1 The table shows some information about the profit made each day at a cricket club on 100 days.

Profit (£x)	Frequency
$0 \leqslant x < 50$	10
$50 \leqslant x < 100$	15
$100 \leqslant x < 150$	25
$150 \leqslant x < 200$	30
$200 \leqslant x < 250$	5
$250 \leqslant x < 300$	15

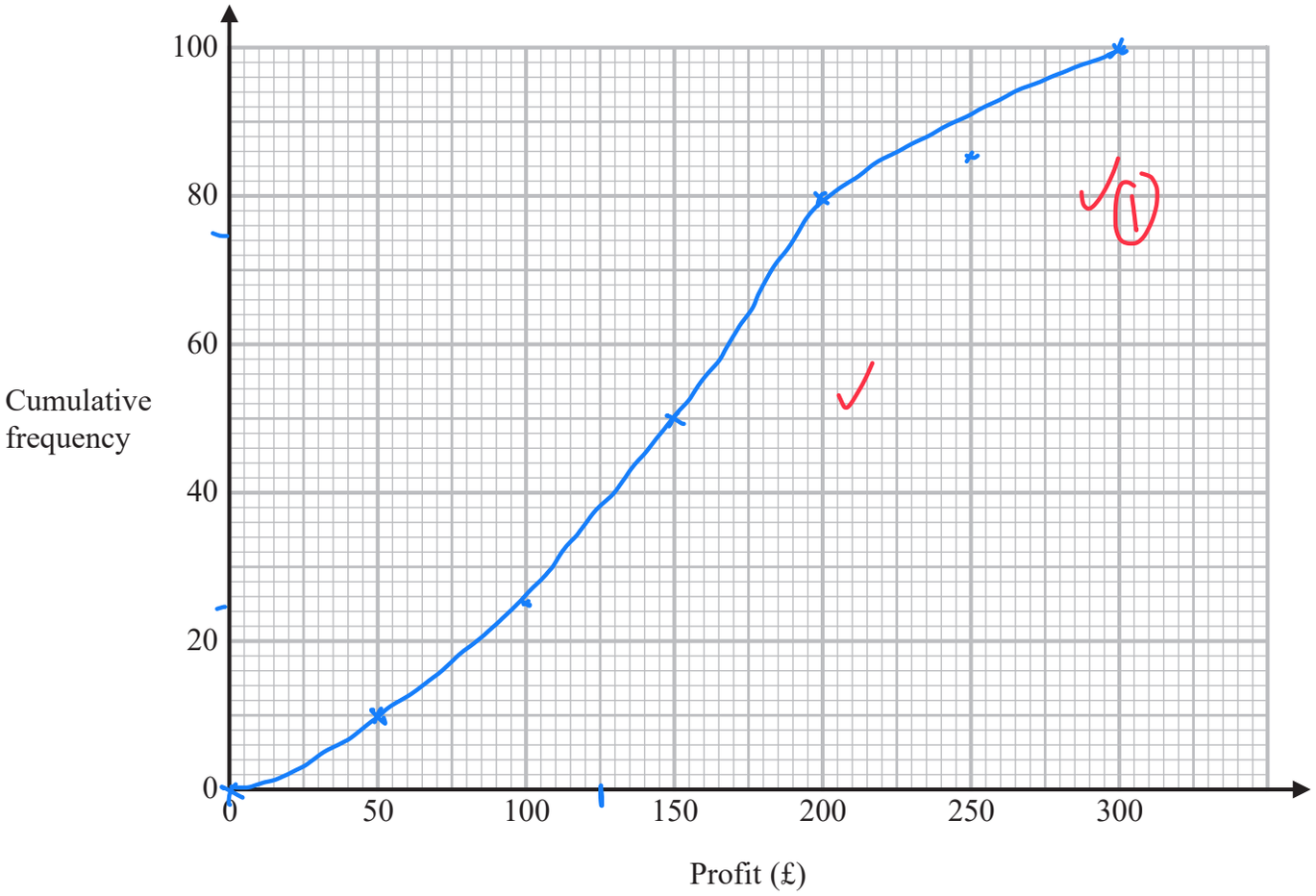
(a) Complete the cumulative frequency table.

Profit (£x)	Cumulative frequency
$0 \leqslant x < 50$	10
$0 \leqslant x < 100$	25
$0 \leqslant x < 150$	50
$0 \leqslant x < 200$	80
$0 \leqslant x < 250$	85
$0 \leqslant x < 300$	100

✓ (1)

(1)

(b) On the grid, draw a cumulative frequency graph for this information.



(2)

(c) Use your graph to find an estimate for the number of days on which the profit was less than £125

at £125, days are 36 ✓(1) 36 ..... days

(1)

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

day 25 to 75

£100 191 ✓(1)

191 − 100 = 91 ✓(1) £ 91 .....

(2)

(Total for Question 1 is 6 marks)

2 In an experiment, 60 students each completed a puzzle.

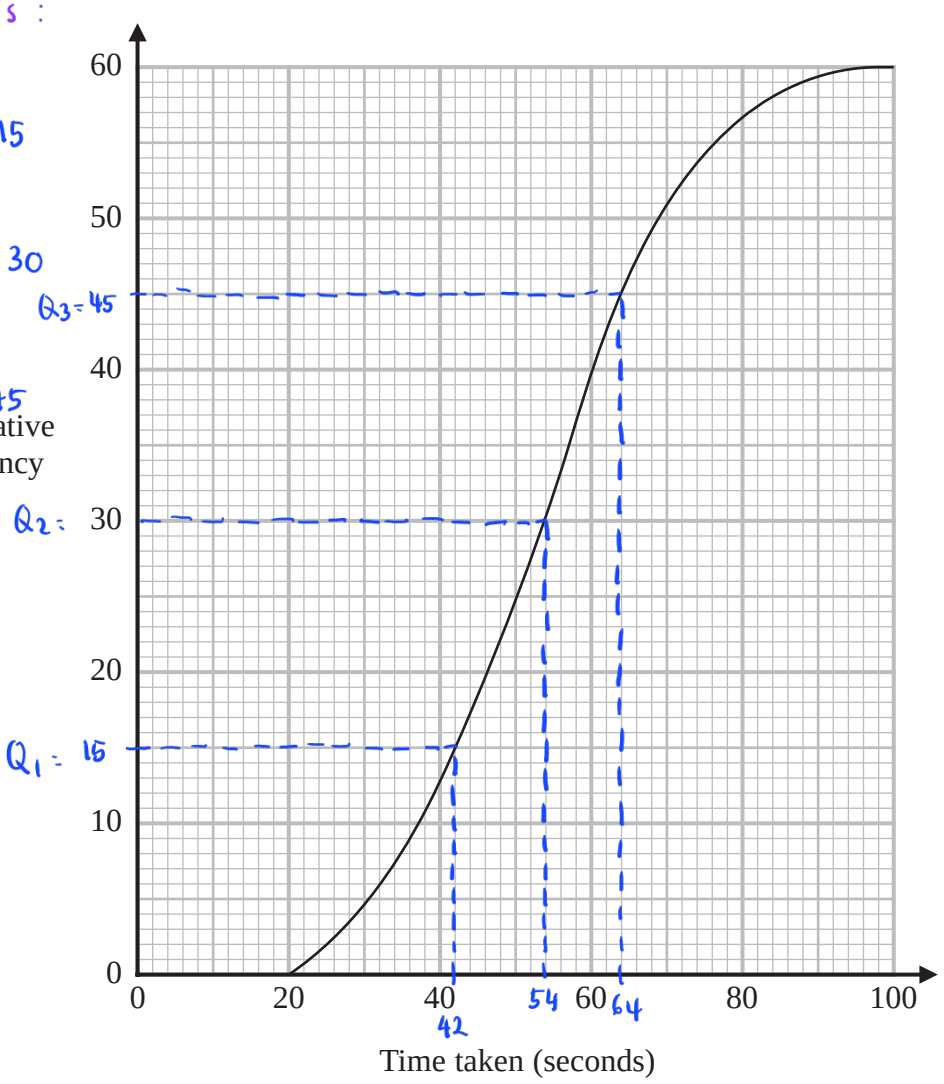
The cumulative frequency graph shows information about the times taken for the 60 students to complete the puzzle.

Finding quartiles :

$Q_1 : \frac{1}{4}(60) = 15$

$Q_2 : \frac{1}{2}(60) = 30$

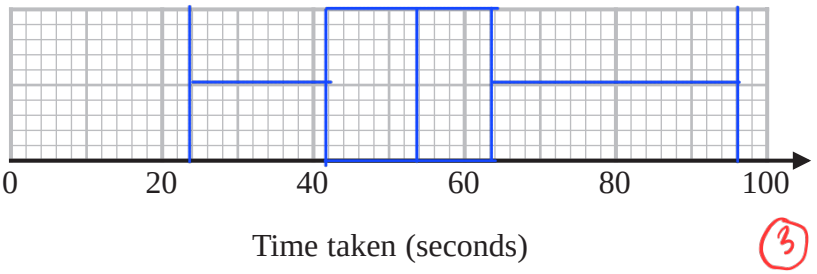
$Q_3 : \frac{3}{4}(60) = 45$



For these 60 students,

the least time taken was 24 seconds
the greatest time taken was 96 seconds.

On the grid below, draw a box plot for the distribution of the times taken by the students.



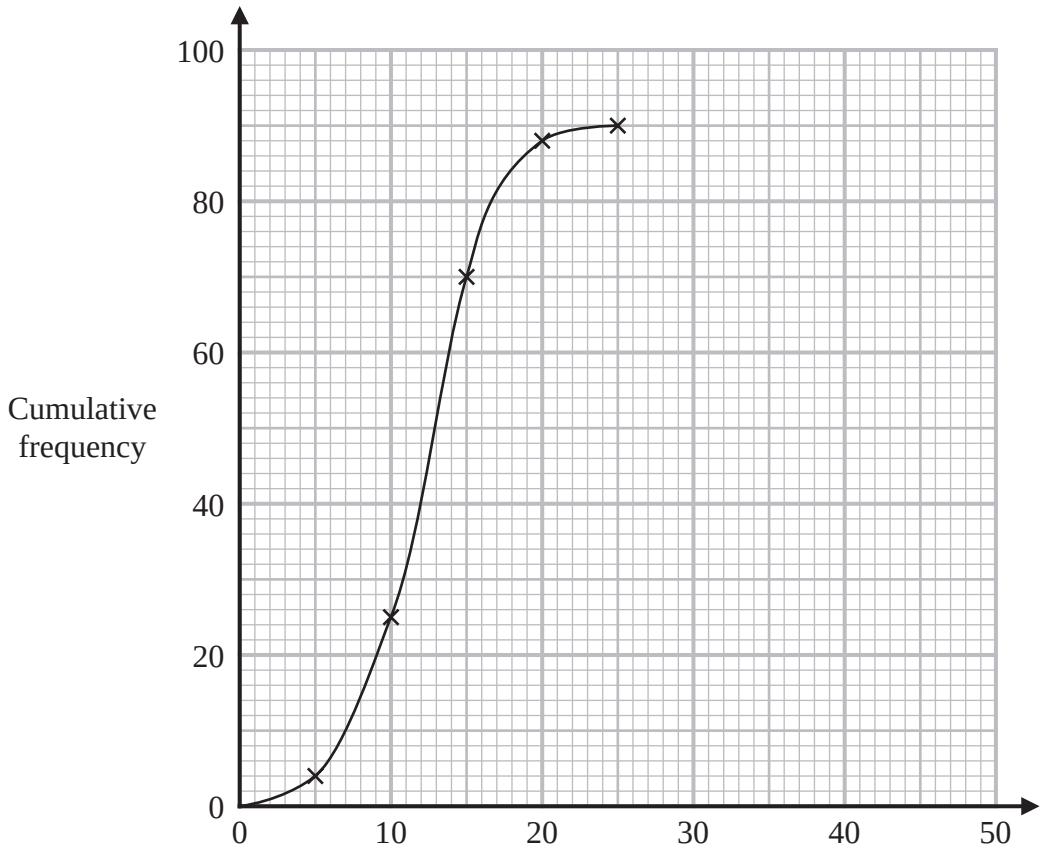
(3)

(Total for Question 2 is 3 marks)

3 Chen has this information about the time that it took an operator at a call centre to answer each of 90 calls.

Time (t seconds)	Cumulative frequency
$0 < t \leqslant 10$	4
$0 < t \leqslant 20$	25
$0 < t \leqslant 30$	70
$0 < t \leqslant 40$	88
$0 < t \leqslant 50$	90

Chen draws this cumulative frequency graph for the information in the table.



Write down two different things that are wrong with this graph.

1 The horizontal axis is not labelled. (1)

2 The graph has been plotted using midpoints instead of endpoints. (1)

(Total for Question 3 is 2 marks)

4 The cumulative frequency table gives information about the ages of 80 people working for a company.

Age (a years)	Cumulative frequency
$20 < a \leqslant 30$	20
$20 < a \leqslant 40$	48
$20 < a \leqslant 50$	64
$20 < a \leqslant 60$	75
$20 < a \leqslant 70$	80

(a) On the grid opposite, draw a cumulative frequency graph for this information.

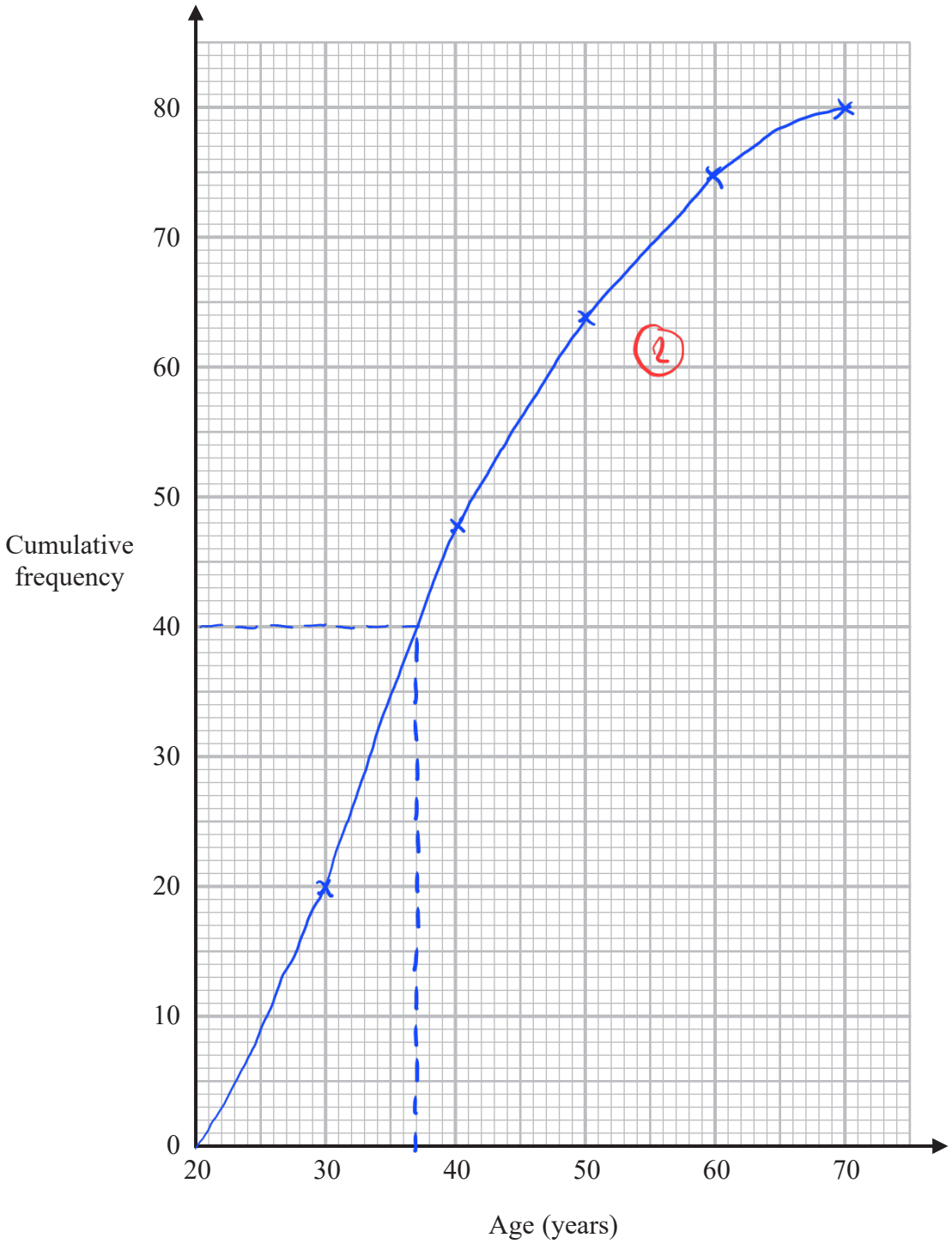
(2)

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

37 (1)

..... years

(1)



(Total for Question 4 is 3 marks)

5 The frequency table gives information about the weights of 60 parcels.

Weight (w kg)	Frequency
$0 < w \leqslant 2$	7
$2 < w \leqslant 4$	21
$4 < w \leqslant 6$	15
$6 < w \leqslant 8$	11
$8 < w \leqslant 10$	6

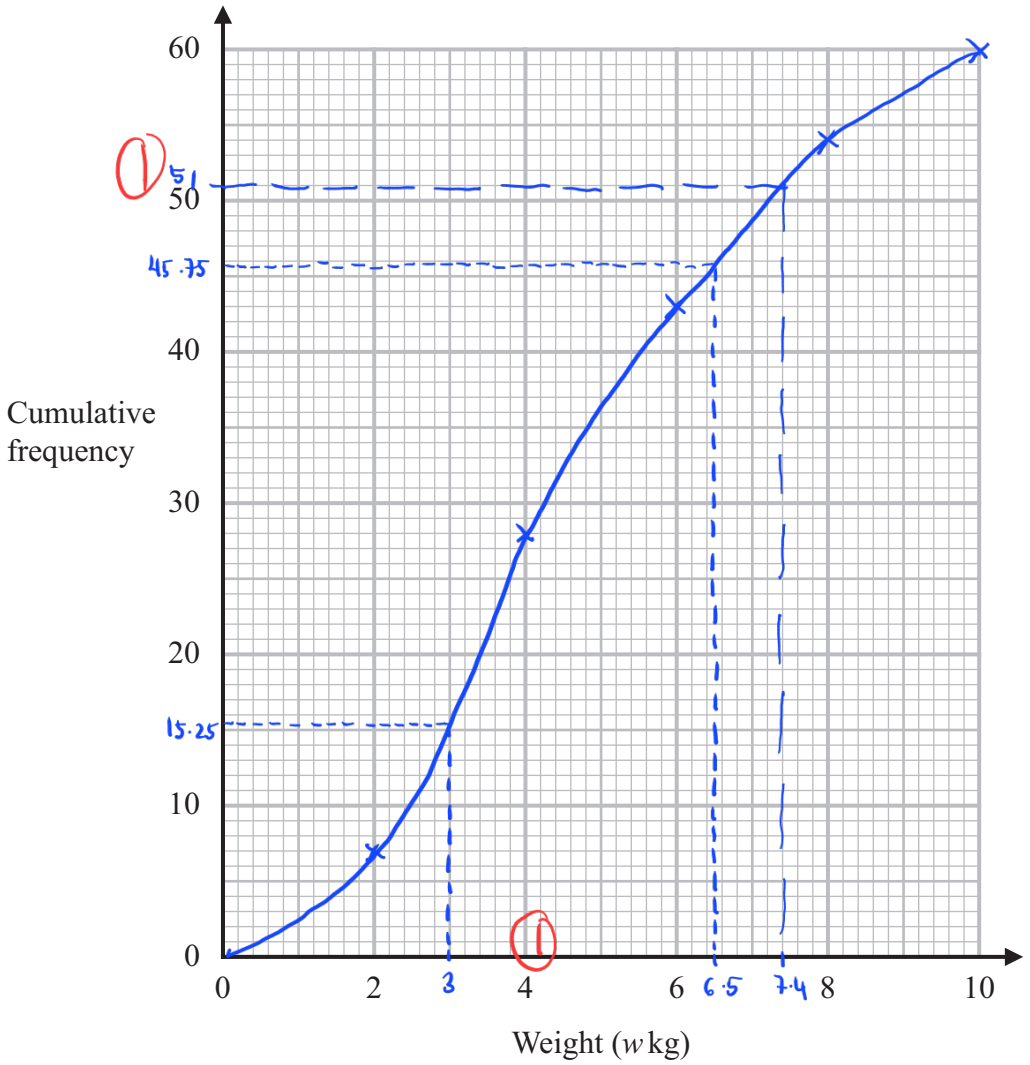
(a) Complete the cumulative frequency table.

Weight (w kg)	Cumulative frequency
$0 < w \leqslant 2$	7
$0 < w \leqslant 4$	28
$0 < w \leqslant 6$	43
$0 < w \leqslant 8$	54
$0 < w \leqslant 10$	60 (1)

(1)

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

(2)



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

lower quartile : $\frac{(n+1)}{4} = \frac{60+1}{4} = 15.25$ (3 kg)

upper quartile : $\frac{3(n+1)}{4} = 3(15.25) = 45.75$ (6.5 kg)

Interquartile range : $6.5 - 3 = 3.5$

3.5 (1)

..... kg

(2)

(d) Use your graph to find an estimate for the number of these parcels with a weight greater than 7.4 kg.

from graph : when weight 7.4 kg, c.frequency = 51

$60 - 51 = 9$ (1)

9

.....

(2)

(Total for Question 5 is 7 marks)