Name: _____

GCSE Unit 14 Practice Assessment

Date:

Time: 55 minutes

Total marks available: 51

Total marks achieved: _____

Questions

Q1.

***** Mr and Mrs Jennings are planning a holiday to Italy.

They will go on holiday with their 11 year old daughter.

The table below shows some information about the prices of flights.

Flight to Italy	%%%		**Flight to Italy**
Date	**Price per adult (£)**	**Date**	**Price per adult (£)**
28th October	282	4th November	305
29th October	283	5th November	303
30th October	282	6th November	285
31st October	272	7th November	283
Child fares 0 to 2 years old No charge Over 2 to 12 years old 75% of the adult fare			

Mr and Mrs Jennings and their daughter want to fly to Italy on 29th October.
They want to fly back from Italy on 6th November.

They have £1600 to spend on flights.
Do they have enough money for the flights?

You must show all your working.

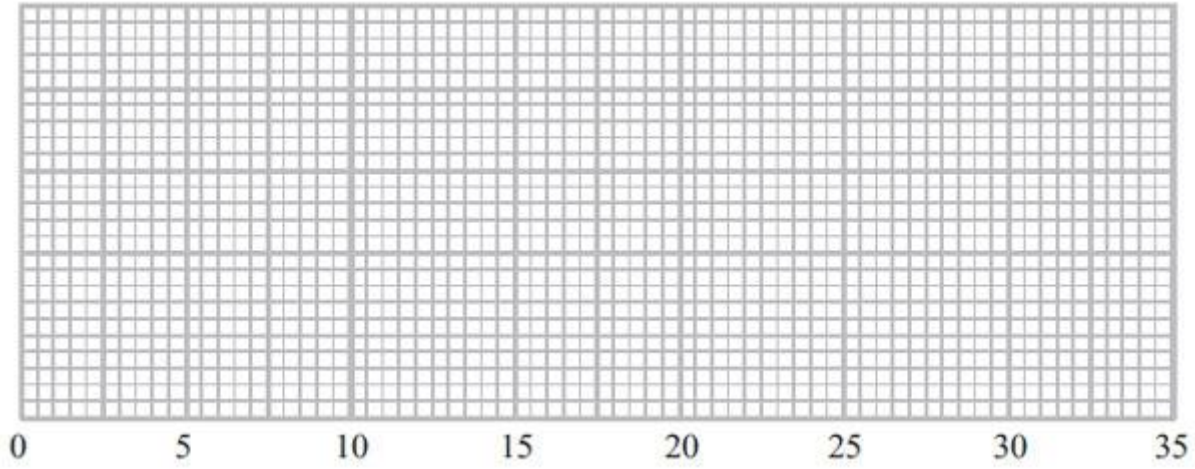
(Total for Question is 6 marks)

Q2.

The table below shows information about the times, in minutes, a group of students took to answer 10 maths questions.

	Least	**Lower quartile**	**Median**	**Upper quartile**	**Greatest**
Time in minutes	14	18	20	25	30

On the grid below, draw a box plot to show the information in the table.



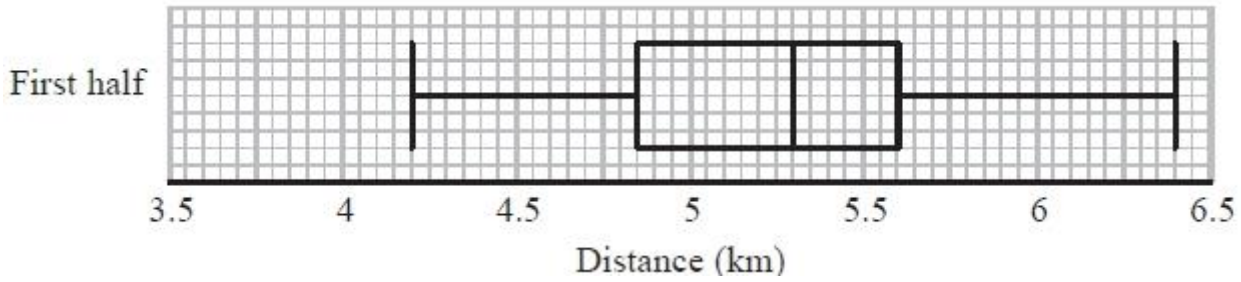
(Total for Question is 3 marks)

Q3.

Colin took a sample of 80 football players.

He recorded the total distance, in kilometres, each player ran in the first half of their matches on Saturday.

Colin drew this box plot for his results.



(a) Work out the interquartile range.

.....km

(2)

There were 80 players in Colin's sample.

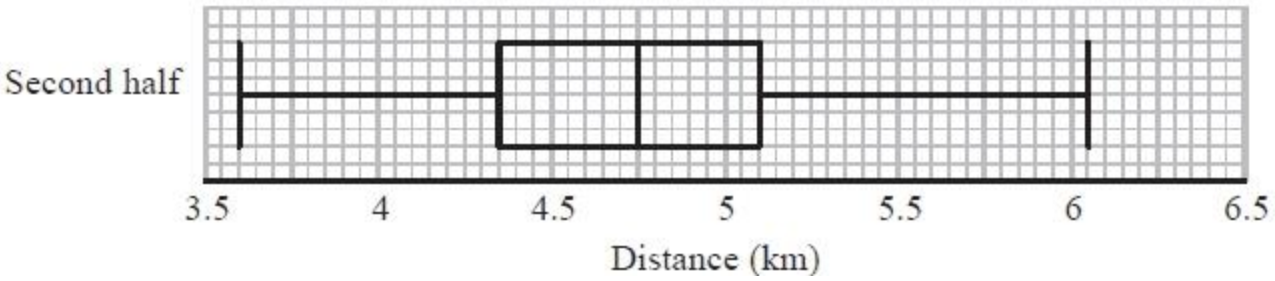
(b) Work out the number of players who ran a distance of more than 5.6 km.

.....

(2)

Colin also recorded the total distance each player ran in the second half of their matches.

He drew the box plot below for this information.



(c) Compare the distribution of the distances run in the first half with the distribution of the distances run in the second half.

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(2)

(Total for Question is 6 marks)

Q4.

* Toga wants to estimate the number of termites in a nest.

On Monday Toga catches 80 termites.
He puts a mark on each termite.
He then puts all 80 termites back in the nest.

On Tuesday Toga catches 60 termites.
12 of these termites have a mark on them.

Work out an estimate for the total number of termites in the nest.
You must write down any assumptions you have made.

.....

(Total for question = 4 marks)

Q5.

* A farmer wants to estimate the number of rabbits on his farm.

On Monday he catches 120 rabbits.
He puts a tag on each rabbit.
He then lets the rabbits run away.

On Tuesday the farmer catches 70 rabbits.
15 of these rabbits have a tag on them.

Work out an estimate for the total number of rabbits on the farm.
You must write down any assumptions you have made.

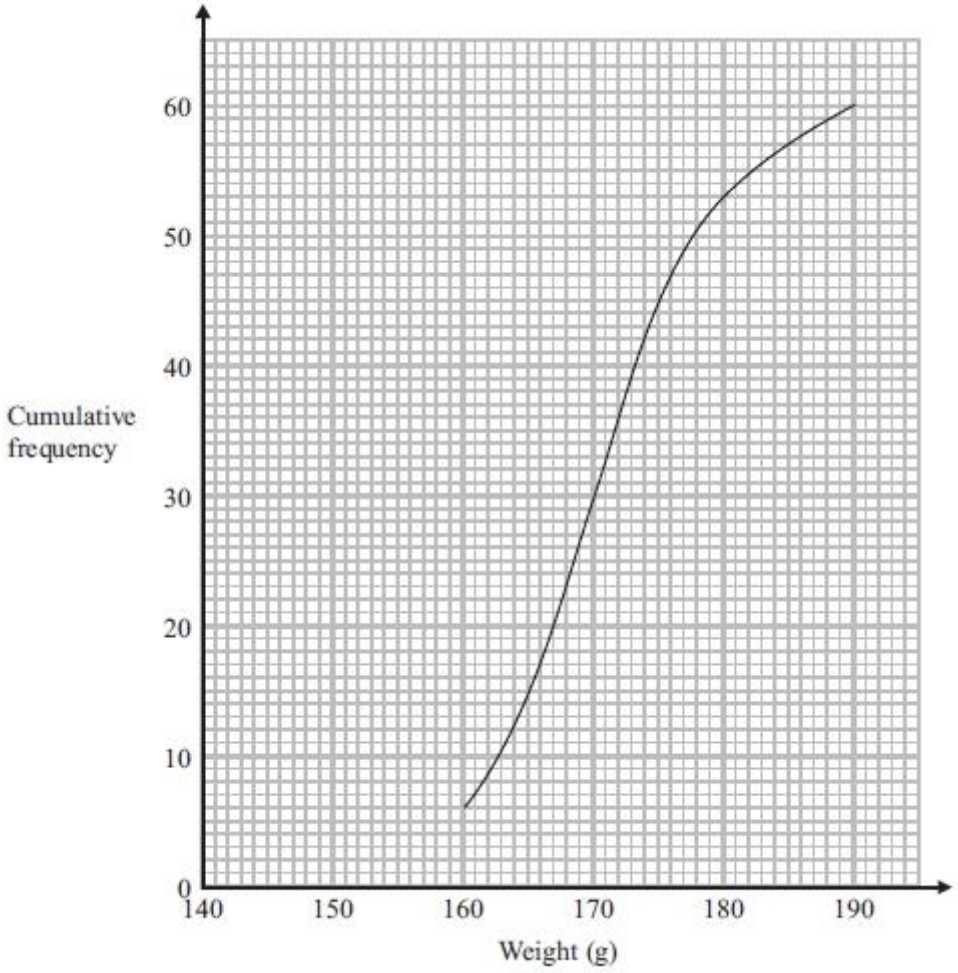
(Total for Question is 4 marks)

Q6.

Harry grows tomatoes.
This year he put his tomato plants into two groups, group A and group B.

Harry gave fertiliser to the tomato plants in group A.
He did not give fertiliser to the tomato plants in group B.

Harry weighed 60 tomatoes from group A.
The cumulative frequency graph shows some information about these weights.



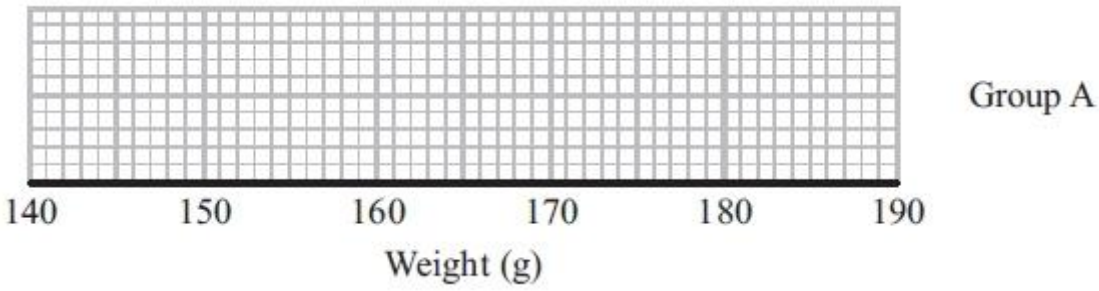
(a) Use the graph to find an estimate for the median weight.

. . . . . g

(1)

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

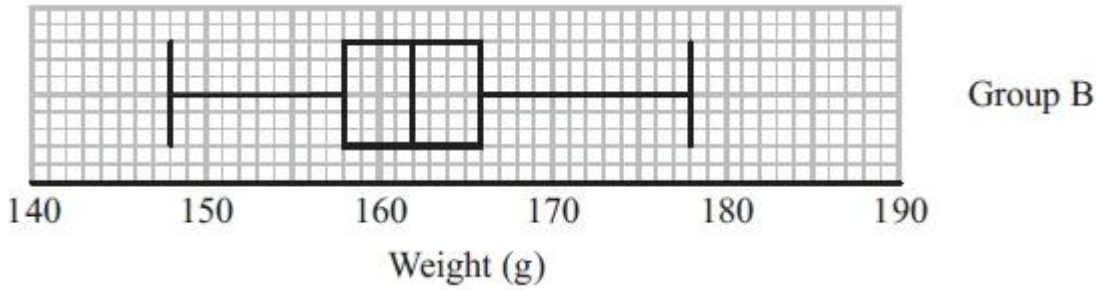
(b) Use this information and the cumulative frequency graph to draw a box plot for the 60 tomatoes from group A.



(3)

Harry did not give fertiliser to the tomato plants in group B.

Harry weighed 60 tomatoes from group B.
He drew this box plot for his results.



(c) Compare the distribution of the weights of the tomatoes from group A with the distribution of the weights of the tomatoes from group B.

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.....

.....

(2)

(Total for Question is 6 marks)

Q7.

The table shows some information about the times, in minutes, 60 people took to get to work.

Time (x minutes)	Frequency		
$0 < x \leqslant 10$	5		
$10 < x \leqslant 30$	11		
$30 < x \leqslant 50$	23		
$50 < x \leqslant 80$	13		
$80 < x \leqslant 100$	8		

(a) Calculate an estimate for the mean.

.....minutes

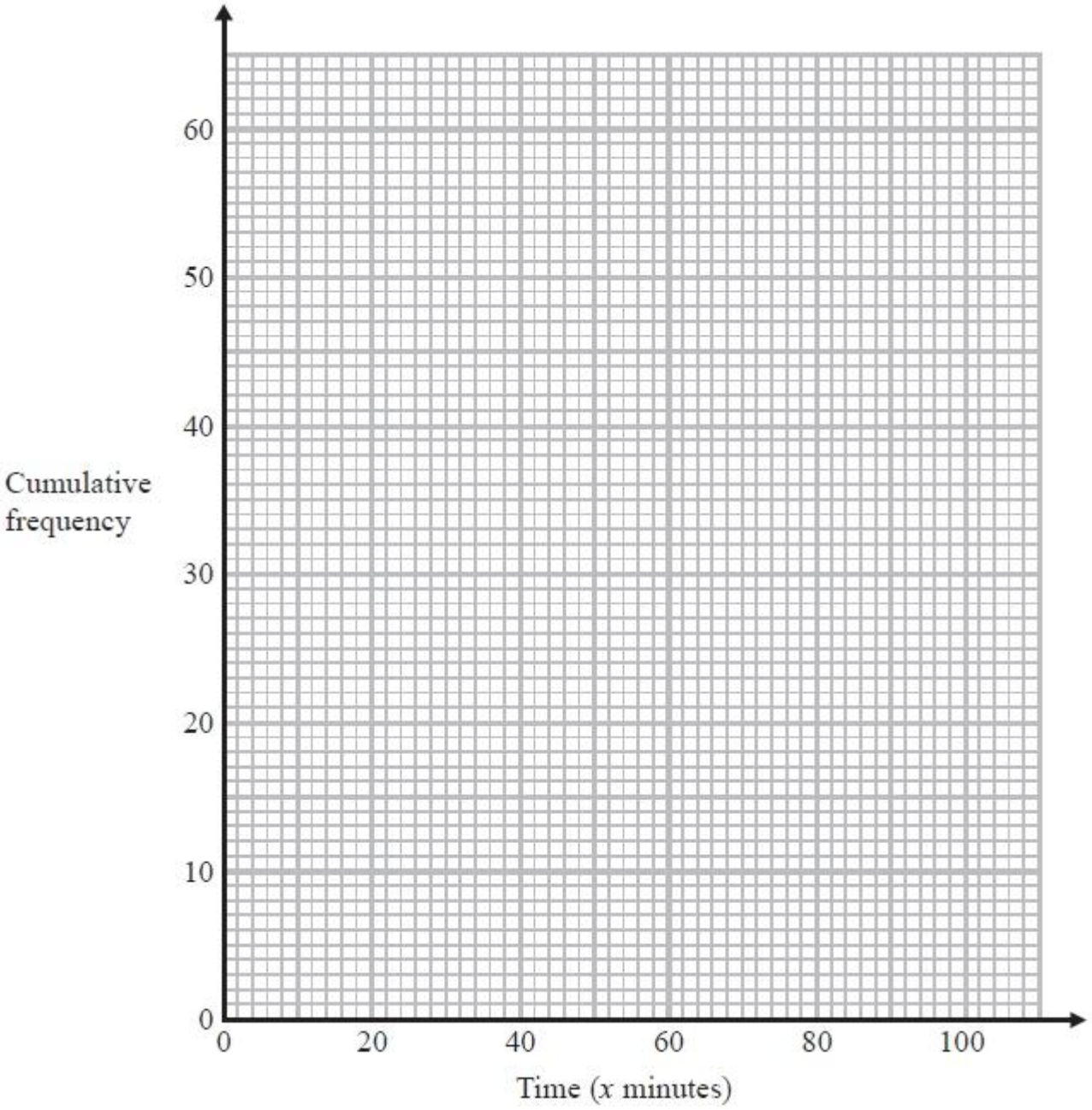
(4)

(b) Complete the cumulative frequency table.

Time (x minutes)	Cumulative frequency
$0 < x \leqslant 10$	
$0 < x \leqslant 30$	
$0 < x \leqslant 50$	
$0 < x \leqslant 80$	
$0 < x \leqslant 100$	

(1)

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



(2)

(d) Find an estimate for the number of people who took **more** than 1 hour to travel to work.

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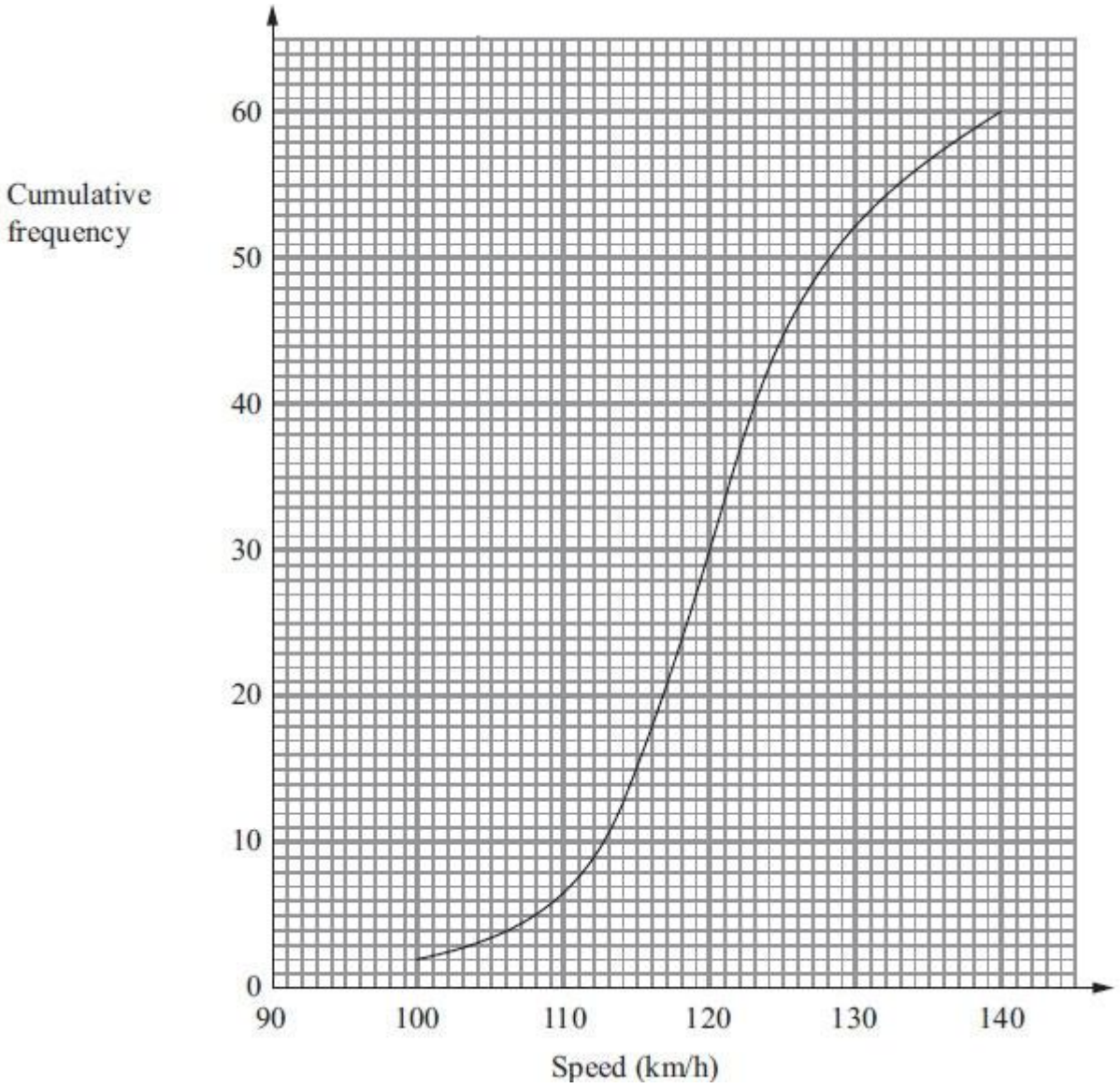
(2)

(Total for Question is 9 marks)

Q8.

The cumulative frequency graph shows information about the speeds of 60 cars on a motorway one Sunday morning.



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

. . . . . km/h

(1)

The speed limit on this motorway is 130 km/h.
The traffic police say that more than 20% of cars travelling on the motorway break the speed limit.

(b) Comment on what the traffic police say.

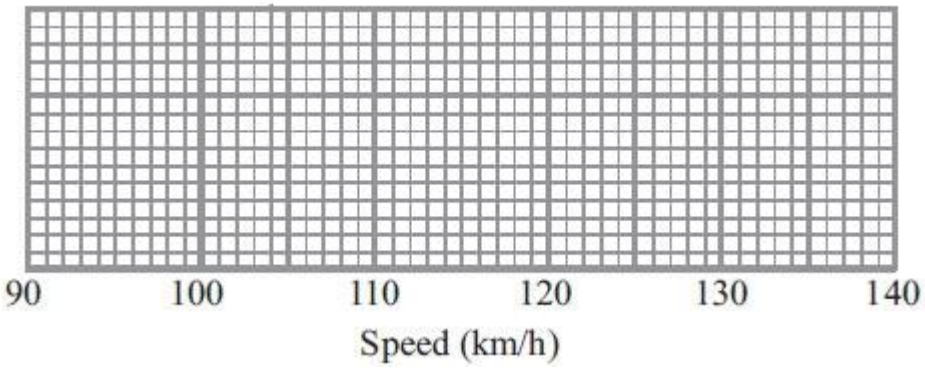
(3)

For these 60 cars

the minimum speed was 97 km/h
and the maximum speed was 138 km/h.

(c) Use the cumulative frequency graph and the information above to draw a box plot showing information about the speeds of the cars.

(3)



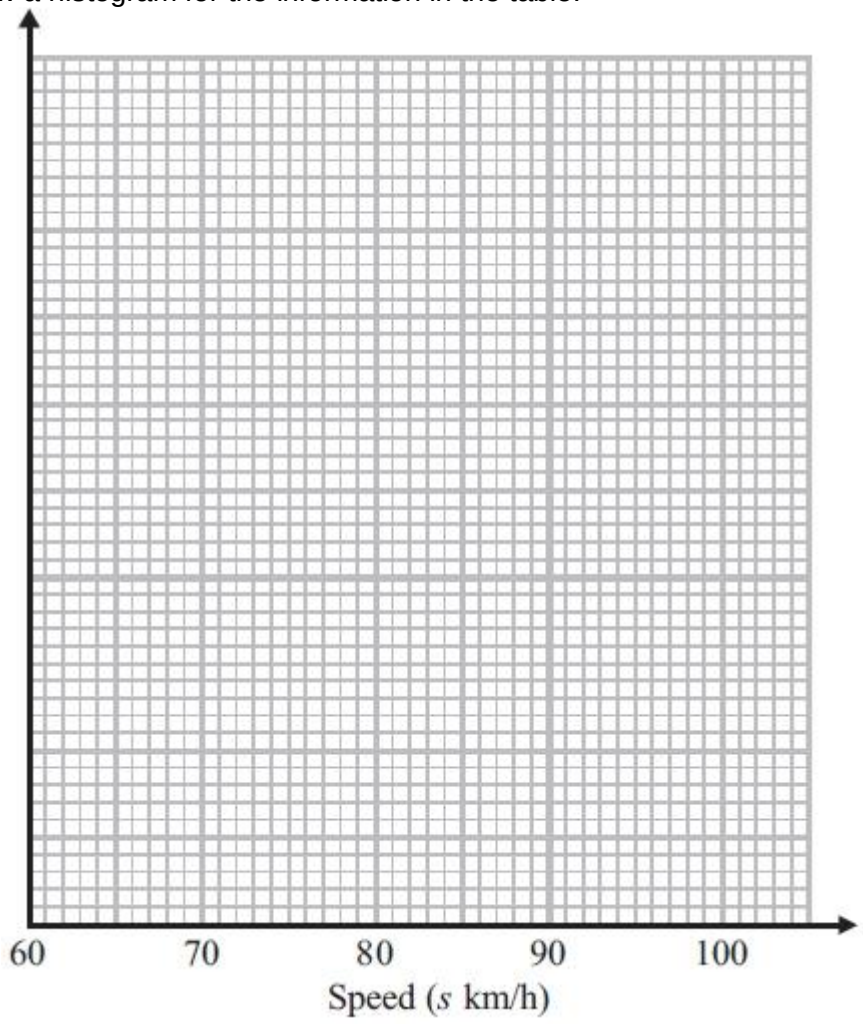
(Total for Question is 7 marks)

Q9.

The table gives some information about the speeds, in km/h, of 100 cars.

Speed (s km/h)	Frequency
$60 < s \leq 65$	15
$65 < s \leq 70$	25
$70 < s \leq 80$	36
$80 < s \leq 100$	24

(a) On the grid, draw a histogram for the information in the table.



(3)

(b) Work out an estimate for the number of cars with a speed of more than 85 km/h.

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(2)

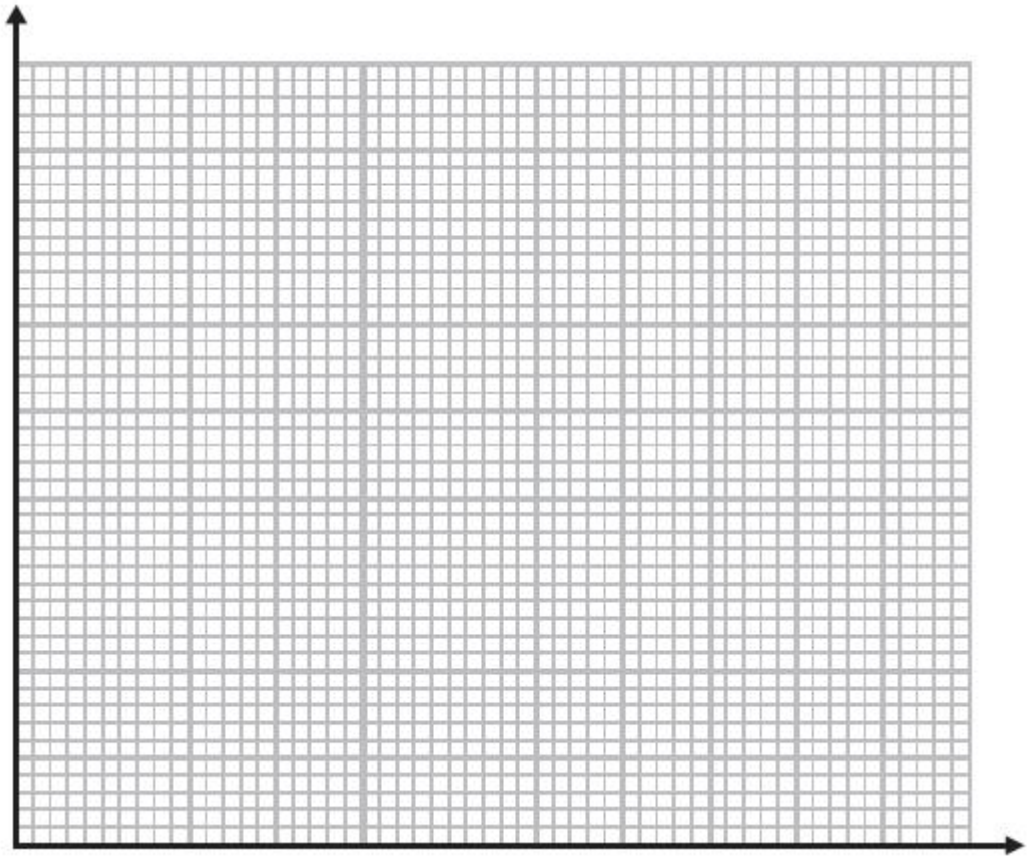
(Total for Question is 5 marks)

Q10.

The table shows some information about the total rainfall, in millimetres, recorded at 85 weather stations one month.

Rainfall (mm)	Frequency
$0 < x \leqslant 20$	16
$20 < x \leqslant 30$	27
$30 < x \leqslant 45$	36
$45 < x \leqslant 50$	6

(a) Draw a histogram for this information.



(3)

(b) One of the weather stations is selected at random.
Work out the probability that the rainfall recorded was over 40 mm.

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(3)

(Total for Question is 6 marks)