This table shows the distribution of the times, in hours and minutes, taken by 100 runners to complete a half marathon.

Time (t hours and minutes)	Number of runners (frequency)
1 h < t ≤ 1 h 10 min	6
1 h 10 min < t ≤ 1 h 20 min	24
1 h 20 min < t ≤ 1 h 30 min	44
1 h 30 min < t ≤ 1 h 40 min	20
1 h 40 min < t ≤ 1 h 50 min	5
1 h 50 min < t ≤ 2 h	1

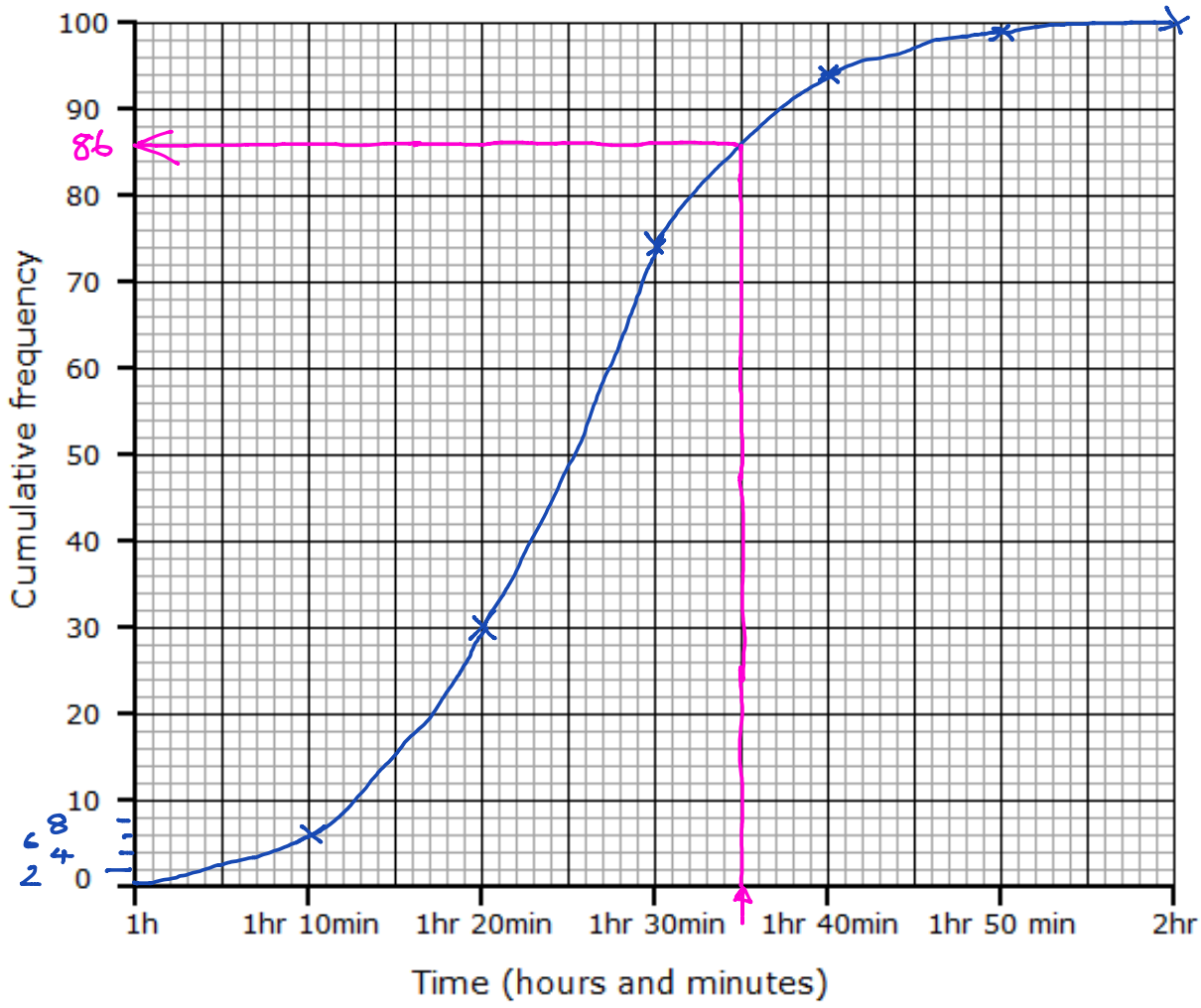
a) Complete the cumulative frequency table below

Time (t hours and minutes)	Cumulative Frequency
t ≤ 1 h	0
t ≤ 1 h 10 min	6
t ≤ 1 h 20 min	30
t ≤ 1 h 30 min	74
t ≤ 1 h 40 min	94
t ≤ 1 h 50 min	99
t ≤ 2 h	100

(1)

b) On the grid, draw a cumulative frequency diagram for the times.

(3)



c) Use the cumulative frequency diagram to find an estimate of the number of runners who took longer than 1 hour 35 minutes.

= 14

(2)

JustMaths

A garage keeps records of the costs of repairs to customers' cars. The table gives information about these costs for one month.

Cost (£C)	Frequency
$0 < C \leq 200$	7
$200 < C \leq 400$	11
$400 < C \leq 600$	9
$600 < C \leq 800$	10
$800 < C \leq 1000$	8
$1000 < C \leq 1200$	5

(a) Write down the modal class interval.

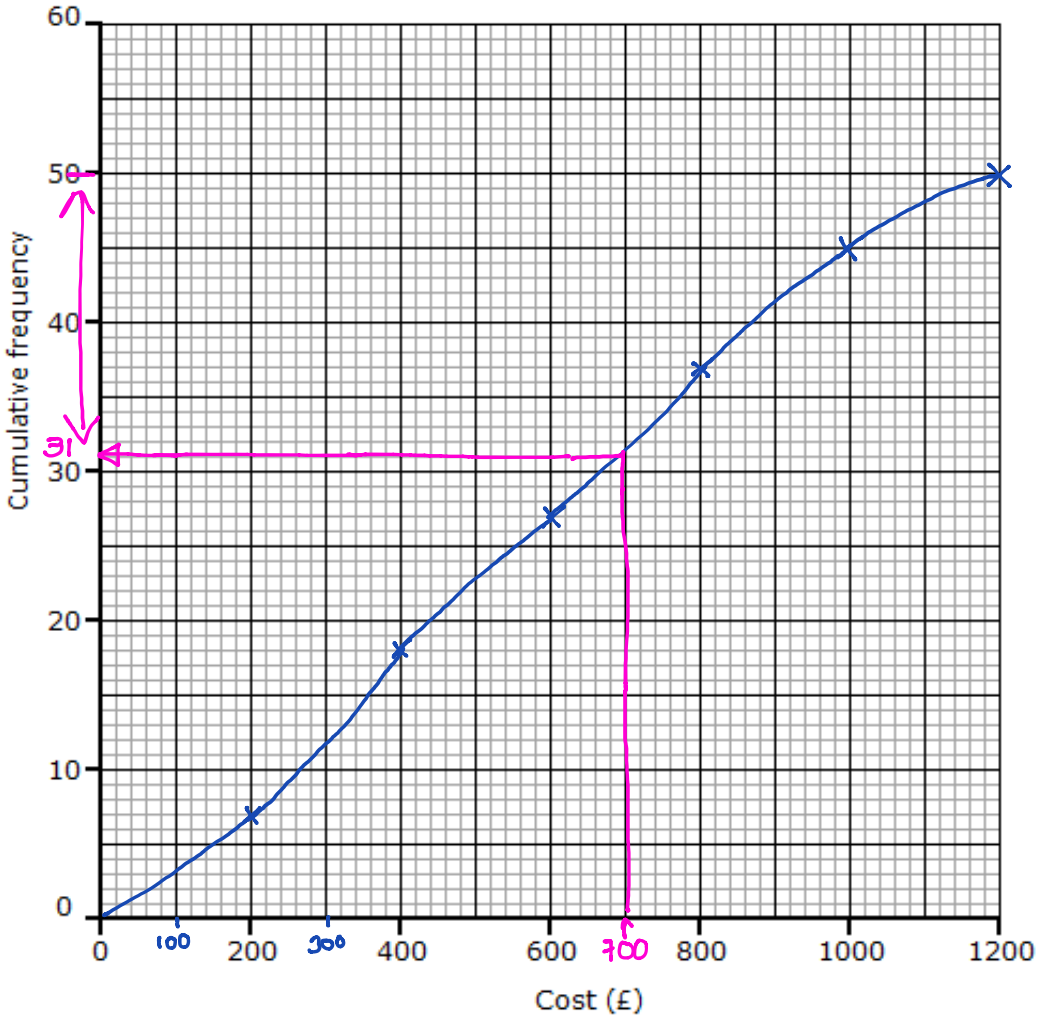
$200 < C \leq 400$ (1)

(b) Complete the cumulative frequency table.

Cost (£C)	Cumulative Frequency
$0 < C \leq 200$	7
$0 < C \leq 400$	18
$0 < C \leq 600$	27
$0 < C \leq 800$	37
$0 < C \leq 1000$	45
$0 < C \leq 1200$	50

(1)

(c) On the grid, draw a cumulative frequency diagram for your table.



(2)

(d) Use the graph to find an estimate for the number of repairs which cost more than £700.

The can vary slightly depending on your curve.

= 19

.....

(2)

JustMaths

A fisherman catches 50 fish. The table shows information about the lengths of the fish.

Length (l, inches)	Frequency	Cumulative frequency
$5 < l \leq 10$	6	6
$10 < l \leq 15$	20	26
$15 < l \leq 20$	13	39
$20 < l \leq 25$	8	47
$25 < l \leq 30$	3	50

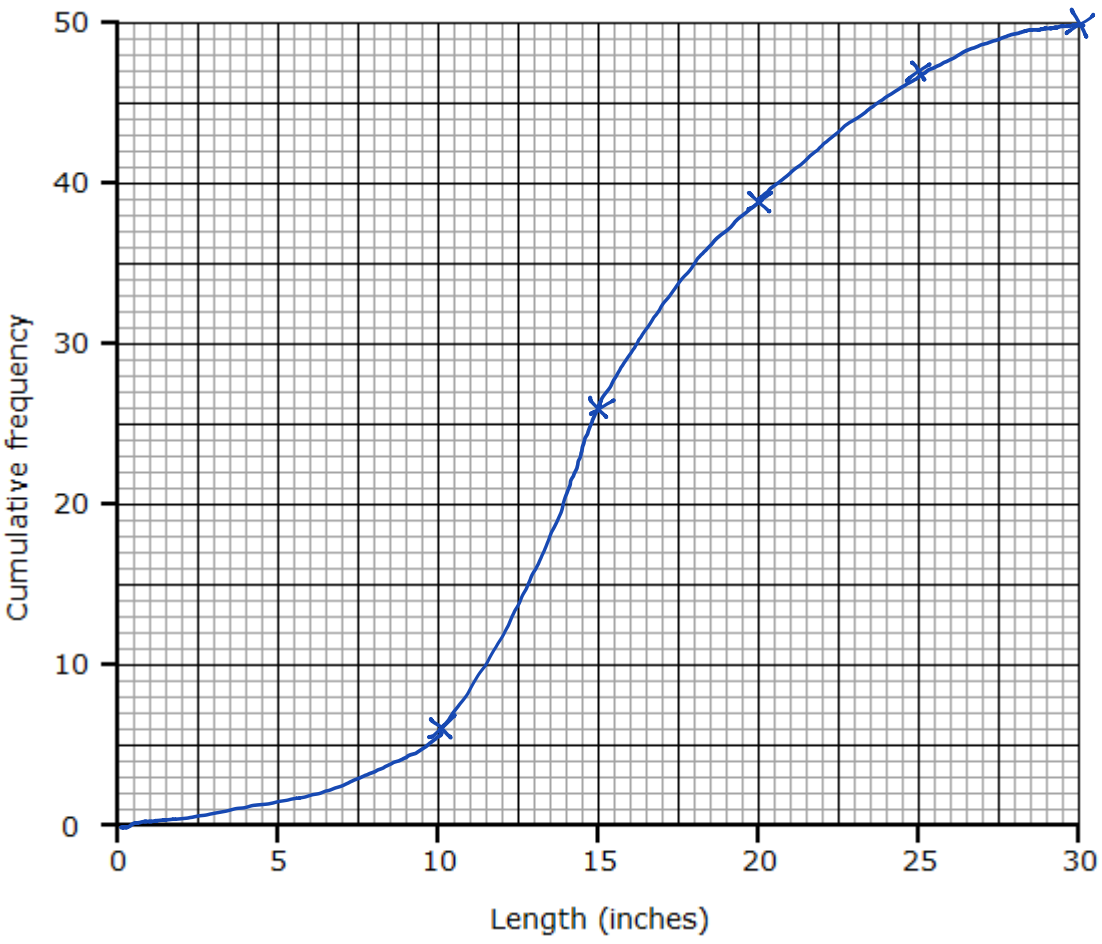
a) Complete the table.

(1)

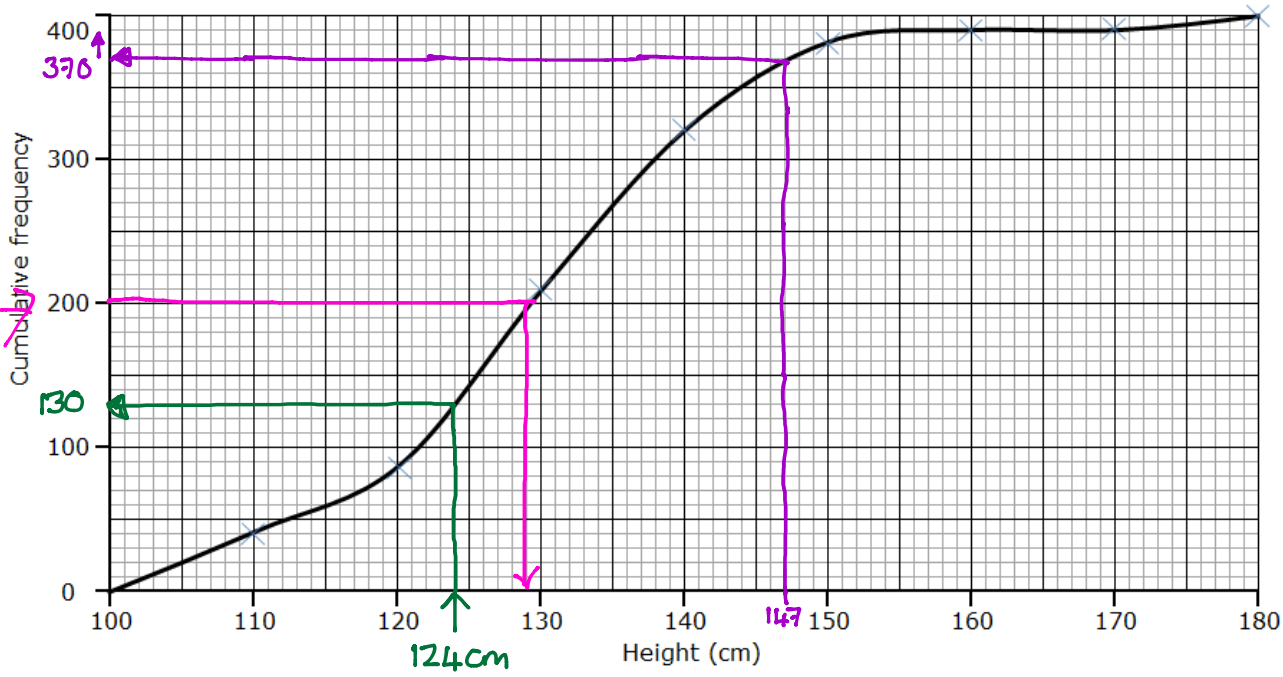
b) Draw a cumulative frequency diagram for the data.

Draw your curve "freehand"... its not joined up with straight lines.

(3)



The cumulative frequency diagram shows the distribution of heights, in cm, of 400 students in a school.



Use the diagram to find an estimate of

a) The median height.

400 students in total ⇒ 200th student = 129cm (1)

b) The number of students with height less than 124cm.

= 130 students (1)

c) The number of students with height more than 147cm.

= 30 students

(2)

JustMaths

The following table shows a grouped frequency distribution of the number of reward points collected by 60 different customers at a supermarket.

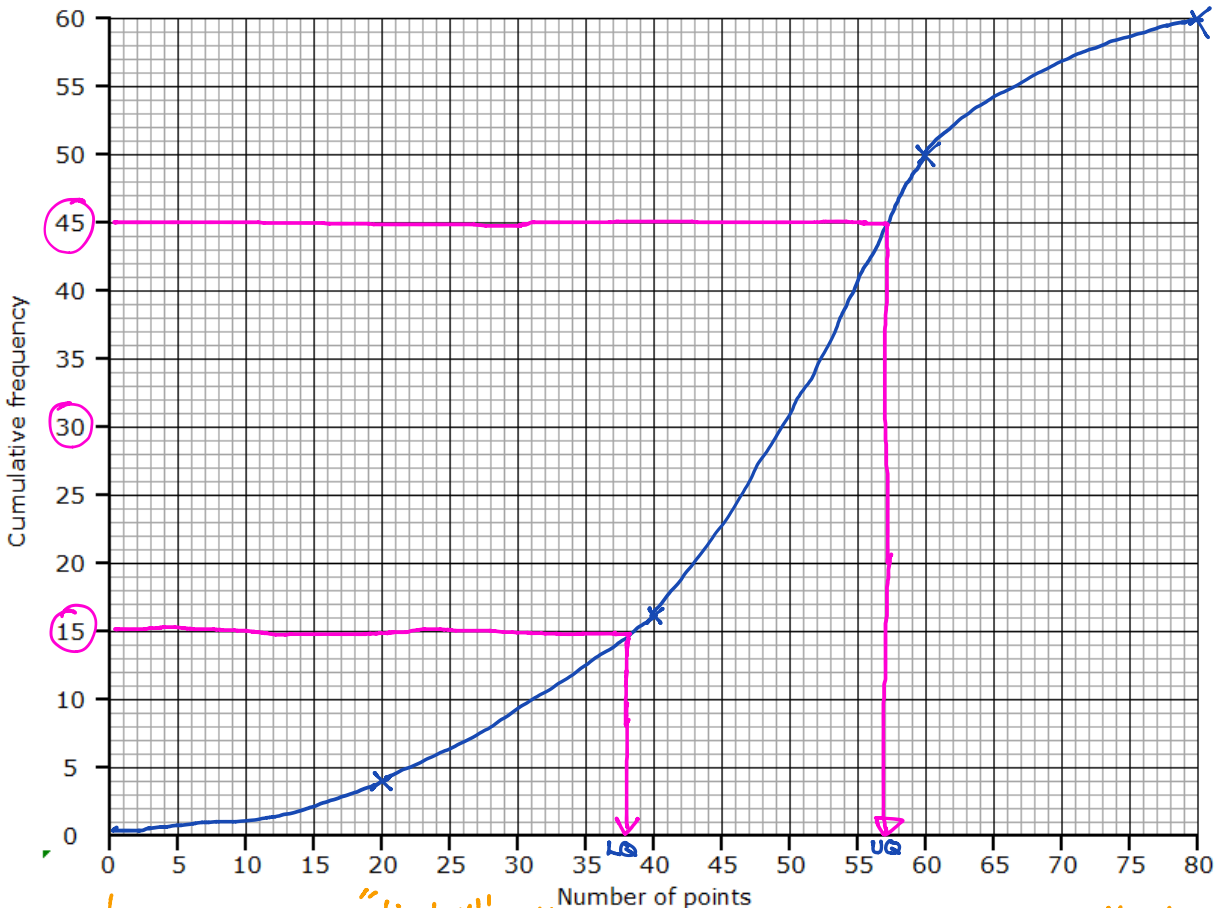
Number of points collected	1 - 20	21 - 40	41 - 60	61 - 80
Number of customers	4	12	34	10

a) Complete the following cumulative frequency table.

Number of points collected	≤20	≤40	≤60	≤80
Number of customers	4	16	50	60

(1)

b) Draw a cumulative frequency diagram to show this information. (3)



Your values may vary slightly... this will be because your curve is slightly different.

c) Calculate the interquartile range. (← IQR) (2)

LQ = 38 UQ = 57 so IQR = 57 - 38 = 19.