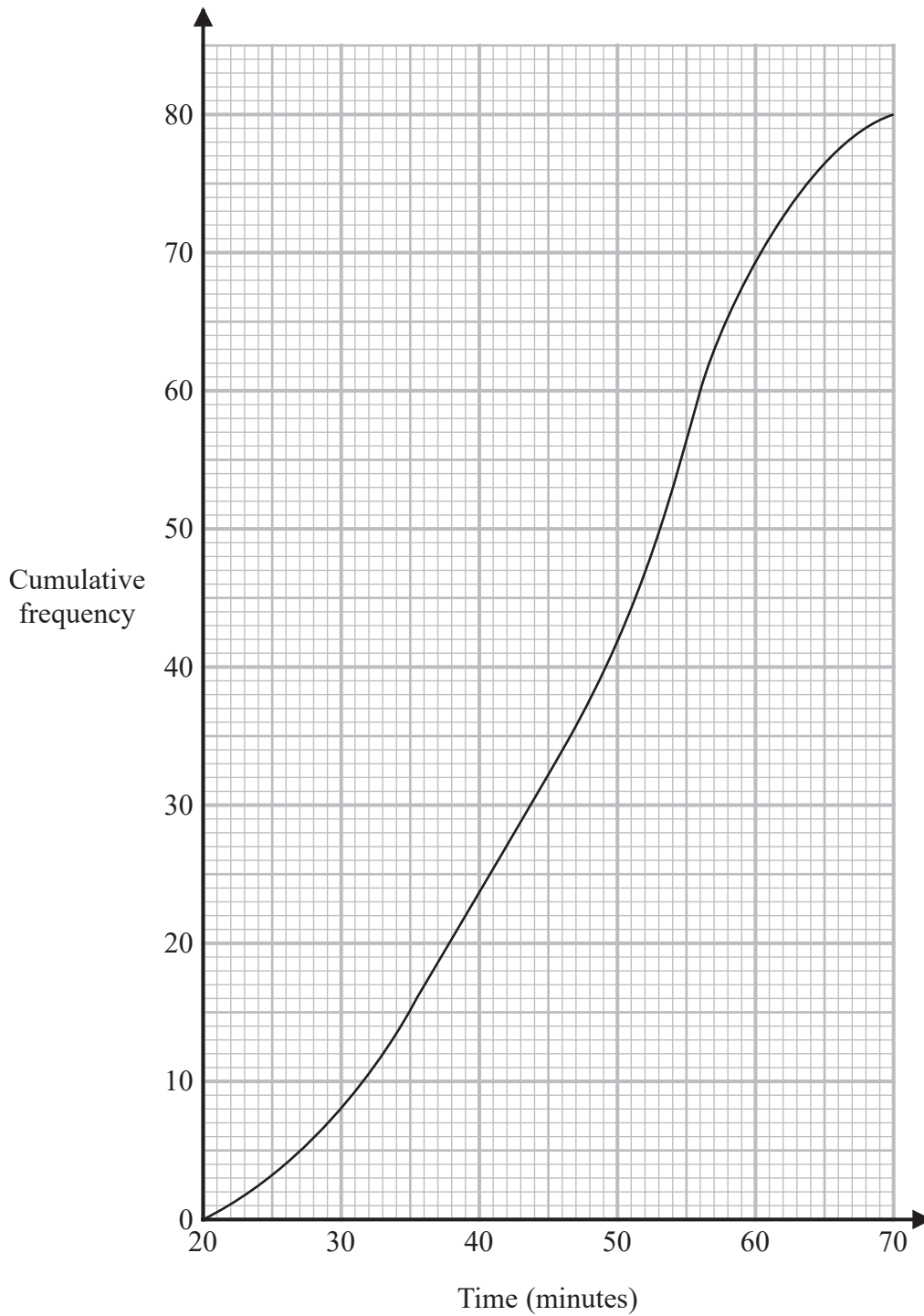
..... %

(Total for Question 11 is 3 marks)



P 5 9 7 5 6 A 0 1 3 2 8

- 12 A total of 80 men and women took part in a race.
The cumulative frequency graph gives information about the times, in minutes, they took for the race.



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(a) Use the graph to find an estimate for the interquartile range.

..... minutes
(2)

60% of the men took 50 minutes or less for the race.

No women took 50 minutes or less for the race.

(b) Work out an estimate for the number of men who took part in the race.

.....
(3)

(Total for Question 12 is 5 marks)



- 13 The diagram shows a solid cube.
The cube is placed on a table so that the whole of one face of the cube is in contact with the table.

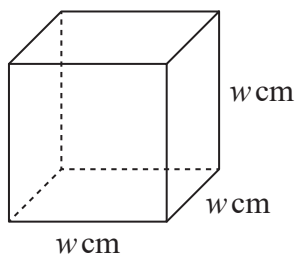


Diagram **NOT**
accurately drawn

The cube exerts a force of 56 newtons on the table.
The pressure on the table due to the cube is $0.14 \text{ newtons/cm}^2$

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Work out the volume of the cube.

..... cm^3

(Total for Question 13 is 4 marks)



- 14 The diagram shows parallelogram $EFGH$.

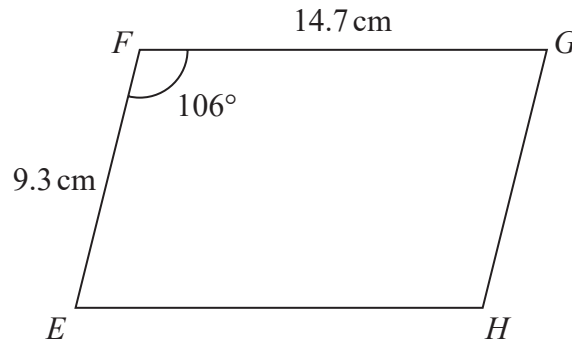


Diagram **NOT**
accurately drawn

$$EF = 9.3 \text{ cm}$$

$$FG = 14.7 \text{ cm}$$

$$\text{Angle } EFG = 106^\circ$$

- (a) Work out the area of the parallelogram.
Give your answer correct to 3 significant figures.

..... cm^2
(2)

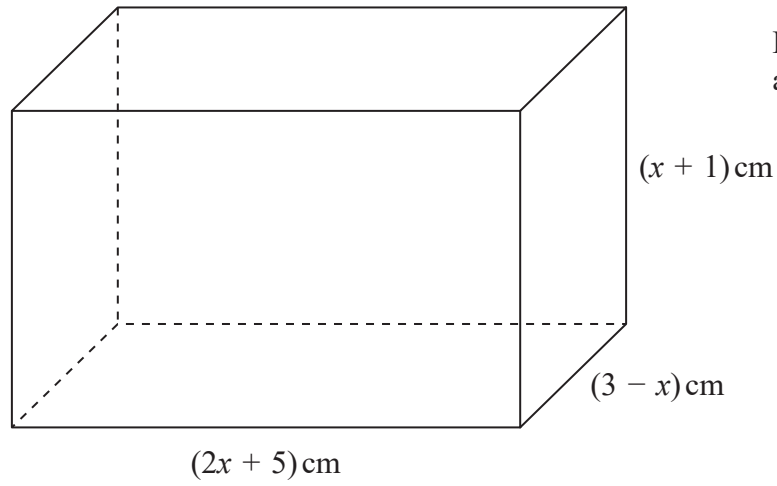
- (b) Work out the length of the diagonal EG of the parallelogram.
Give your answer correct to 3 significant figures.

..... cm
(3)

(Total for Question 14 is 5 marks)



15



The diagram shows a cuboid of volume $V \text{ cm}^3$

(a) Show that $V = 15 + 16x - x^2 - 2x^3$

(3)

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There is a value of x for which the volume of the cuboid is a maximum.

- (b) Find this value of x .
Show your working clearly.
Give your answer correct to 3 significant figures.

$$x = \dots\dots\dots (5)$$

(Total for Question 15 is 8 marks)

