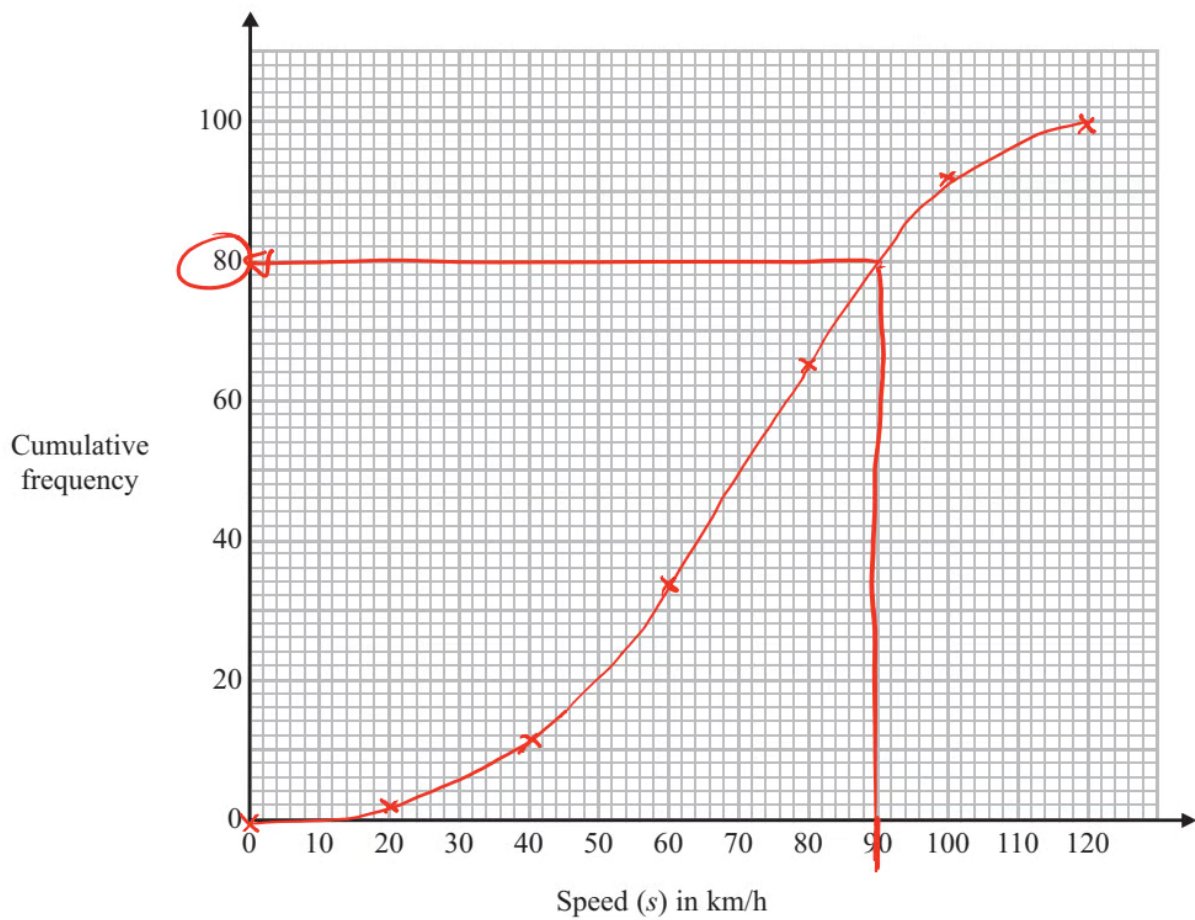# GCSE OCR Math J560

Cumulative Frequency Graphs

Answers

"We will help you to achieve A Star "

Answer 1
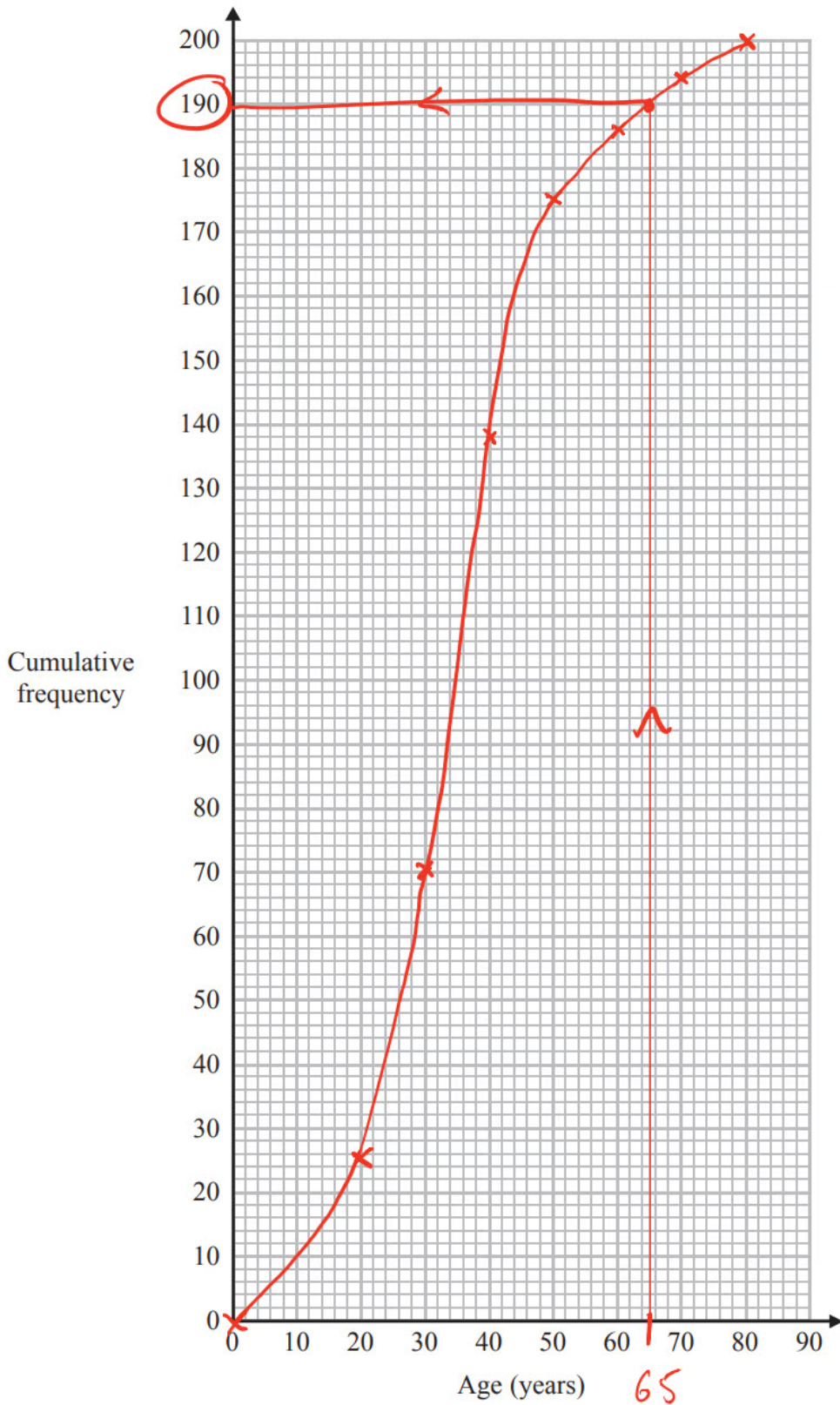
(b) On the grid, draw a cumulative frequency graph for your table.

Speed (s) in km/h

Answer 2

Answer 3

Sue works for a company that delivers parcels.

One day the company delivered 80 parcels.
The table shows information about the weights, in kg, of these parcels.

Weight (w kg)	Frequency
$0 < w \leqslant 1$	19
$1 < w \leqslant 2$	17
$2 < w \leqslant 3$	15
$3 < w \leqslant 4$	12
$4 < w \leqslant 5$	10
$5 < w \leqslant 6$	7

(a) Complete the cumulative frequency table.

Weight (w kg)	Cumulative frequency	
$0 < w \leqslant 1$	19	} +17
$0 < w \leqslant 2$	36	} +15
$0 < w \leqslant 3$	51	} +12
$0 < w \leqslant 4$	63	} +10
$0 < w \leqslant 5$	73	} +7
$0 < w \leqslant 6$	80	

Answer 4

Sue says,

"75% of the parcels weigh less than 3.4 kg."

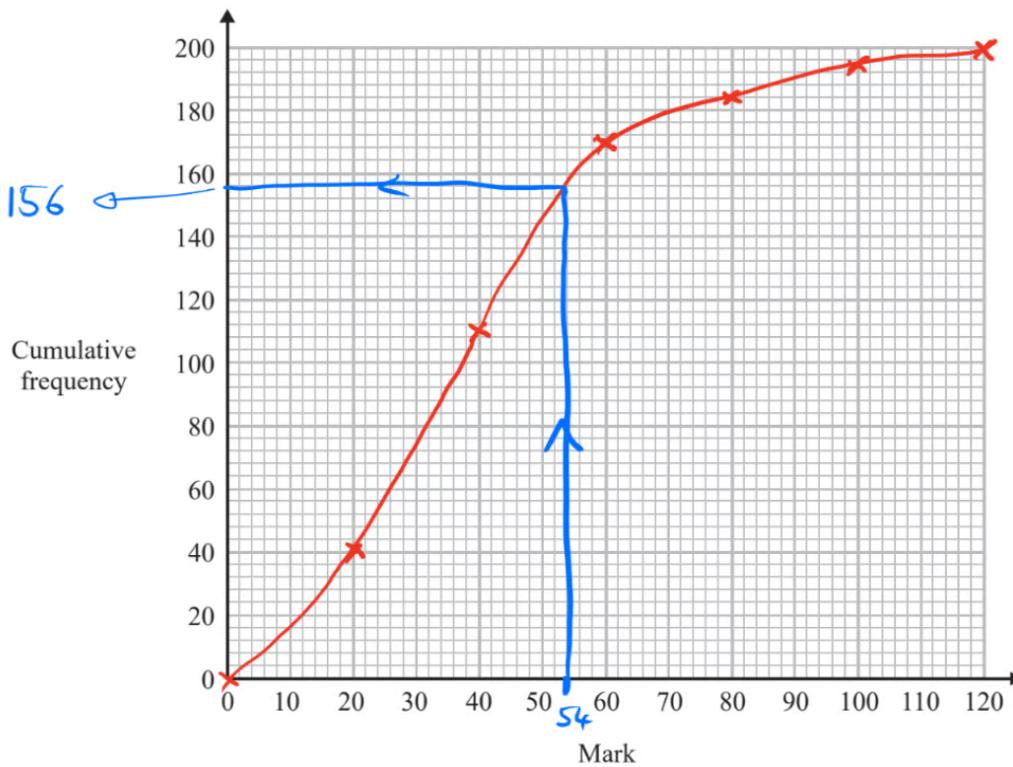*(c) Is Sue correct?
You must show how you get your answer.
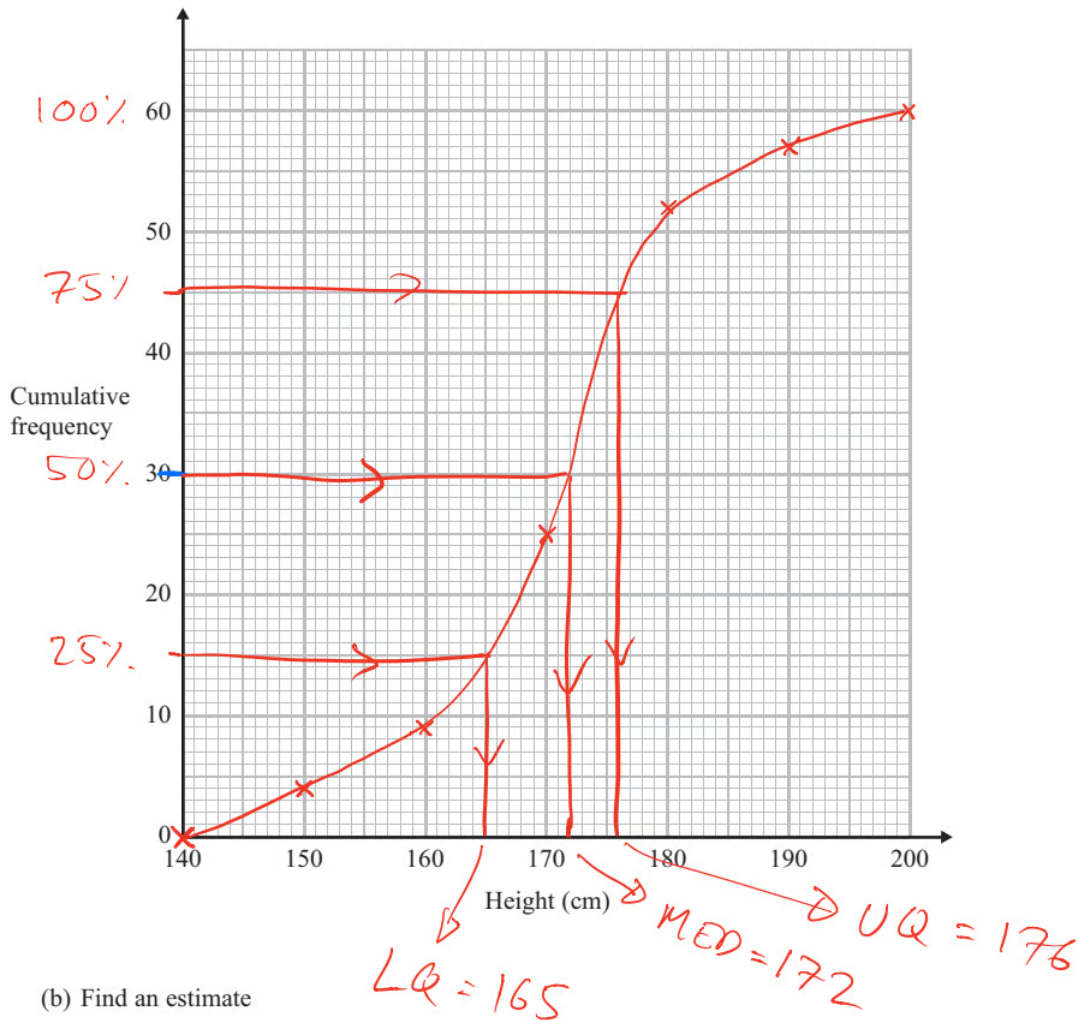
No. She should have said 3.7 kg.

Answer 5

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

PLOT POINTS AT UPPER END OF INTERVALS

Answer 6

100% 60

75%

Cumulative
frequency

50% 30

25%

Height (cm)

MED = 172   UQ = 176

LQ = 165

(b) Find an estimate

(i) for the median,

MIDDLE
VALUE

172 .... cm

(ii) for the interquartile range.

$$IQR = UQ - LQ$$

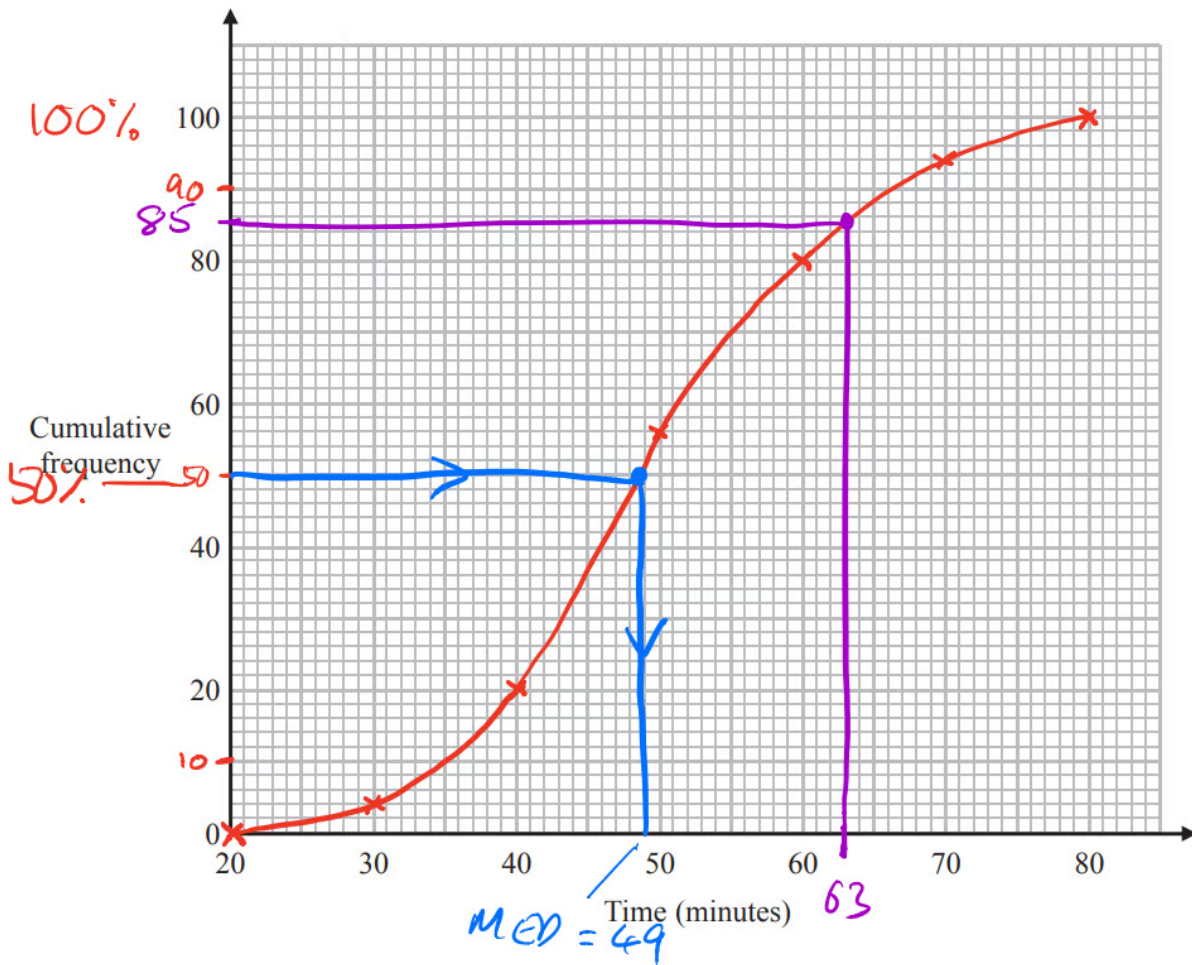$$= 176 - 165$$

$$= 11 \text{ cm}$$

Answer 7
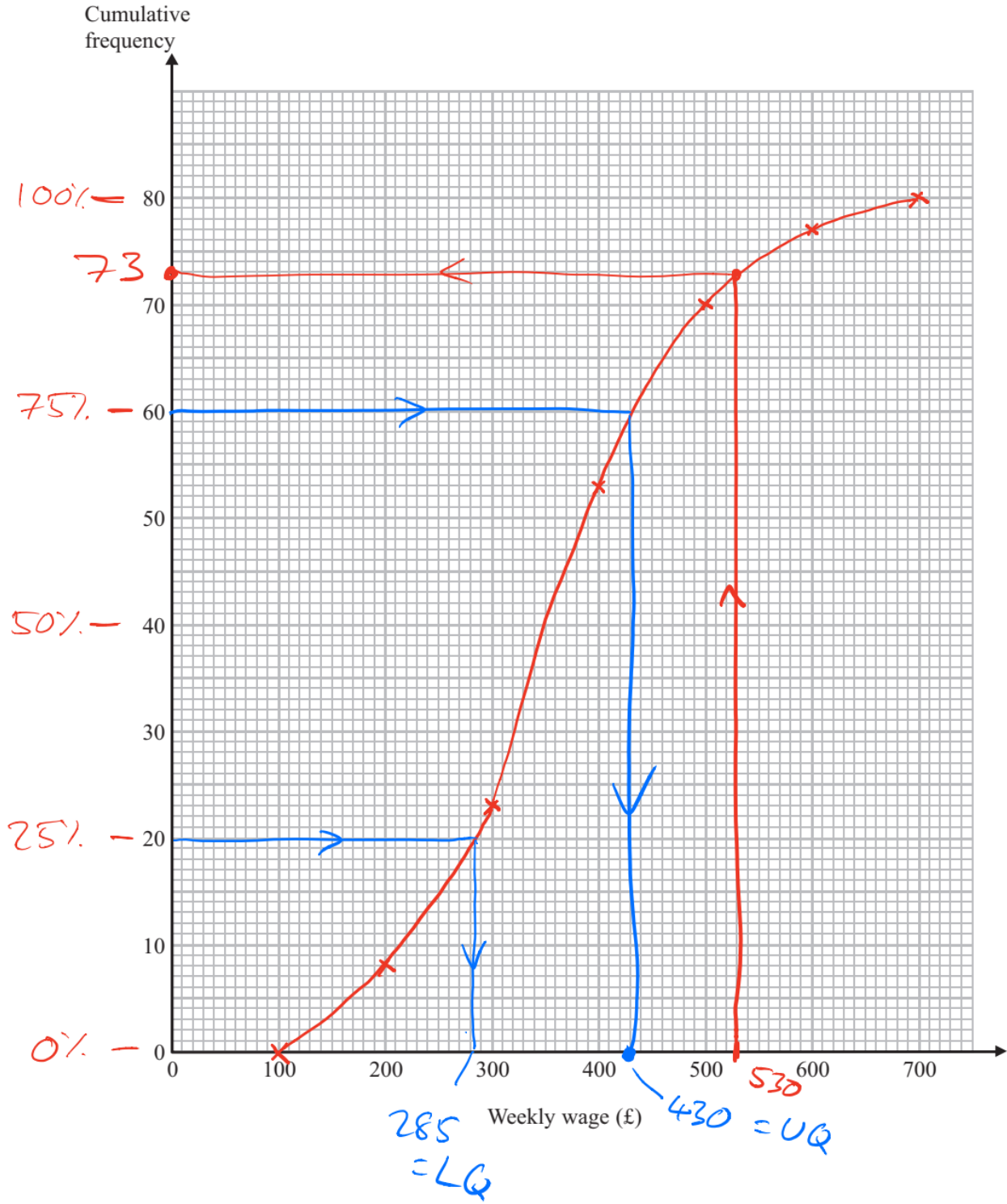
Answer 8

(d) Use your graph to find an estimate for the number of workers with a weekly wage of more than £530

FROM GRAPH 73 WORKERS EARN
LESS THAN £530. SO 80 - 73 = 7

MORE THAN

Answer 9

PLOT AT UPPER END OF INTERVAL

100%

90

85

50%

Cumulative frequency

50%

MED = 49

63

Time (minutes)

Answer 10

(d) Use your graph to find an estimate for the number of people who took longer than 63 minutes.

85 PEOPLE TOOK LESS THAN 63 MINUTES

So 100 - 85 = 15 PEOPLE TOOK MORE THAN 63 MINUTES

Answer 11

(b) Use the graph to find an estimate for the interquartile range of the weights.

$$IQR = UQ - LQ$$
$$= 133 - 122$$
$$= \underline{11g}$$

Answer 12

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

No, As WE DON'T KNOW THE ACTUAL
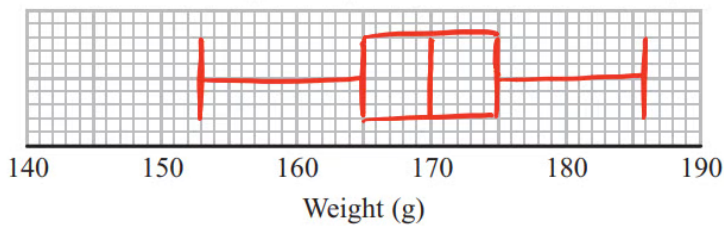MINIMUM (OR MAXIMUM) WEIGHTS.

Answer 13

The 60 tomatoes from group A
had a minimum weight of 153 grams
and a maximum weight of 186 grams.

(b) Use this information and the cumulative frequency graph to draw a box plot
for the 60 tomatoes from group A.

MIN ✓ = 153
LQ = 165
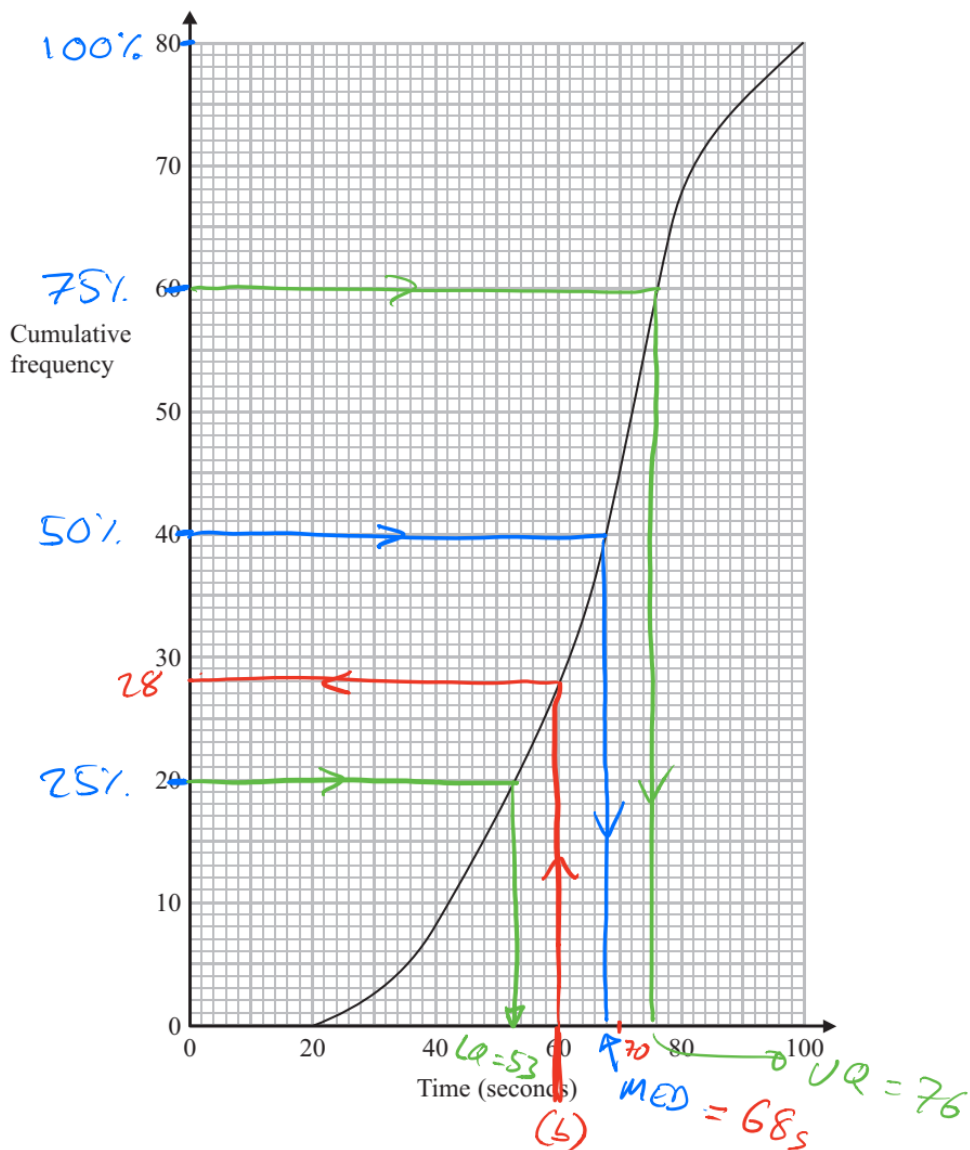MED ✓ = 170
UQ = 175
MAX ✓ = 186

Group A

140   150   160   170   180   190

Weight (g)

The cumulative frequency graph shows information about the times 80 swimmers take to swim 50 metres.

100% 80
75%
50%
25%
28

LQ = 53
MED = 68s
UQ = 76

(a) Use the graph to find an estimate for the median time.

MEDIAN = MIDDLE TIME

68 seconds

Answer 15

For these 80 swimmers

the least time taken was 28 seconds
and the greatest time taken was 96 seconds.

(c) Use the cumulative frequency graph and the information above to draw a box plot for
the times taken by the swimmers.

MIN, $\underline{LQ}$, MED, $\underline{UQ}$, MAX
28   53   68   76   96

Time (seconds)