2.2 Data Presentation

Question Paper

Course	OCR A Level Maths: Statistics
Section	2. Data Presentation & Interpretation
Topic	2.2 Data Presentation
Difficulty	Medium

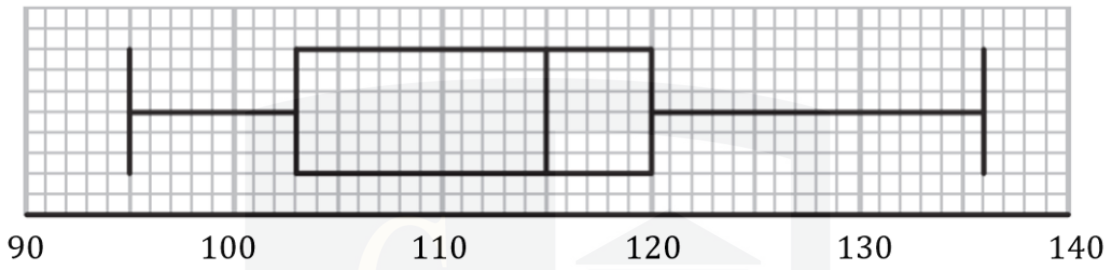
Time allowed: **40**

Score: **/35**

Percentage: **/100**

Question 1

Jeanette works for a conservation charity who rescue orphaned otters. Over many years she records the weight (g) of each otter when it first arrives. The data is illustrated in the following box and whisker diagram:



Weight of baby otters g

(a) Using the box plot above:

(i) Write down the median weight of the otters.

(ii) Write down the lower quartile.

(iii) Find the interquartile range.

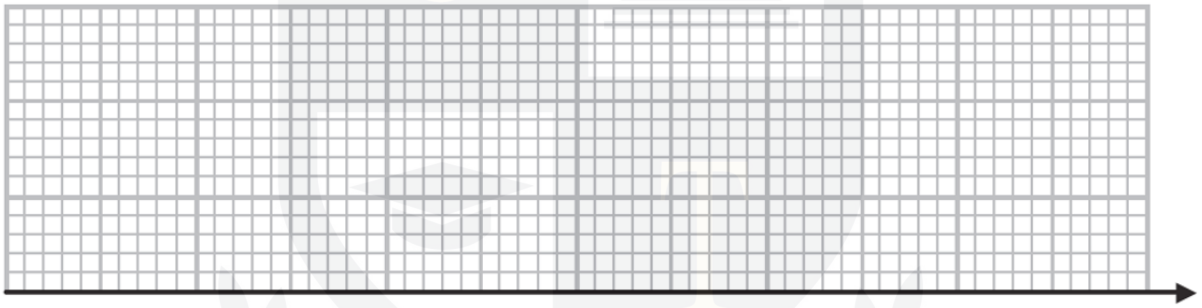
[4 marks]

Question 1

Otters are then weighed weekly to track their growth. Summary data on the weights (g) of otters after one month is shown in the table below:

	Weight g
Smallest weight	125
Range	48
Median	152
Upper Quartile	164
Interquartile Range	33

(b) On the grid, draw a box plot for the information given above.



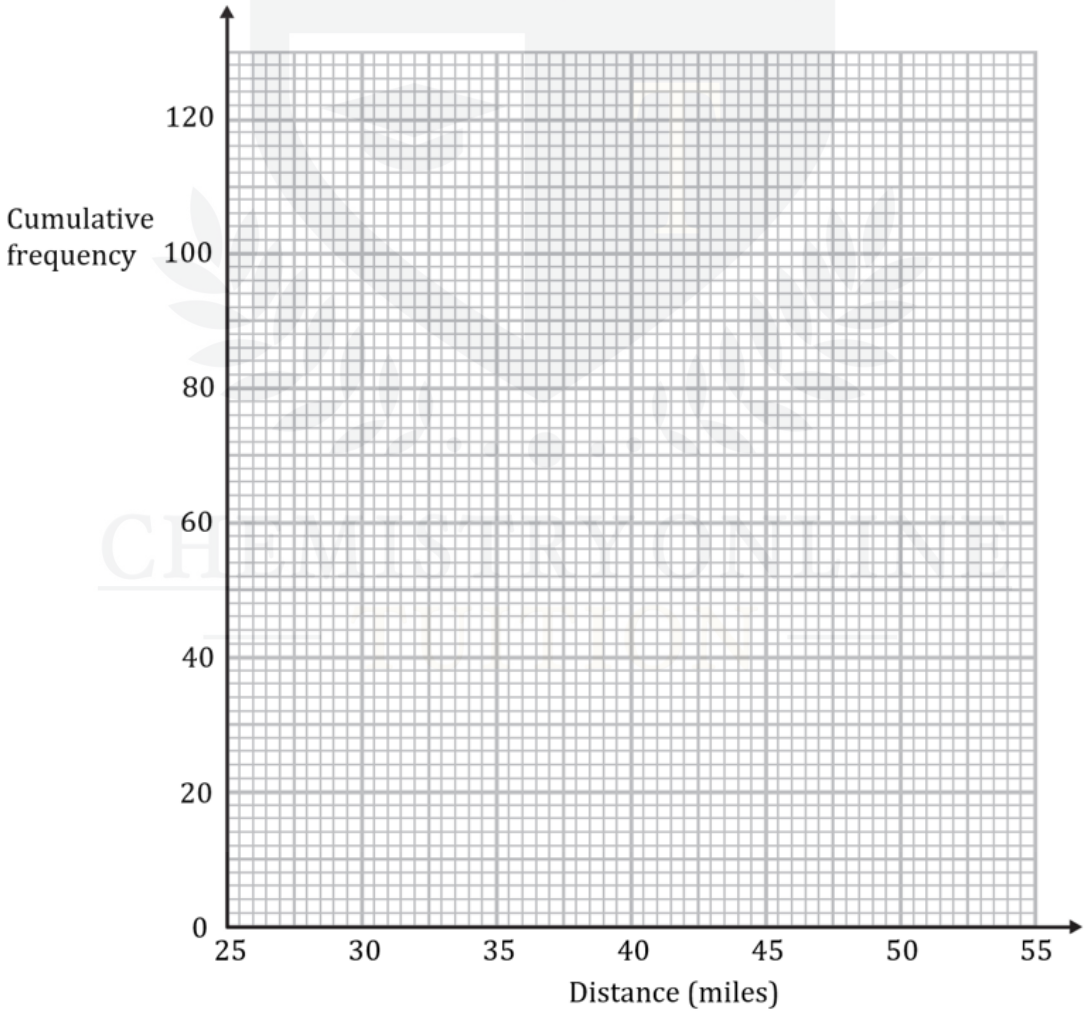
[3 marks]

Question 2

120 competitors enter an elimination race for charity. Runners set off from the same start running as many laps of the course as possible. Their total distance is tracked and the competitor who runs the furthest over a 6-hour period is the winner. The distances runners achieved are recorded in the table below:

Distance d (miles)	Frequency f
$25 \leq d < 30$	8
$30 \leq d < 35$	10
$35 \leq d < 40$	32
$40 \leq d < 45$	54
$45 \leq d < 50$	10
$50 \leq d < 55$	6

(a) On the grid below, draw a cumulative frequency graph for the information in the table.



[3 marks]

Question 2

(b) Use your graph to find an estimate for the median and interquartile range.

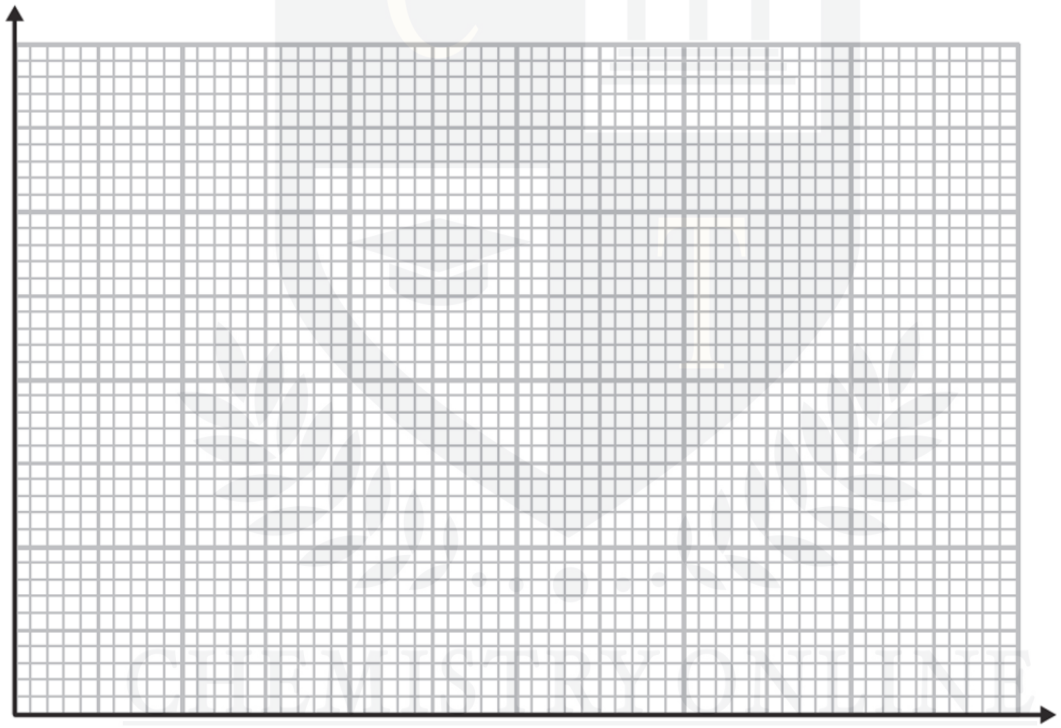
[3 marks]

Question 3

The total amount of time cleaners spent dealing with unplanned incidents in a supermarket was recorded each day. Data collected over 49 days is summarised in the table below.

Time t (minutes)	Frequency f
$0 \leq t < 90$	9
$90 \leq t < 120$	24
$120 \leq t < 200$	12
$200 \leq t < 250$	4

(a) On the grid below, draw a histogram to represent this data.



[4 marks]

Question 3

(b) Estimate how often cleaners spent longer than 3 hours dealing with incidents.

[3 marks]

Question 4

A taxi firm, JustDrive, records data on the amount of time, to the nearest minute, that customers had to wait before their taxis arrived. A random sample of 20 times is given below:

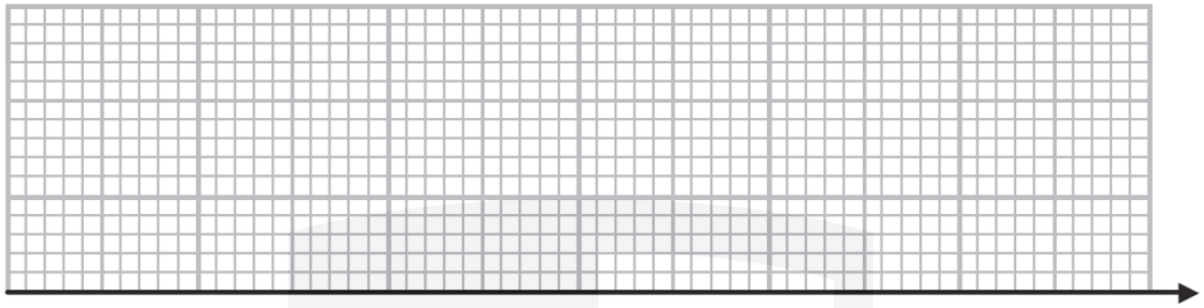
6	7	16	30	24
27	20	7	5	8
20	24	27	12	34
32	31	6	19	14

(a) Find the median and interquartile range of the waiting times.

[3 marks]

Question 4

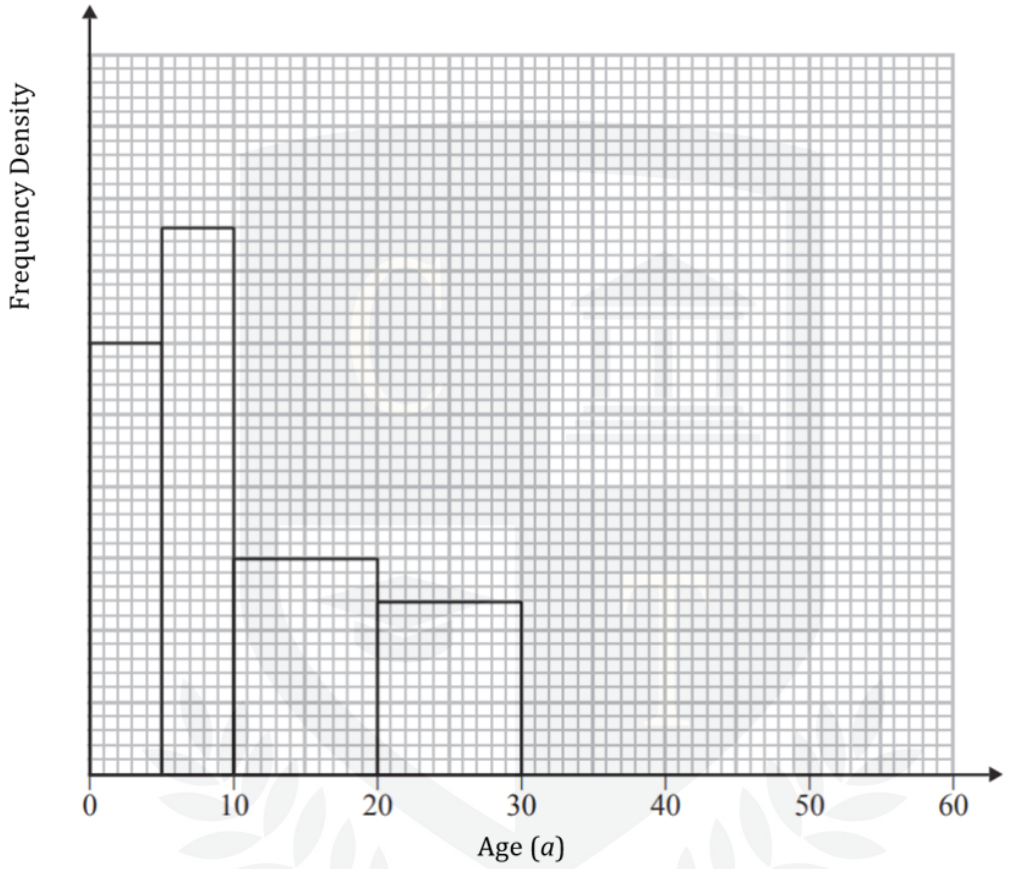
(b) On the grid, draw a box plot for the information given above.



[3 marks]

Question 5

Filmworld cinemas collected data on the ages of visitors to their cinemas during a 24-hour period. The incomplete histogram and frequency table show some of the information they collected:



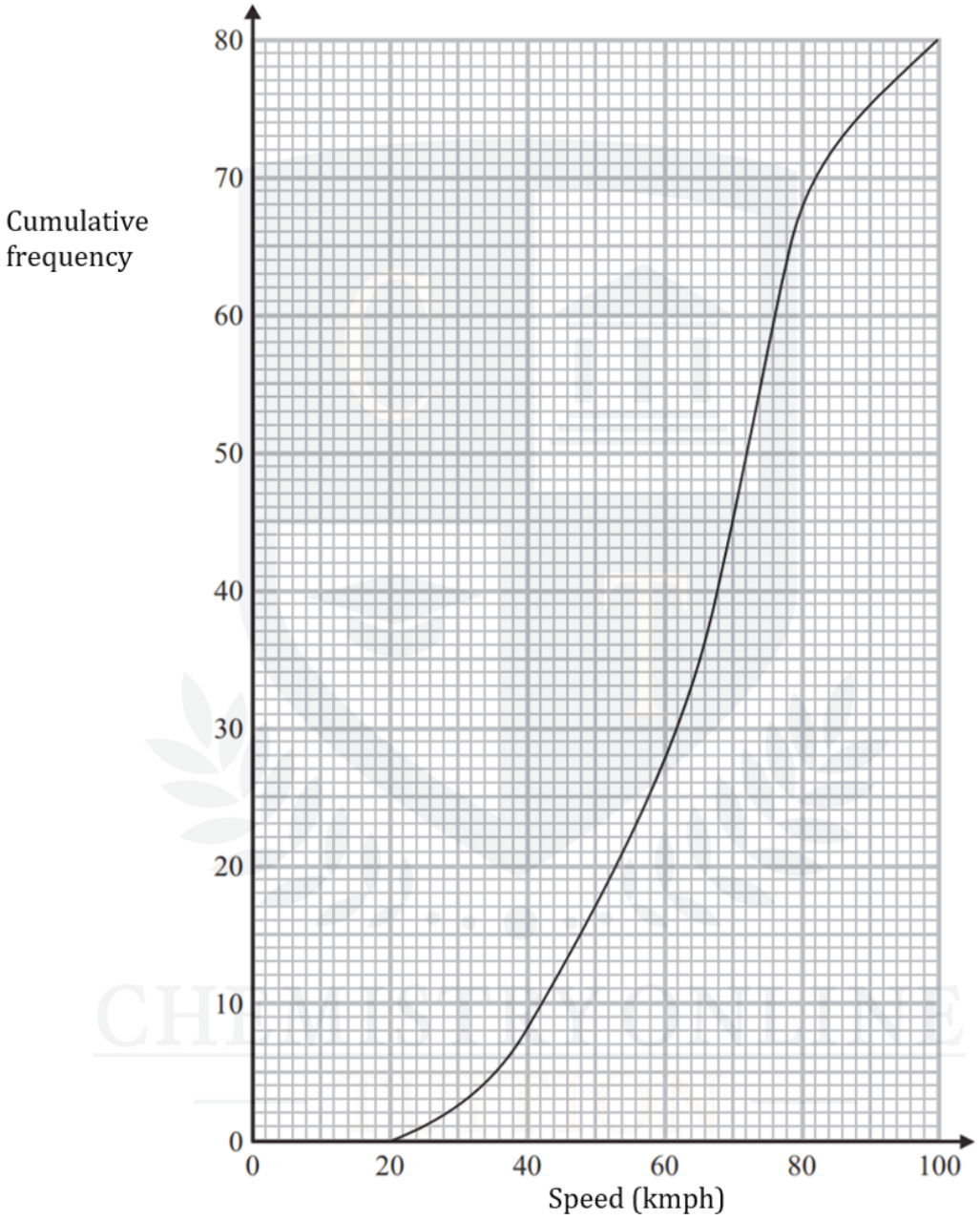
Age a (years)	Frequency f
$0 \leq a < 5$	15
$5 \leq a < 10$	
$10 \leq a < 20$	
$20 \leq a < 30$	12
$30 \leq a < 50$	18
$50 \leq a < 60$	7

Use the information to complete the histogram and fill out the missing data in the frequency table.

[4 marks]

Question 6

Police check the speed of vehicles travelling along a stretch of highway. The cumulative frequency curve below summarises the data for the speeds, in kmph, of 80 vehicles:



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

[2 marks]

Question 6

The speed limit for this section of road is 80 kmph.

(b) Vehicles travelling above the speed limit are issued with a speeding ticket. Those travelling more than 10% over the speed limit are pulled over. Use the graph to estimate the percentage of vehicles that the police pull over.

[3 marks]