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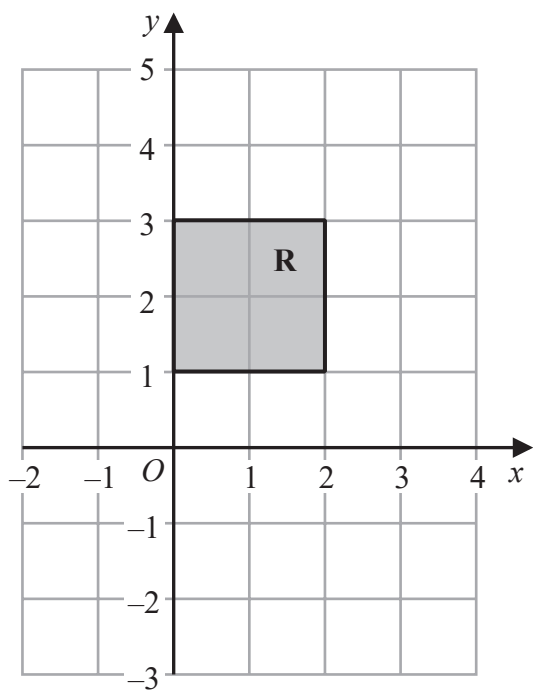
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10 The straight line **L** has gradient 5 and passes through the point with coordinates $(0, -3)$

(a) Write down an equation for **L**.

.....
(2)

(b)



The region **R**, shown shaded in the diagram, is bounded by four straight lines.

Write down the inequalities that define **R**.

.....
(2)

(Total for Question 10 is 4 marks)



- 11 The table gives the average crowd attendance per match for each of five football clubs for one season.

| Football club | Average crowd attendance |
|---------------|--------------------------|
| Monaco | 9.5×10^3 |
| Chelsea | 4.2×10^4 |
| Juventus | 3.9×10^4 |
| Oxford United | 8.3×10^3 |
| Barcelona | 7.7×10^4 |

- (a) Find the difference between the average crowd attendance for Barcelona and the average crowd attendance for Monaco.
Give your answer in standard form.

.....
(2)

Antonio says,

“The average crowd attendance for Chelsea is approximately 50 times that for Oxford United.”

- (b) Is Antonio correct?
You must give a reason for your answer.

.....
.....
.....
(2)

During last season the cost of a ticket to watch Seapron United increased by 15% and then decreased by 8%

- (c) Work out the overall percentage change in the cost of a ticket to watch Seapron United during last season.

.....%

(2)

(Total for Question 11 is 6 marks)



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12 $ABCD$ is a trapezium.

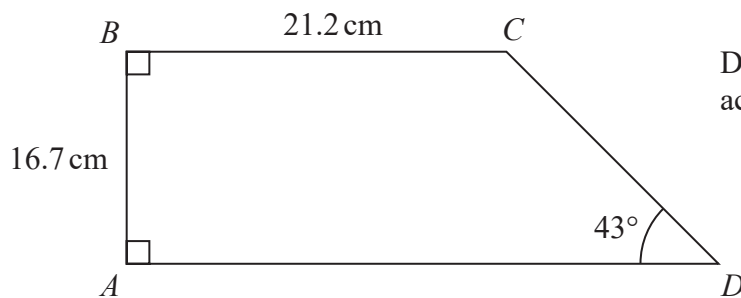


Diagram **NOT** accurately drawn

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

.....cm

(Total for Question 12 is 4 marks)



13 The table gives information about the times taken, in minutes, for 80 taxi journeys.

| Time taken (t minutes) | Frequency |
|---------------------------|-----------|
| $0 < t \leq 5$ | 7 |
| $5 < t \leq 10$ | 10 |
| $10 < t \leq 15$ | 12 |
| $15 < t \leq 20$ | 19 |
| $20 < t \leq 25$ | 18 |
| $25 < t \leq 30$ | 14 |

(a) Complete the cumulative frequency table.

| Time taken (t minutes) | Cumulative frequency |
|---------------------------|----------------------|
| $0 < t \leq 5$ | |
| $0 < t \leq 10$ | |
| $0 < t \leq 15$ | |
| $0 < t \leq 20$ | |
| $0 < t \leq 25$ | |
| $0 < t \leq 30$ | |

(1)

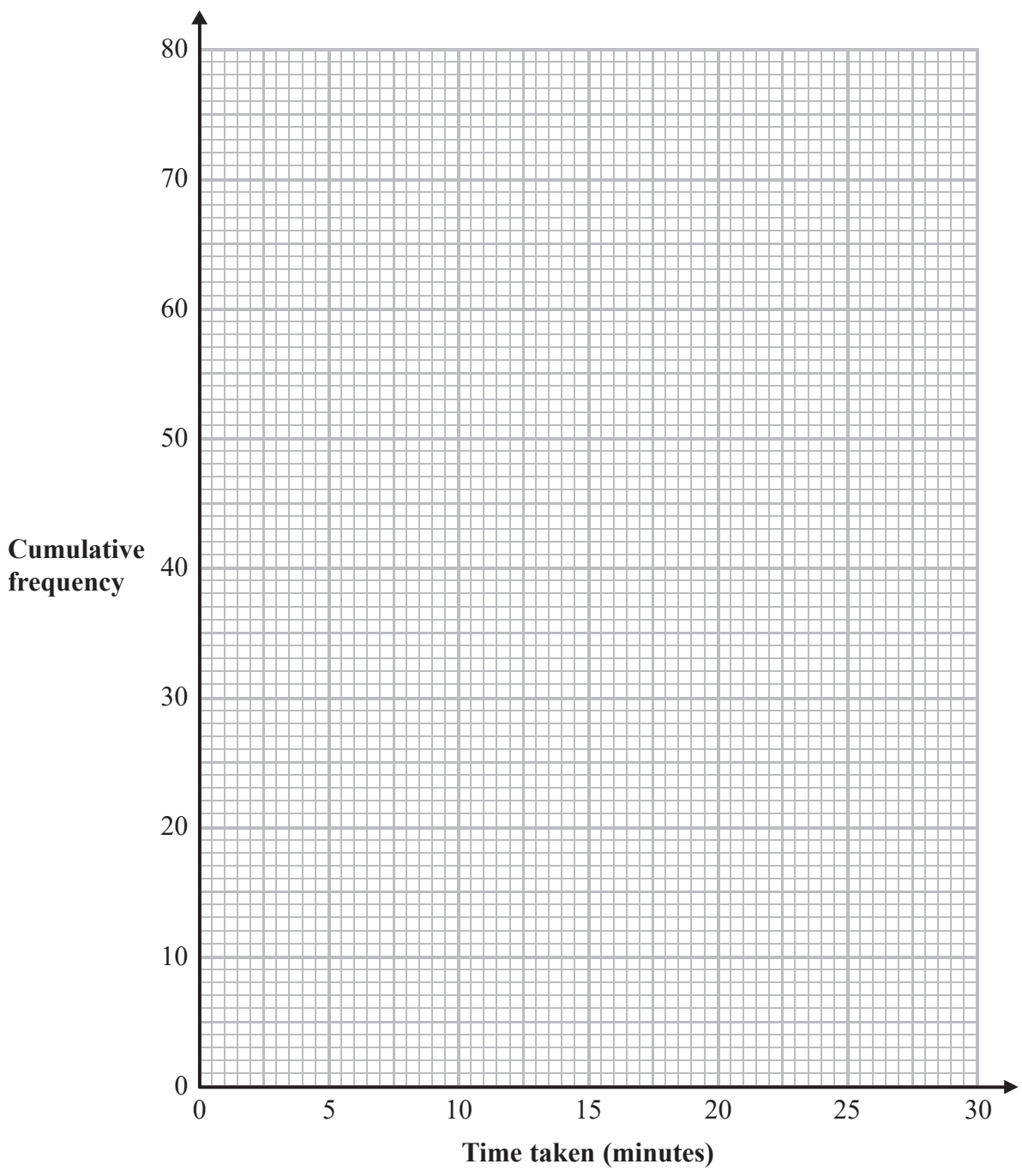
(b) On the grid opposite, draw a cumulative frequency graph for your table.



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(2)

(c) Use your graph to find an estimate for the median.

.....minutes
(1)

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

.....minutes
(2)

(Total for Question 13 is 6 marks)



14 Here are two vectors.

$$\vec{AB} = \begin{pmatrix} 6 \\ -9 \end{pmatrix} \quad \vec{CB} = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$$

Find the magnitude of \vec{AC} .

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

15 Make x the subject of the formula $y = \sqrt{\frac{3x-2}{x+1}}$

.....
(Total for Question 15 is 4 marks)



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16 Show that $\frac{4 + \sqrt{8}}{\sqrt{2} - 1}$ can be written in the form $a + b\sqrt{2}$, where a and b are integers.

Show each stage of your working clearly and give the value of a and the value of b .

(Total for Question 16 is 3 marks)



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

17 y is directly proportional to the cube of x
 $y = 20h$ when $x = h$ ($h \neq 0$)

(a) Find a formula for y in terms of x and h

$$y = \dots\dots\dots (3)$$

(b) Find x in terms of h when $y = 67.5h$
Give your answer in its simplest form.

$$x = \dots\dots\dots (2)$$

(Total for Question 17 is 5 marks)

