



Lite GCSE Maths

Cumulative Frequency

Name: _____

Class: _____

Author:

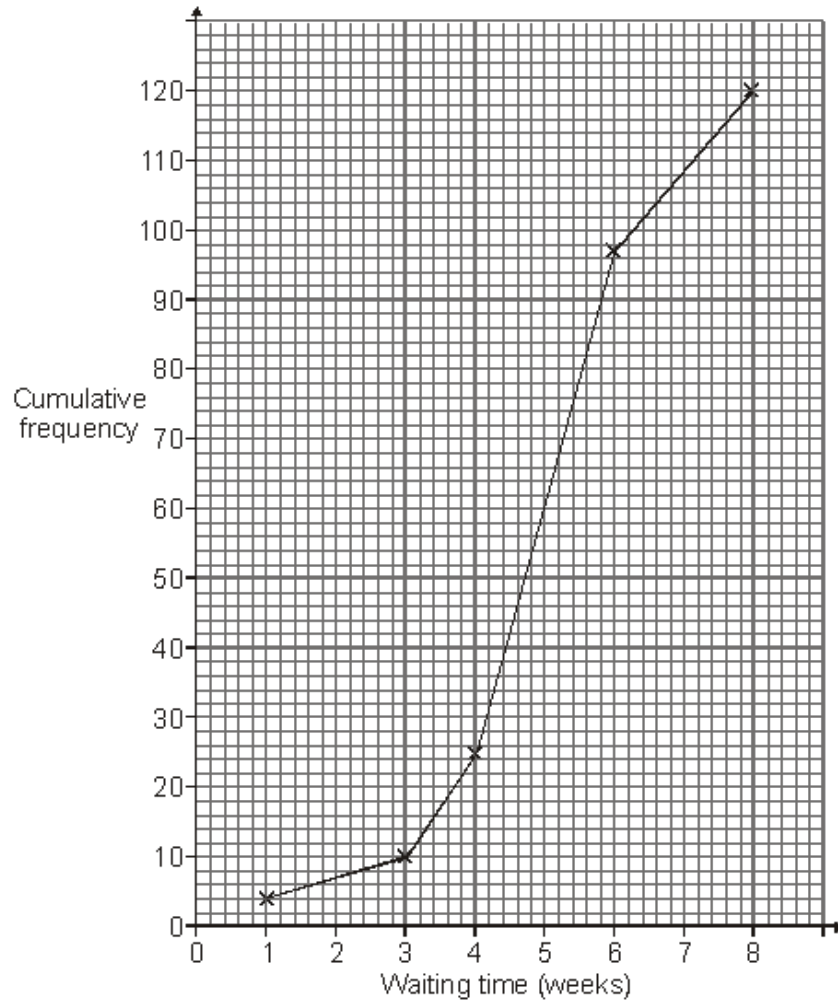
Date:

Time: 29

Marks: 27

Comments:

Q1. The cumulative frequency diagram shows the waiting times for 120 patients needing an operation at a hospital.



(a) The hospital claims that 75% of patients wait less than 40 days for the operation. Comment on this claim.

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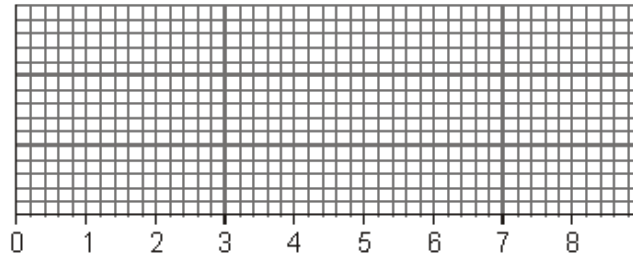
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(3)

- (b) The least waiting time was 1 week.
The range of waiting times was 7 weeks.

Use this information and the cumulative frequency diagram to draw a box plot for the waiting times



(3)

- (c) At a different hospital 746 patients had the same operation.
This table shows the age and gender of the patients.

	Age		
	Under 18	18 – 65	Over 65
Male	84	342	50
Female	39	194	37

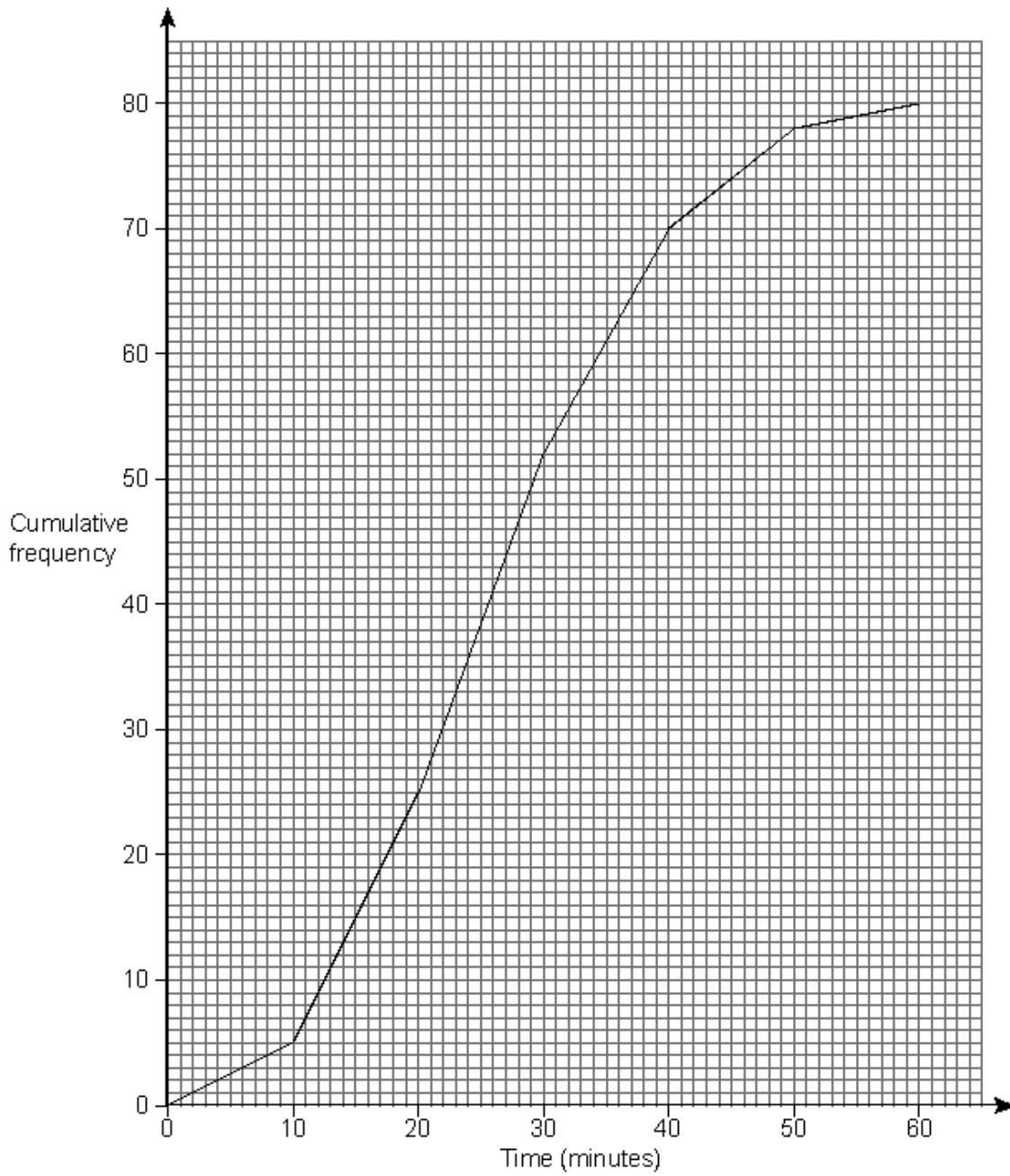
The hospital wants to take a stratified sample of 80 patients.
Complete the table below to show how many people from each group should be sampled.

	Age		
	Under 18	18 – 65	Over 65
Male			
Female			

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(3)
(Total 9 marks)

Q2. The cumulative frequency diagram summarises the length of time taken for each of Bill's last 80 visits to the Internet.



(a) Estimate the inter-quartile range of the times.

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Answerminutes

(2)

- (b) Bill is charged 50p by his service provider for each visit to the Internet lasting more than 24 minutes.
Shorter sessions are free.

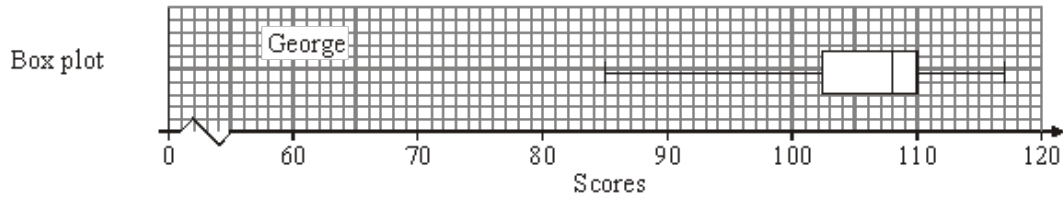
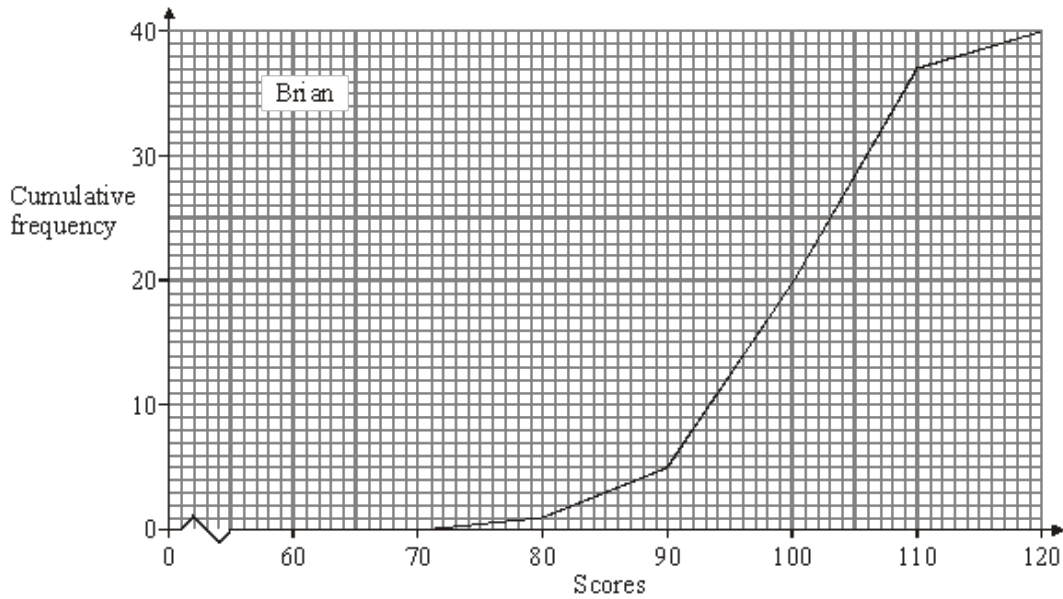
Estimate the total cost of these 80 visits to the Internet.

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Answer £.....

(2)
(Total 4 marks)

- Q3.** Brian and George played 40 games of golf.
The cumulative frequency diagram shows information about Brian's scores.
The box plot shows information about George's scores.



(a) Showing your method clearly, find

(i) Brian's median score

.....
.....

Answer

(1)

(ii) Brian's inter-quartile range.

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.....
.....

Answer

(2)

(b) Use the cumulative frequency diagram and the box plot to answer the following.

(i) Which player is the more consistent in his scoring?
Give a reason for your choice.

.....
.....

(1)

(ii) The winner of a game of golf is the player who has the lowest score.
Who do you think is the better player?
Give a reason for your choice.

.....
.....

(1)

(Total 5 marks)

Q4. The table shows the distances travelled to school by 50 pupils living in a town.

Distance travelled, d (km)	Frequency
$0 < d \leq 2$	12
$2 < d \leq 4$	18
$4 < d \leq 6$	10
$6 < d \leq 8$	8
$8 < d \leq 10$	2

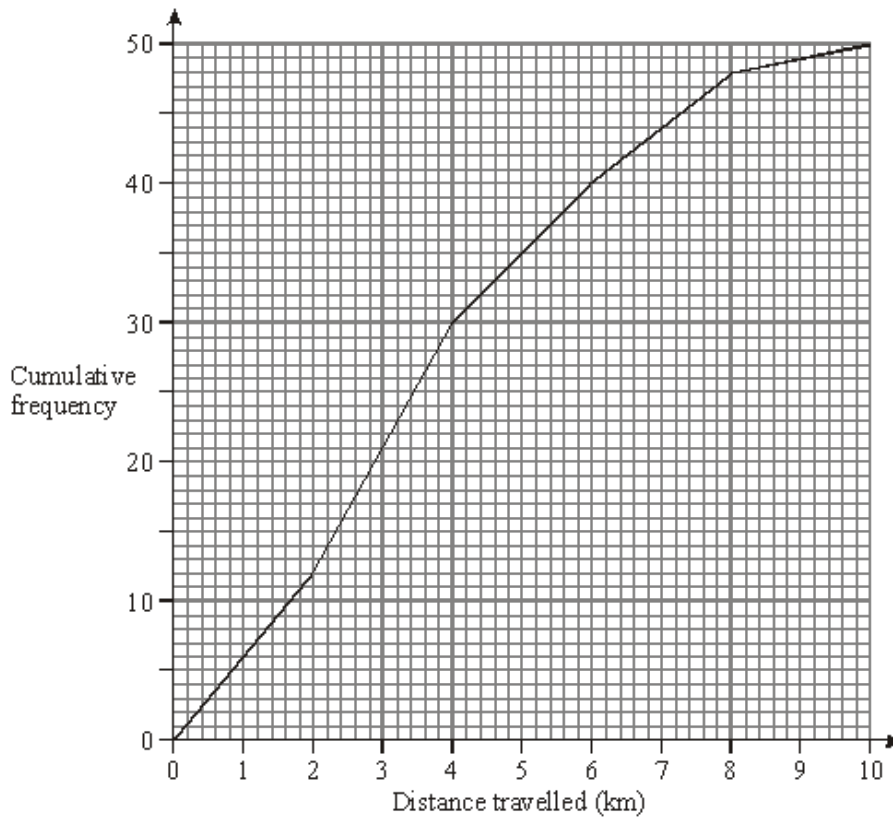
(a) Calculate an estimate of the mean distance travelled to school by these pupils.

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Answer km

(4)

(b) The distances travelled are shown on the cumulative frequency diagram.



Use the cumulative frequency diagram to estimate

(i) the median,

Answer km

(1)

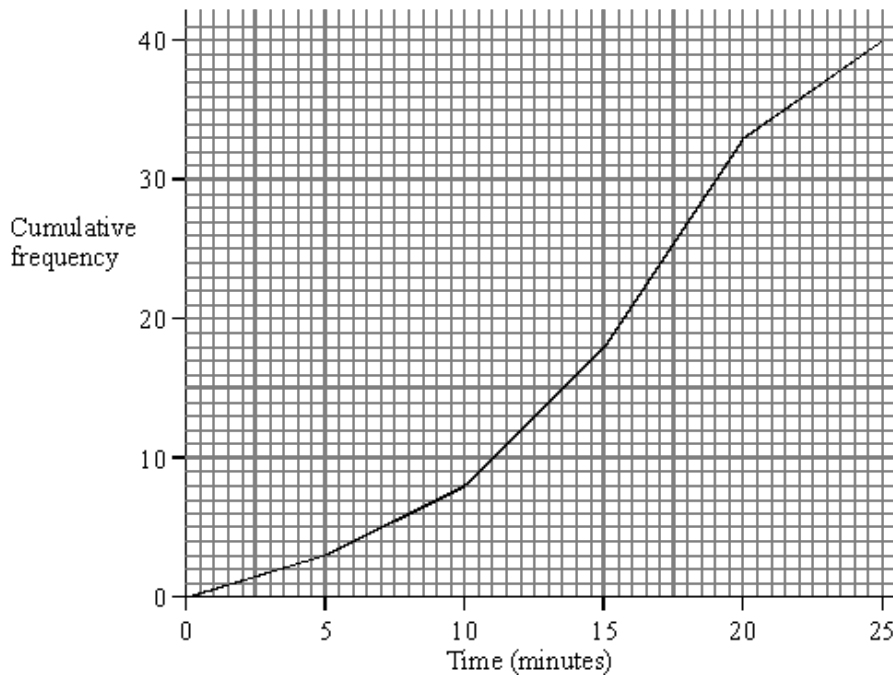
(ii) the interquartile range

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Answer km

(2)
(Total 7 marks)

Q5. The length of time, in minutes, of 40 telephone calls was recorded. A cumulative frequency diagram of this data is shown on the grid below.



Use the diagram to find the limits between which the middle 50% of the times lie.

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Answer minutes and minutes

(Total 2 marks)

