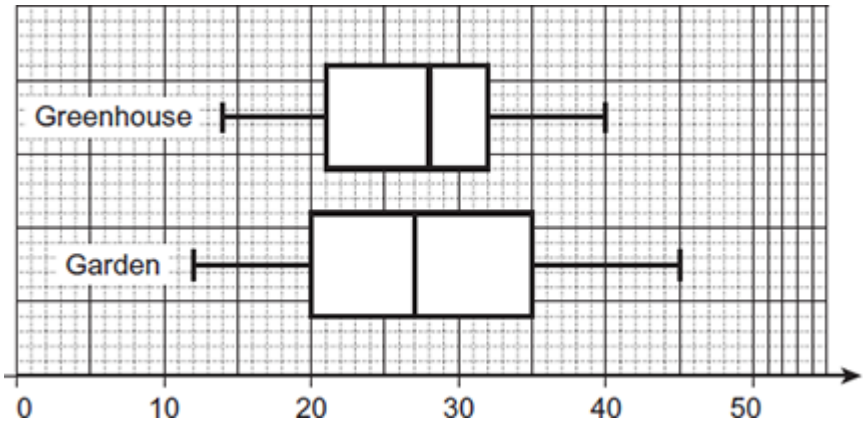
Non-Calculator

Q1.

Cucumbers are grown in a greenhouse or in a garden.
The box plots show data about their lengths, in centimetres.



Length (cm)

(a) Write down the median length of the cucumbers grown in the garden.

Answer _____ cm

(1)

(b) Give **two** comparisons between the lengths of cucumbers grown in the greenhouse and cucumbers grown in the garden.

Comparison 1 _____

_____

_____

Comparison 2 _____

_____

_____

(3)

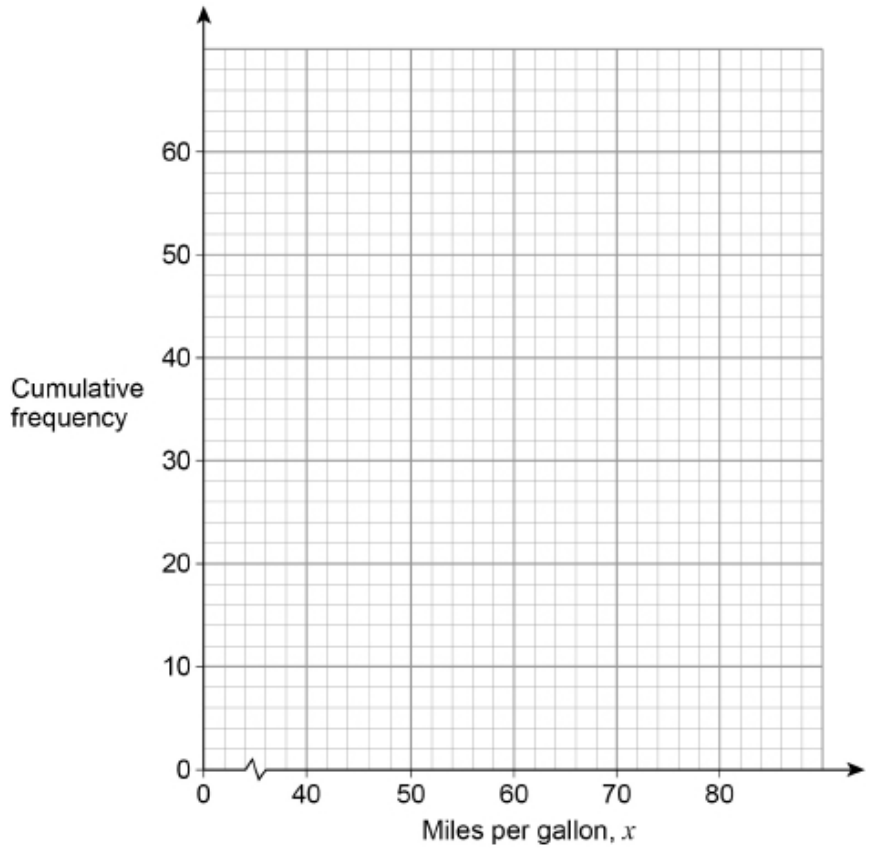
(Total 4 marks)

Q2.

Here is some information about the miles per gallon of 60 cars.

Miles per gallon, x	Frequency
$40 < x \leq 50$	6
$50 < x \leq 60$	16
$60 < x \leq 70$	28
$70 < x \leq 80$	10

(a) Draw a cumulative frequency graph.



(3)

(b) Use the graph to work out the interquartile range.

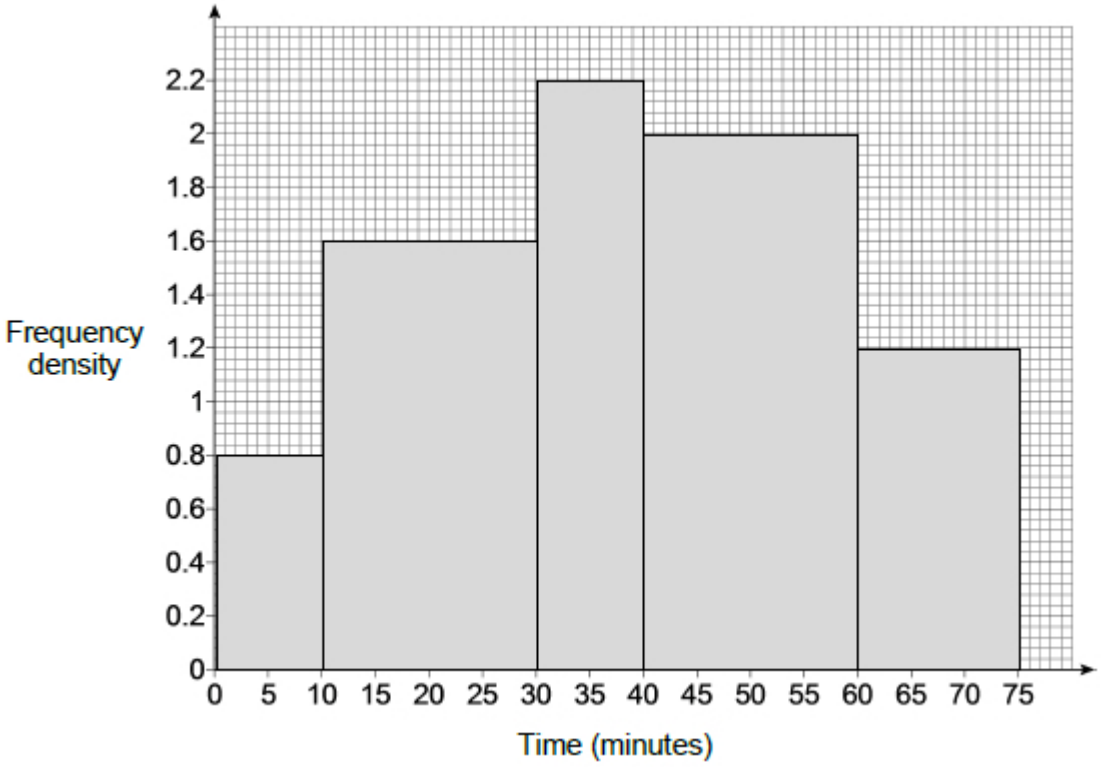
Answer _____ miles per gallon

(2)

(Total 5 marks)

Q3.

The histogram shows information about the times some students revised for a test.
The first bar represents students who revised for less than 10 minutes.



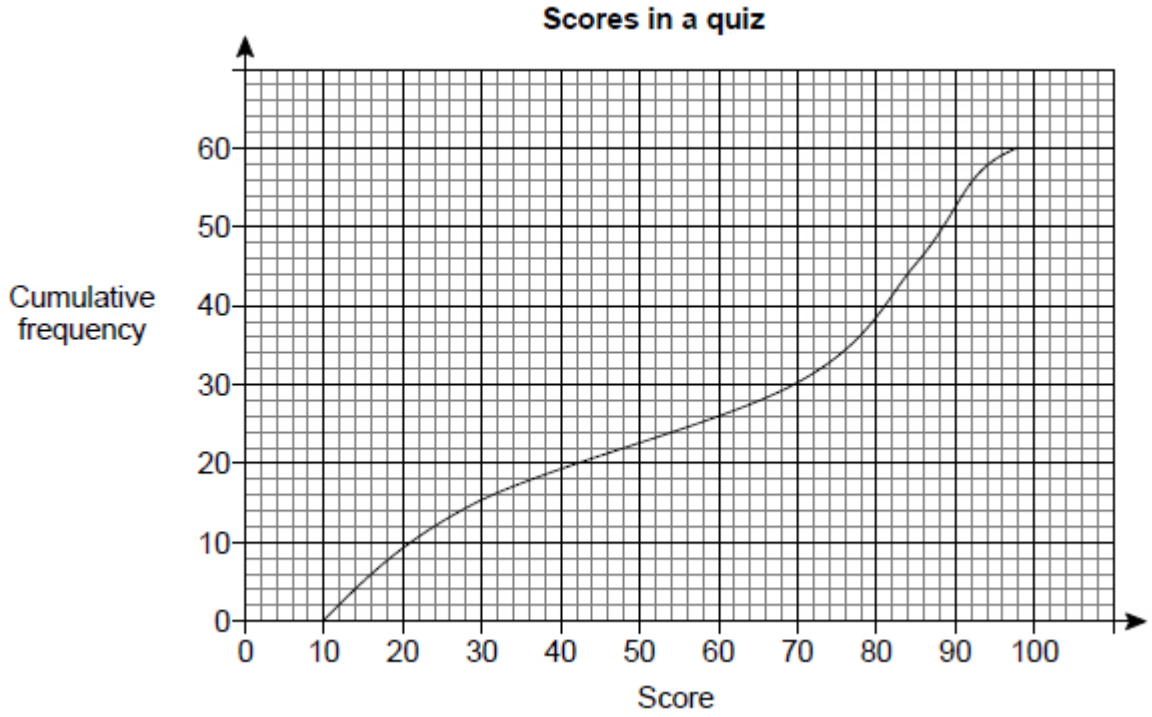
Estimate the number of students who revised for less than 45 minutes.

Answer _____

(Total 3 marks)

Q4.

60 people take part in a quiz.
The graph summarises their scores.



(a) Estimate what fraction of the 60 people scored **more** than 30

Answer _____

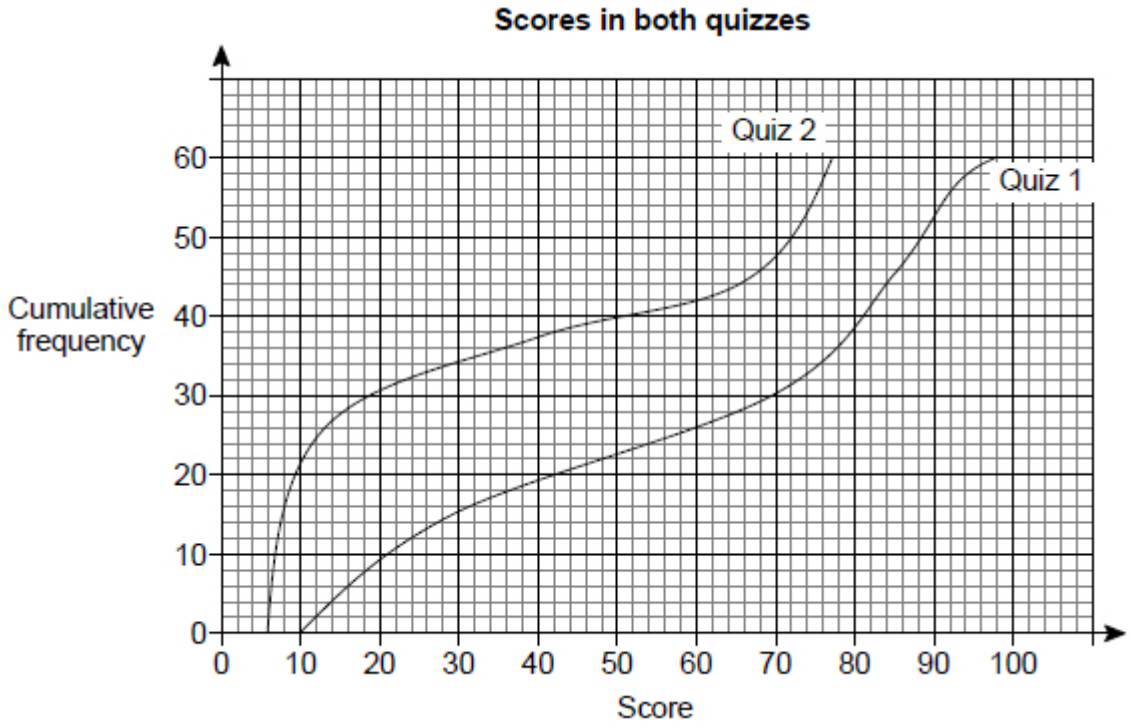
(2)

(b) Estimate the median score.

Answer _____

(1)

(c) The same people take part in a second quiz.
The graph summarises their scores for both quizzes.



Jack states,

"This quiz was easier than the first quiz because the graph is higher."

Does the graph support his statement?
Give a reason for your answer.

yes ☐ no ☐

_____

_____

_____

(2)

(Total 5 marks)

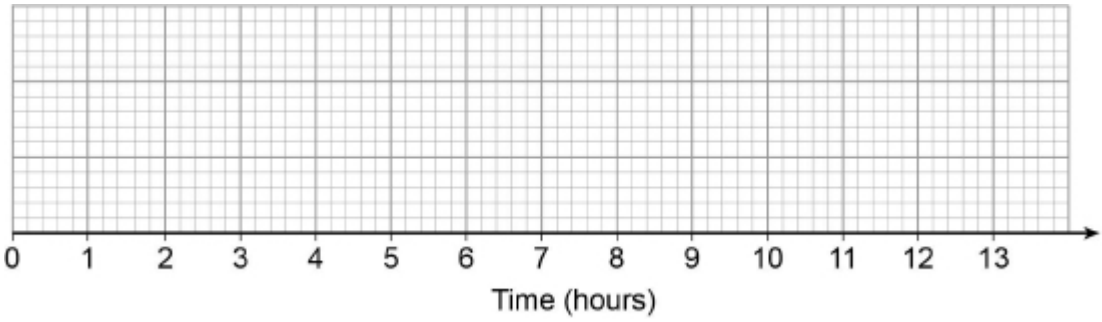
Calculator

Q5.

Here is some information about the length of time cars stayed in a car park.

Shortest time	30 minutes	Lower quartile	2 hours
Longest time	12 hours	Interquartile range	3 hours
		Median time	4 hours

Draw a box plot to show this information.



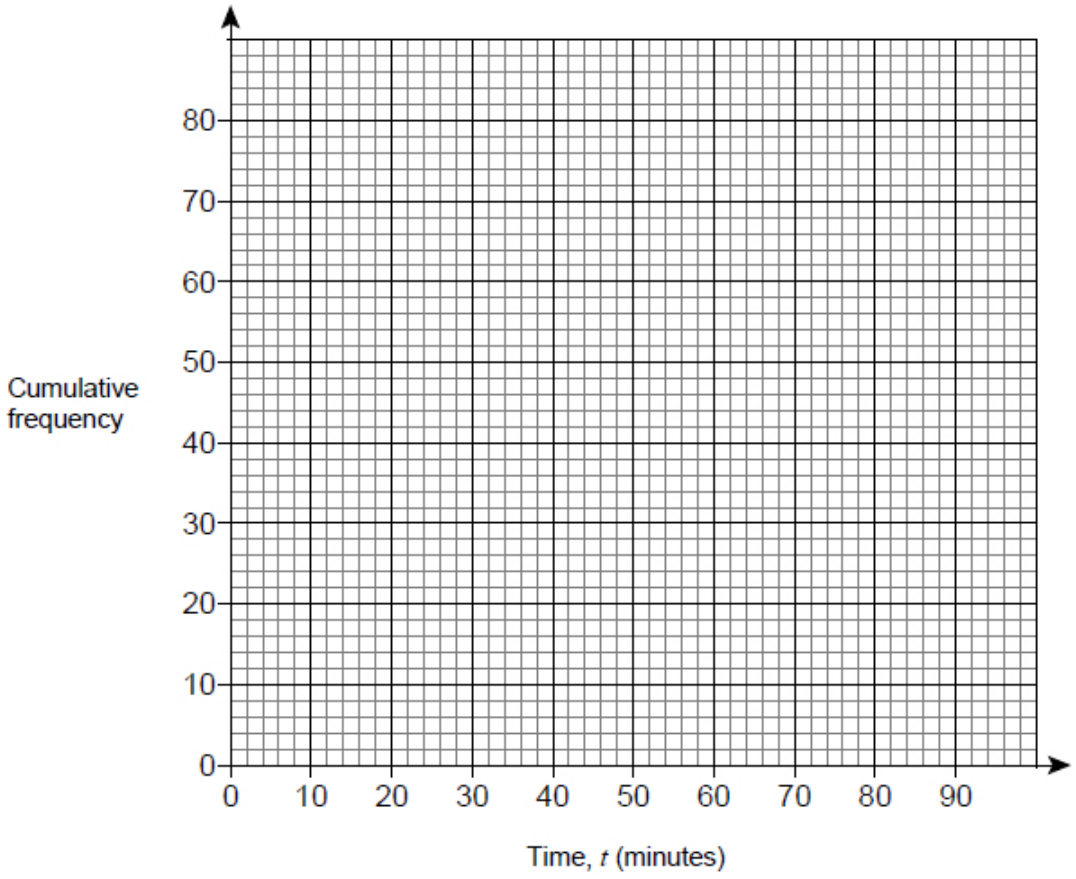
(Total 3 marks)

Q6.

Here is some information about the times, in minutes, 80 teachers took to get to work.

Time t (minutes)	Frequency
$0 < t \leq 20$	12
$20 < t \leq 40$	32
$40 < t \leq 60$	25
$60 < t \leq 90$	11

(a) On the grid, draw a cumulative frequency graph.



(3)

(b) Estimate the number of teachers who took between 50 minutes and 70 minutes to travel to work.

Answer _____

(2)

(Total 5 marks)

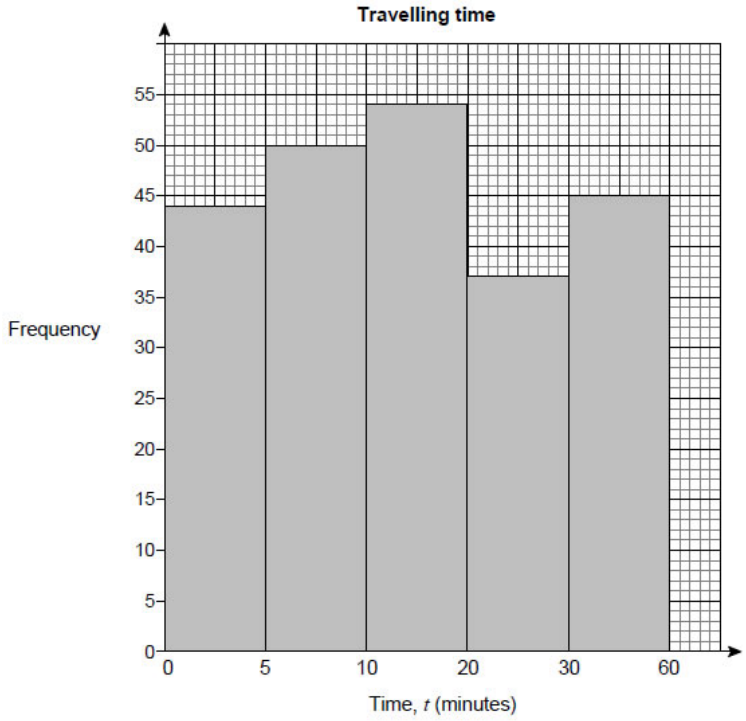
Q7.

Joe asked 230 students how long it took them to travel to school.

The results are shown in the table.

Travelling time, t (minutes)	Number of students
$0 < t \leq 5$	44
$5 < t \leq 10$	50
$10 < t \leq 20$	54
$20 < t \leq 30$	37
$30 < t \leq 60$	45

This is Joe's attempt to draw a histogram to show the data.



Make **two** criticisms of his histogram.

Criticism 1 _____

_____

_____

Criticism 2 _____

_____

_____

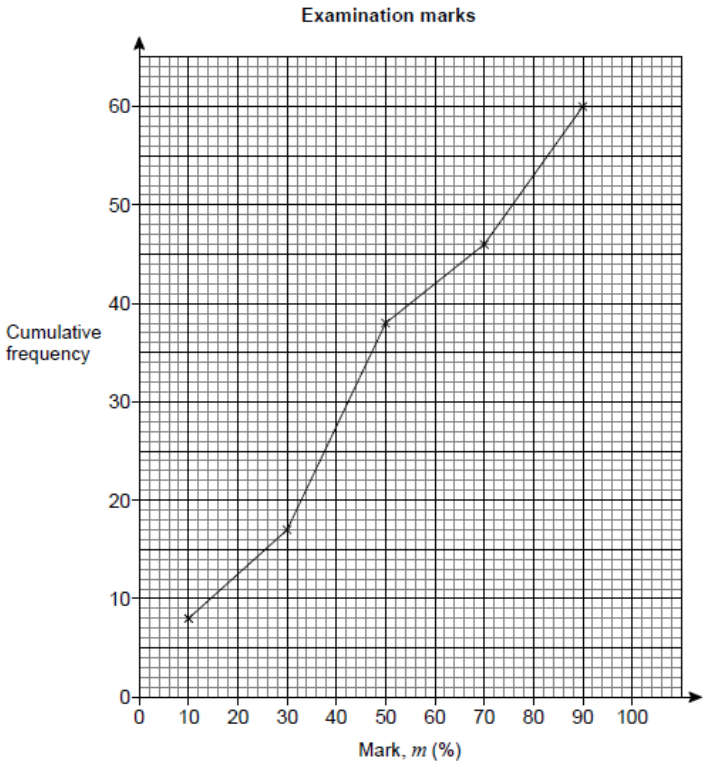
(Total 2 marks)

Q8.

Here are the examination marks for 60 pupils.

mark, m (%)	Frequency
$0 \leq m < 20$	8
$20 \leq m < 40$	9
$40 \leq m < 60$	21
$60 \leq m < 60$	10
$80 \leq m < 100$	12

Molly drew this cumulative frequency graph to show the data.



Make **two** criticisms of Molly's graph.

Criticism 1 _____

_____

_____

Criticism 2 _____

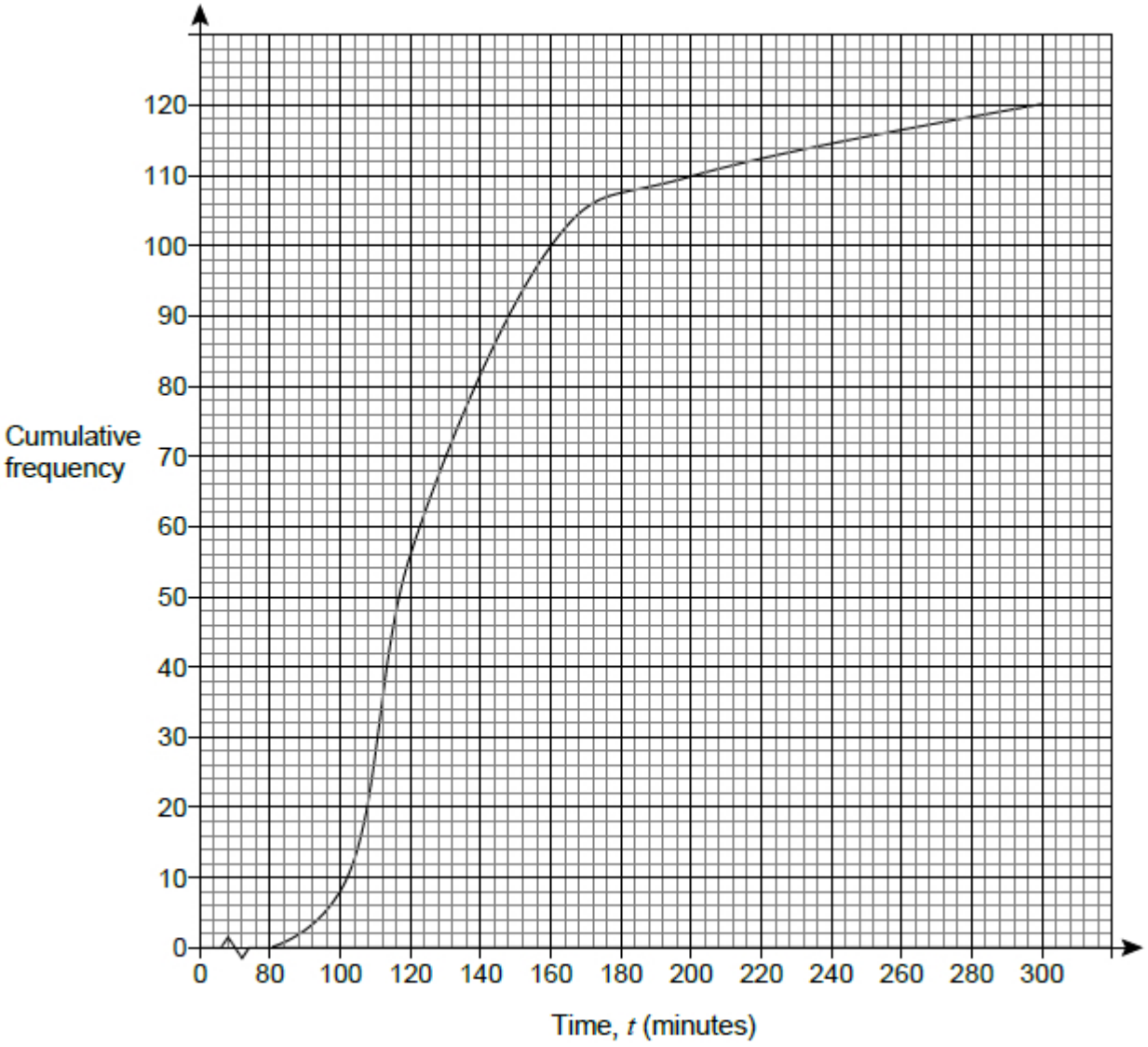
_____

_____

(Total 2 marks)

Q9.

The cumulative frequency diagram shows the times taken by runners to complete a half-marathon.

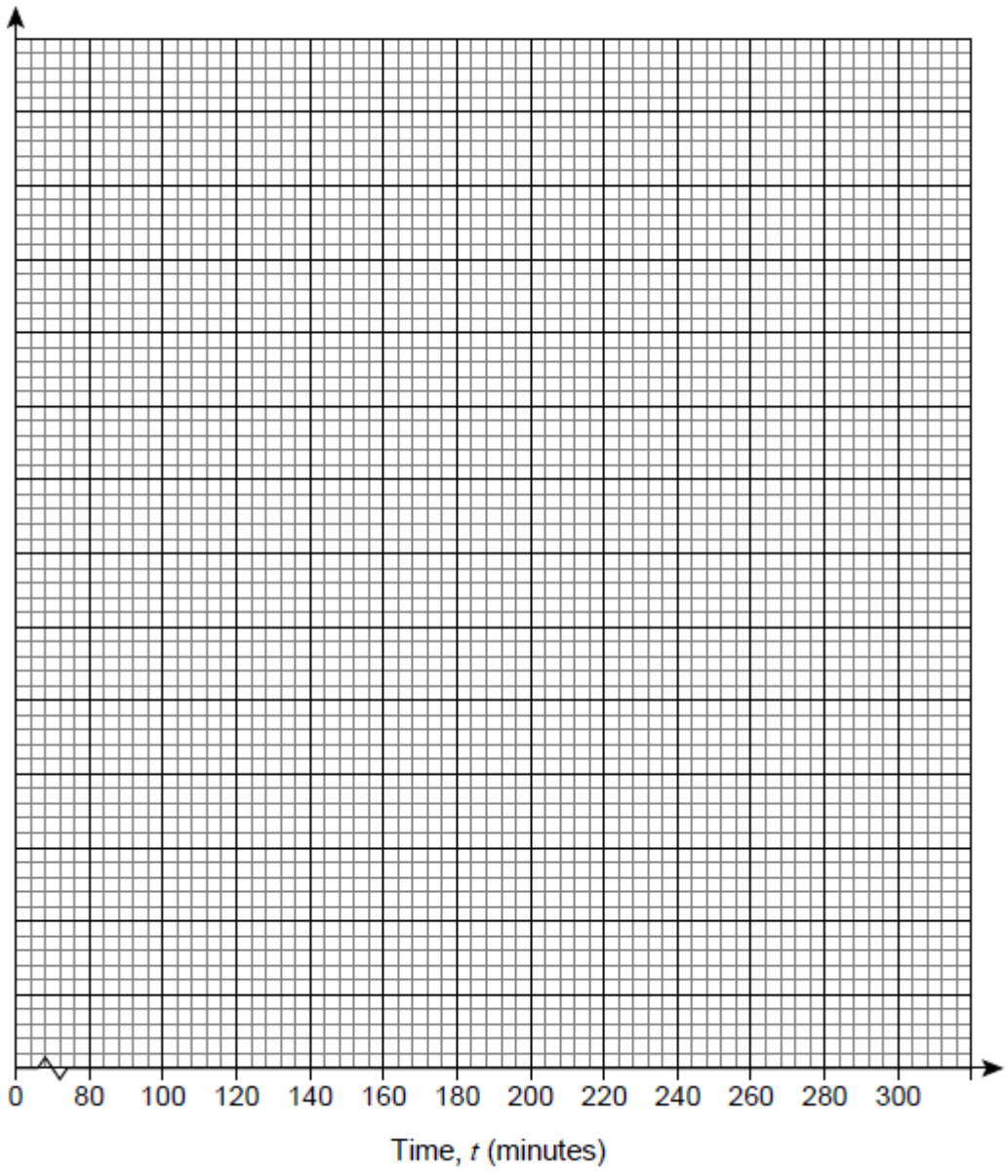


On the grid, draw a histogram to represent the data.

Use this table to help you.

Time, *t* (minutes)	Cumulative frequency
$t < 100$	
$t < 120$	
$t < 160$	
$t < 200$	
$t < 300$	

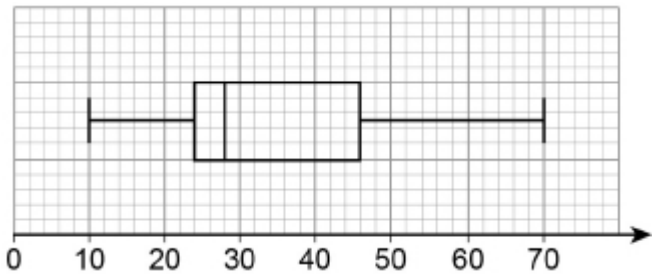
Time, *t* (minutes)	Frequency	Class width	Frequency density
$80 \leq t < 100$			
$100 \leq t < 120$			
$120 \leq t < 160$			
$160 \leq t < 200$			
$200 \leq t < 300$			



(Total 6 marks)

Q10.

Here is a box plot.



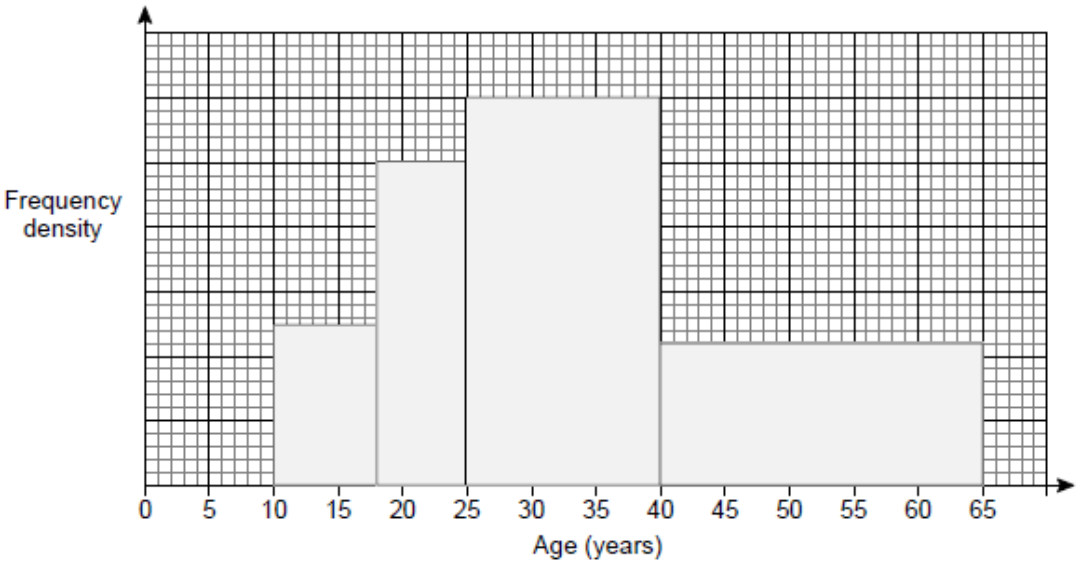
Circle the median value.

28 35 24 22

(Total 1 marks)

Q11.

The histogram shows the ages, in years, of members of a chess club.



There are 22 members with ages in the range 40 ≤ age < 65

Work out the number of members with ages in the range 25 ≤ age < 40

Answer _____

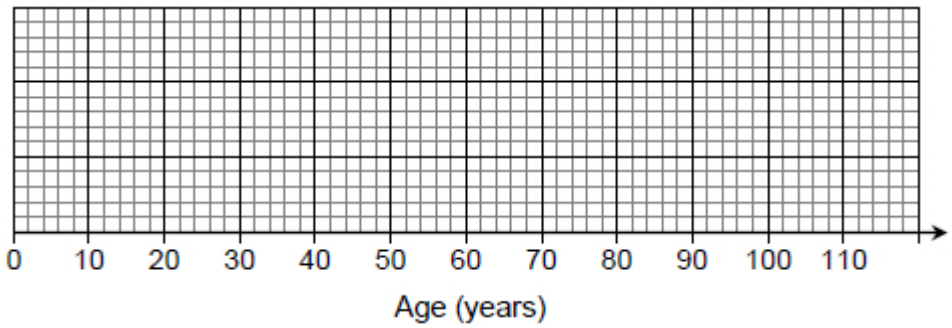
(Total 4 marks)

Q12.

In the UK in 2000

25% of the population were under 24 years old
50% of the population were under 37 years old
the inter-quartile range of the ages was 32 years
the oldest person was 107 years old.

(a) Show the information on a box plot.



(3)

(b) It is predicted that in 2050 the age distribution in the UK will have
lower quartile 26 years
median 44 years
upper quartile 66 years

Make **two** comments about the predicted change in the age distribution in the UK from 2000 to 2050

Comment 1 _____

_____

_____

Comment 2 _____

_____

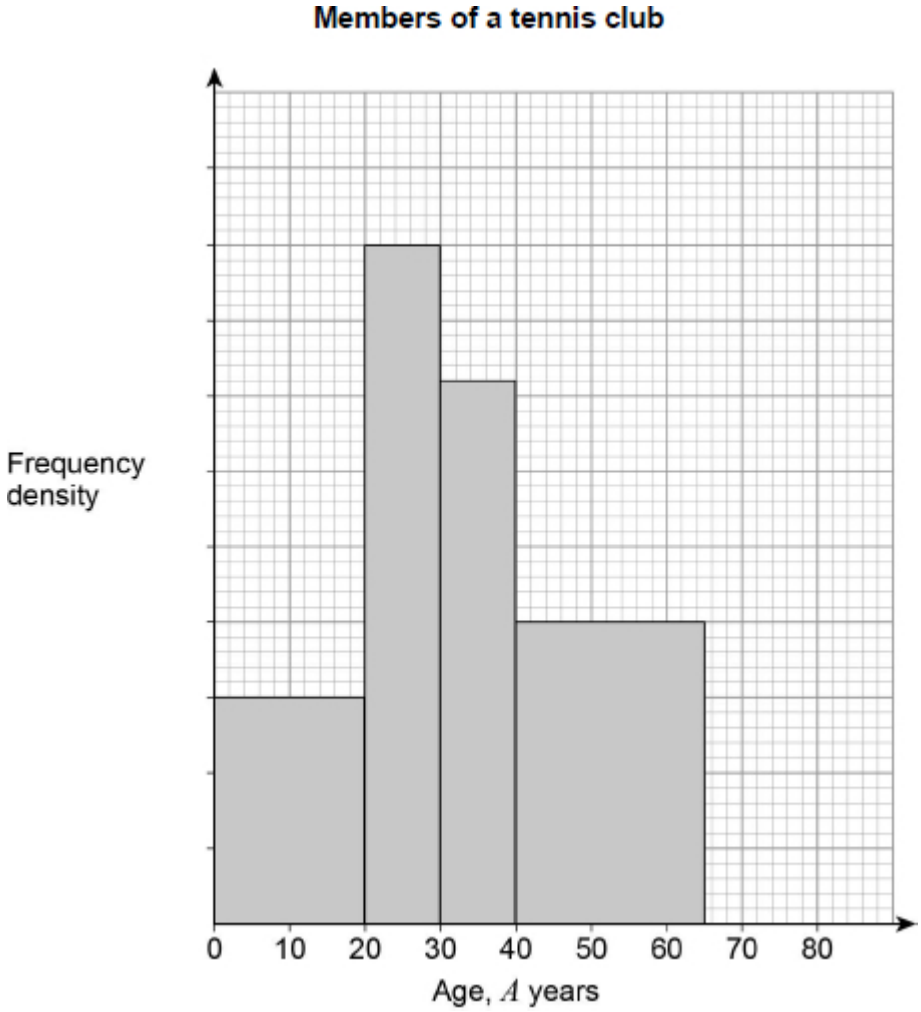
_____

(2)

(Total 5 marks)

Q13.

Here is some information about a tennis club.



There are 30 members with $A < 20$

There are 12 members with $65 \leq A < 20$

There are no members with $A \geq 80$

(a) Complete the histogram.

(3)

(b) Work out the total number of members of the club.

_____

_____

_____

_____

_____

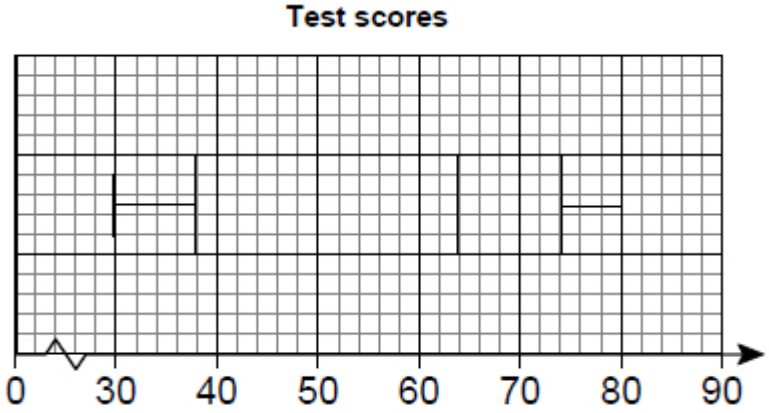
Answer _____

(2)

(Total 5 marks)

Q14.

Here is a box plot.



(a) Circle the value of the range.

33 36 50 80

(1)

(b) Circle the value of the median.

38 55 62 64

(1)

(c) Circle the value of the interquartile range.

34 36 38 50 62

(1)

(Total 3 marks)

Q15.

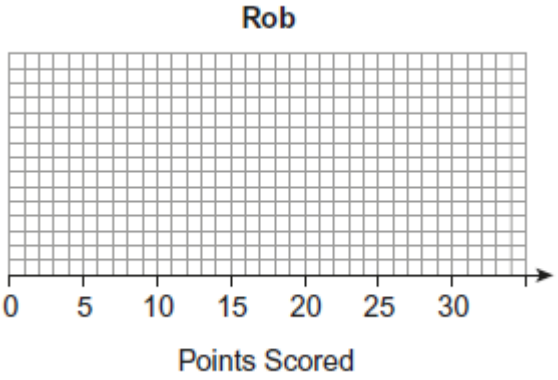
Rob played in 15 basketball matches.

The stem-and-leaf diagram shows the number of points he scored in each match.

Key: 0 | 5 represents 5 points

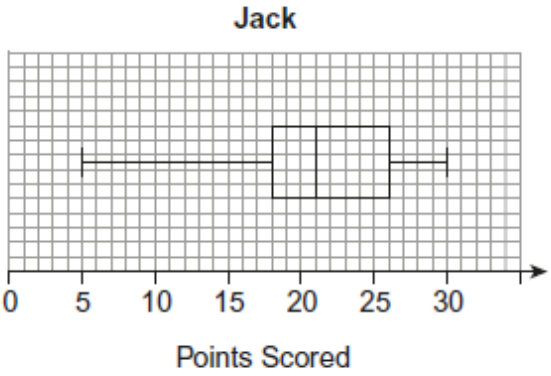
0	5						
1	2	2	4	5	6	7	8
2	2	2	3	6	6	9	
3	0						

(a) Draw a box plot to represent the data.



(4)

(b) This box plot represents the points that Jack scored in 15 basketball matches.



Jack says,

"I am better at basketball than Rob."

Give **two** reasons that support his statement.

Reason 1 _____

_____

Reason 2 _____

_____

(2)

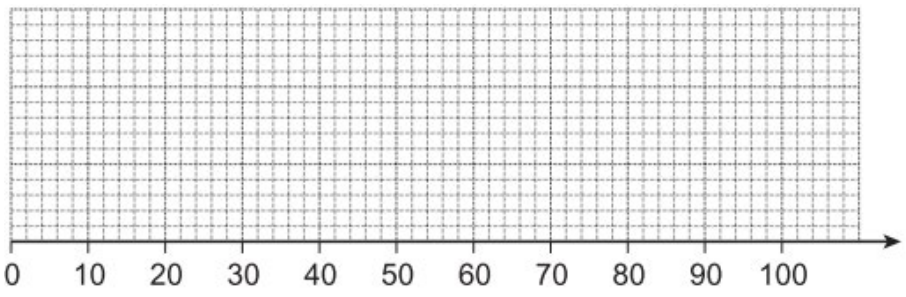
(Total 6 marks)

Q16.

(a) Here is some information about the points scored in a quiz.

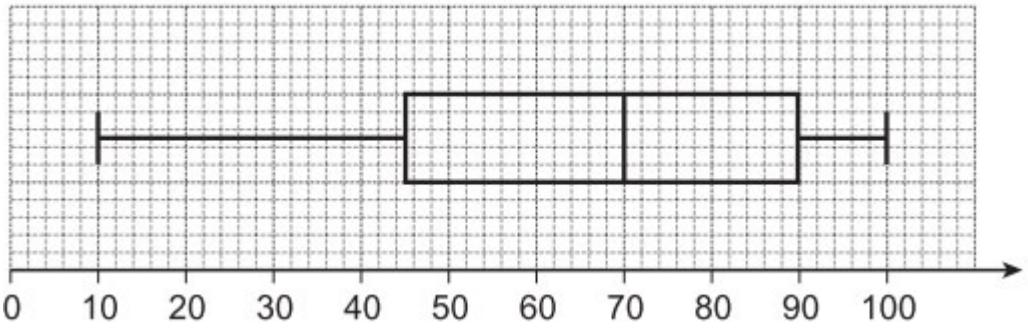
Minimum	Lower quartile	Median	Upper quartile	Maximum
15	20	50	80	90

Show this information on a box plot.



(2)

(b) This box plot represents the marks gained by students in an exam.



Marks

Nobody gained exactly 45, 70 or 90 marks.
120 students gained **less than** 90 marks.

How many students gained **more than** 70 marks?

Answer _____

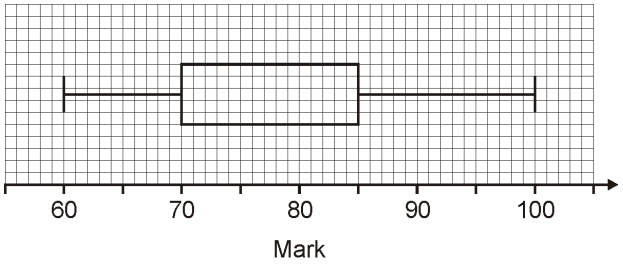
(3)

(Total 5 marks)

Q17.

The box plot shows information about the marks of a Y11 class in a test.

Y11

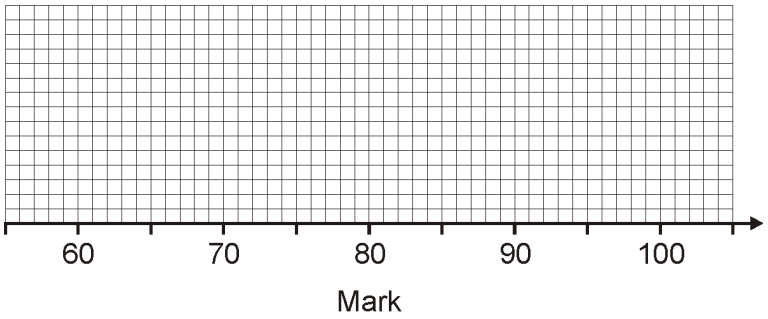


(a) The table shows information about the marks of the **boys** in the class.

Minimum	Lower quartile	Median	Upper quartile	Maximum
65	70	80	85	95

Draw a box plot for the marks of the **boys**.

Boys

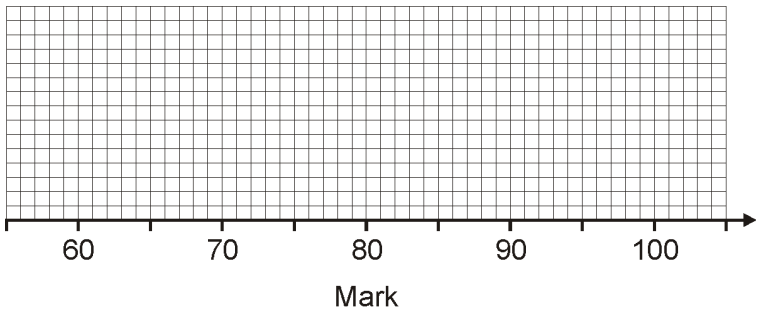


(2)

(b) One-quarter of the girls in the class scored 75 or less.
The inter-quartile range for the girls is the same as for the boys.

Draw a box plot for the marks of the girls.

Girls

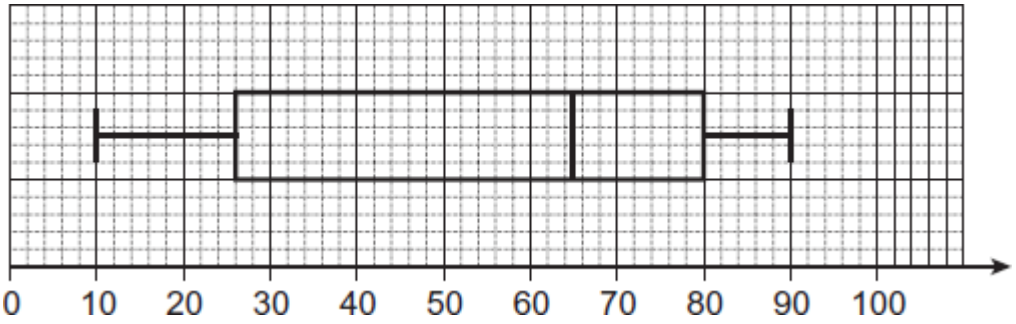


(4)

(Total 6 marks)

Q18.

The diagram shows a box plot.



(a) Write down the median.

Answer _____

(1)

(b) Work out the interquartile range.

_____

_____

Answer _____

(1)

(Total 2 marks)