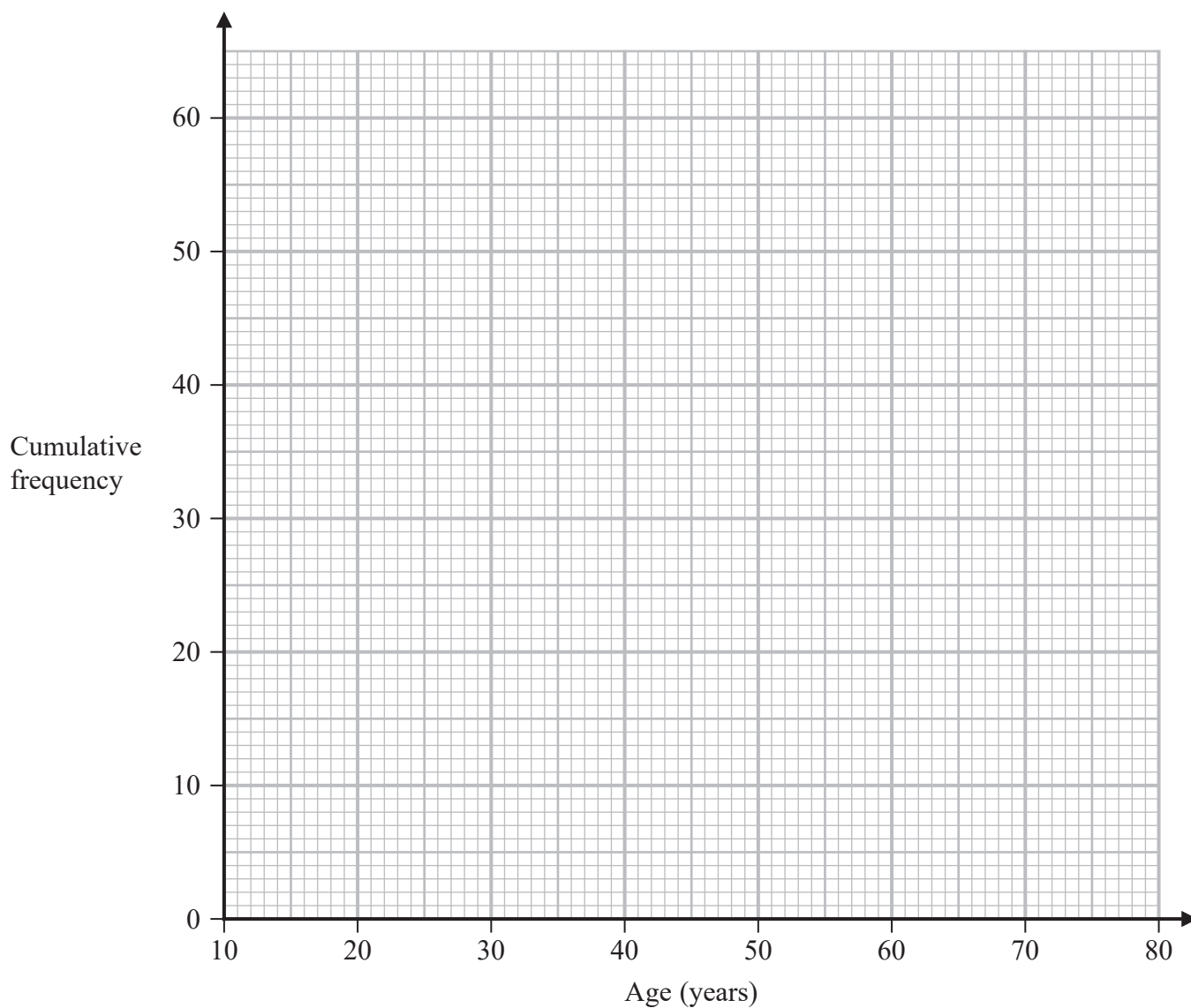


- 11 The cumulative frequency table shows information about the ages of 60 people who went to a gym on Saturday.

| Age ( $a$ years) | Cumulative frequency |
|------------------|----------------------|
| $10 < a \leq 20$ | 13                   |
| $10 < a \leq 30$ | 36                   |
| $10 < a \leq 40$ | 42                   |
| $10 < a \leq 50$ | 47                   |
| $10 < a \leq 60$ | 52                   |
| $10 < a \leq 70$ | 56                   |
| $10 < a \leq 80$ | 60                   |

- (a) On the grid, draw a cumulative frequency graph for the information in the table.



(2)



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**Question 11 continued**

(b) Use your graph to find an estimate for the median of the ages of these people.

..... years  
(1)

(c) Use your graph to find an estimate for the interquartile range of the ages of these people.

..... years  
(2)

(d) Use your graph to find an estimate for the number of these people who are older than 55 years.

.....  
(2)

**(Total for Question 11 is 7 marks)**



12

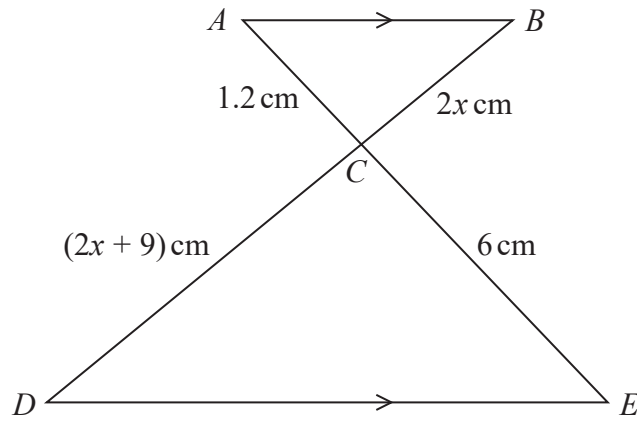


Diagram **NOT** accurately drawn

$ACE$  and  $BCD$  are straight lines.  
 $AB$  is parallel to  $DE$

Work out the value of  $x$

$x = \dots\dots\dots$

(Total for Question 12 is 3 marks)

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13 The diagram shows a sector  $AOB$  of a circle with centre  $O$

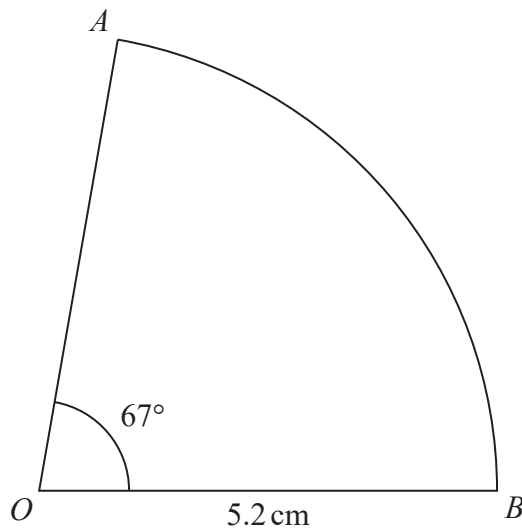


Diagram **NOT** accurately drawn

Angle  $AOB = 67^\circ$   
 $OA = OB = 5.2$  cm

Calculate the perimeter of the sector.  
Give your answer correct to 3 significant figures.

..... cm

**(Total for Question 13 is 3 marks)**



14 Ciara throws **four** fair six-sided dice.

The faces of each dice are labelled with the numbers 1, 2, 3, 4, 5, 6

Work out the probability that at least one of the dice lands on an even number.

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.....  
(Total for Question 14 is 3 marks)



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15 The diagram shows a kite  $ABCD$

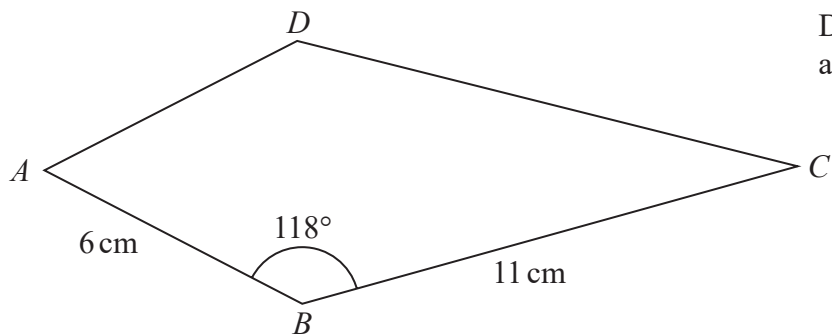


Diagram NOT accurately drawn

$$AB = 6\text{ cm}$$

$$BC = 11\text{ cm}$$

$$\text{Angle } ABC = 118^\circ$$

Calculate the area of the kite.

Give your answer correct to 3 significant figures.

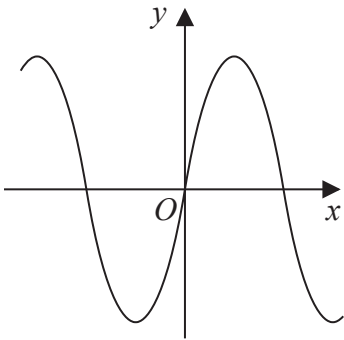
.....  $\text{cm}^2$

(Total for Question 15 is 3 marks)

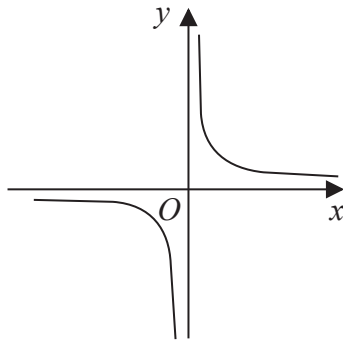


16 Here are nine graphs.

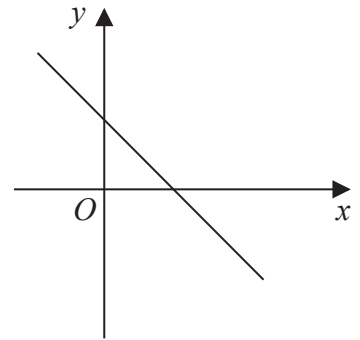
Graph A



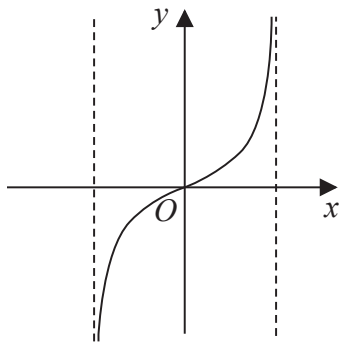
Graph B



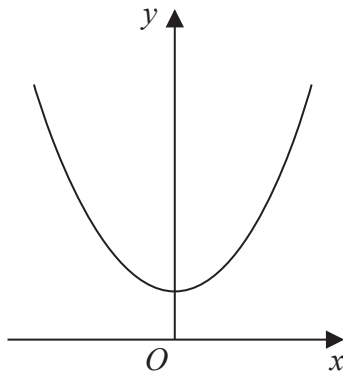
Graph C



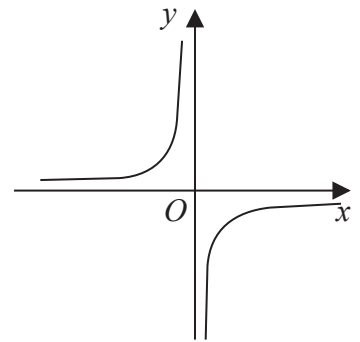
Graph D



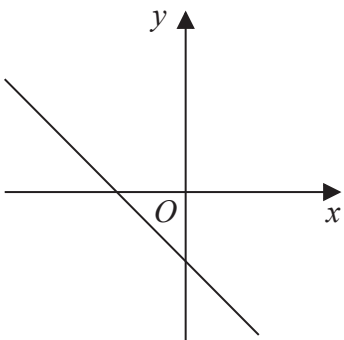
Graph E



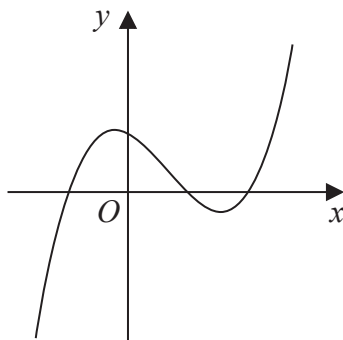
Graph F



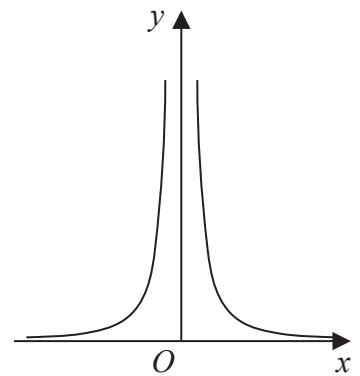
Graph G



Graph H



Graph I



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Complete the table below with the letter of the graph that could represent each given equation. Write each answer on the dotted line.

| Equation                    | Graph |
|-----------------------------|-------|
| $y = -2x + 3$               | ..... |
| $y = -\frac{1}{x}$          | ..... |
| $y = \tan x^\circ$          | ..... |
| $y = (x + 1)(x - 1)(x - 2)$ | ..... |

(Total for Question 16 is 3 marks)

17 Use algebra to show that  $0.3\dot{4}\dot{5} = \frac{19}{55}$

(Total for Question 17 is 2 marks)





18 Kaidan and Sonja went on two different car journeys.

For Kaidan's journey

distance = 80 km correct to the nearest 5 km

time = 2.7 hours correct to 1 decimal place

For Sonja's journey

distance = 33 km correct to 2 significant figures

time = 1 hour correct to the nearest 0.1 hour

Kaidan says,

"My average speed could have been greater than Sonja's average speed."

By considering bounds, show that Kaidan is correct.

Show your working clearly.

(Total for Question 18 is 4 marks)

