Histograms, Bar Charts, Pictograms, Scatter Diagrams & Frequency Distributions

Question Paper 1

Level	IGCSE
Subject	Maths (0580)
Exam Board	Cambridge International Examinations (CIE)
Paper Type	Extended
Topic	Statistics
Sub-Topic	Histograms, Bar Charts, Pictograms, Scatter Diagrams & Frequency Distributions
Booklet	Question Paper 1

Time Allowed: **58 minutes**

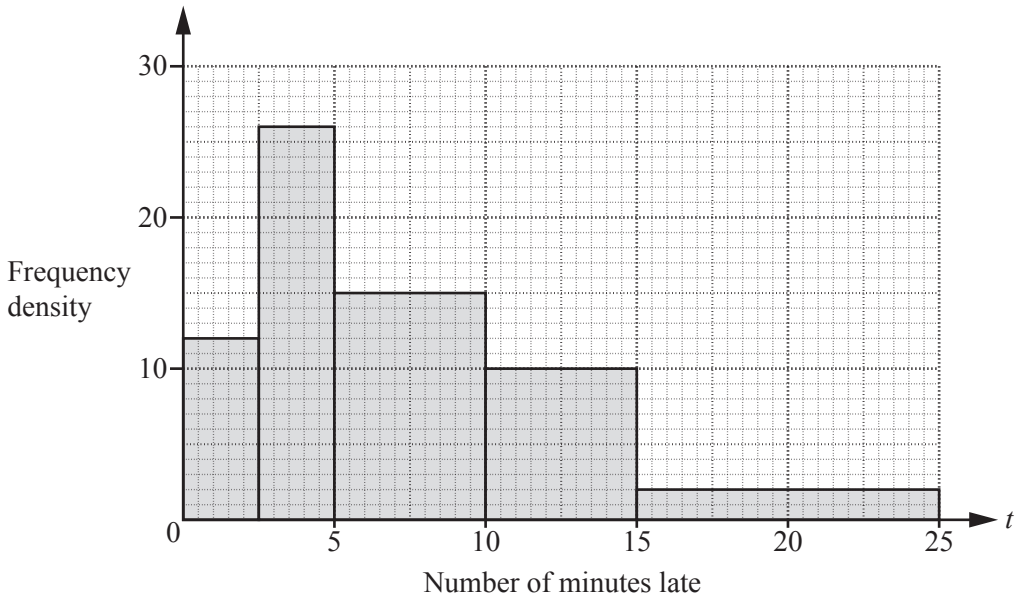
Score: **/48**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

1 Deborah records the number of minutes late, t, for trains arriving at a station.
The histogram shows this information.



(a) Find the number of trains that Deborah recorded.

..... [2]

(b) Calculate the percentage of the trains recorded that arrived more than 10 minutes late.

.....% [2]

2 Raj measures the height, h cm, of 70 plants.
The table shows the information.

Height (h cm)	$10 < h \leqslant 20$	$20 < h \leqslant 40$	$40 < h \leqslant 50$	$50 < h \leqslant 60$	$60 < h \leqslant 90$
Frequency	7	15	27	13	8

Calculate an estimate of the mean height of the plants.

..... cm [4]

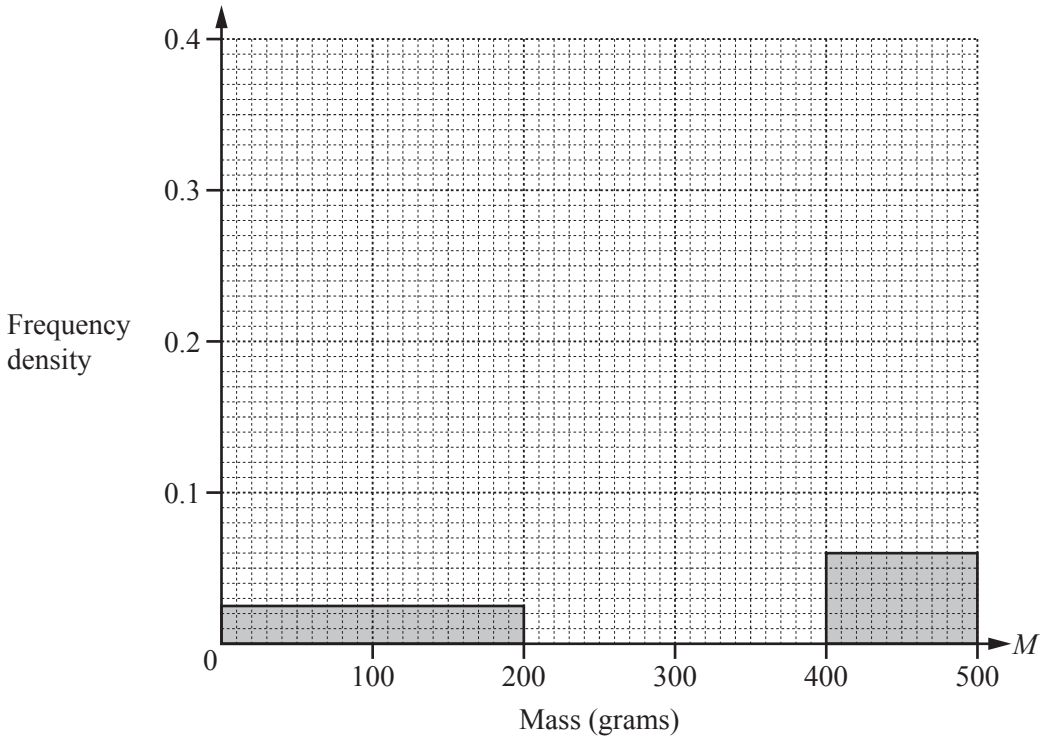
3 **(a)** A group of 50 students estimated the mass, M grams, of sweets in a jar.
The results are shown in the table.

Mass (M grams)	Number of students
$0 < M \leqslant 200$	5
$200 < M \leqslant 300$	9
$300 < M \leqslant 350$	18
$350 < M \leqslant 400$	12
$400 < M \leqslant 500$	6

(i) Calculate an estimate of the mean.

Answer(a)(i) ..... grams [4]

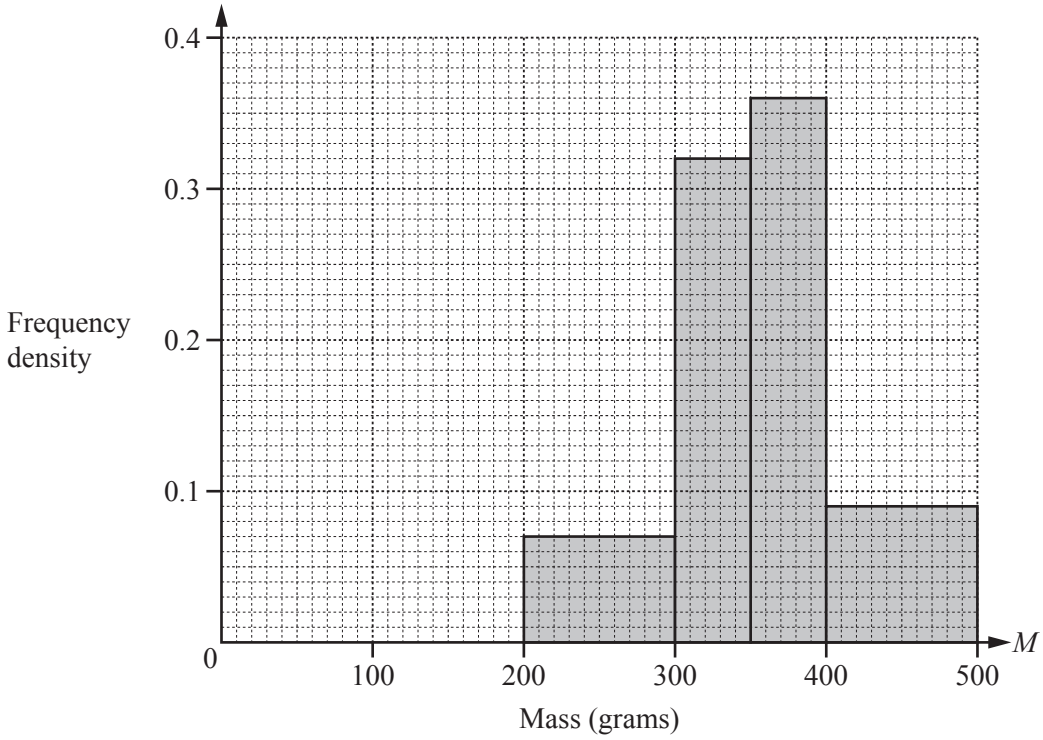
(ii) Complete this histogram to show the information in the table.



[3]

(b) A group of 50 adults also estimated the mass, M grams, of the sweets in the jar.
The histogram below shows information about their estimates.

Use the histograms to make two comparisons between the distributions of the estimates of the students and the adults.



Answer(b)

1 .....

.....

2 .....

..... [2]

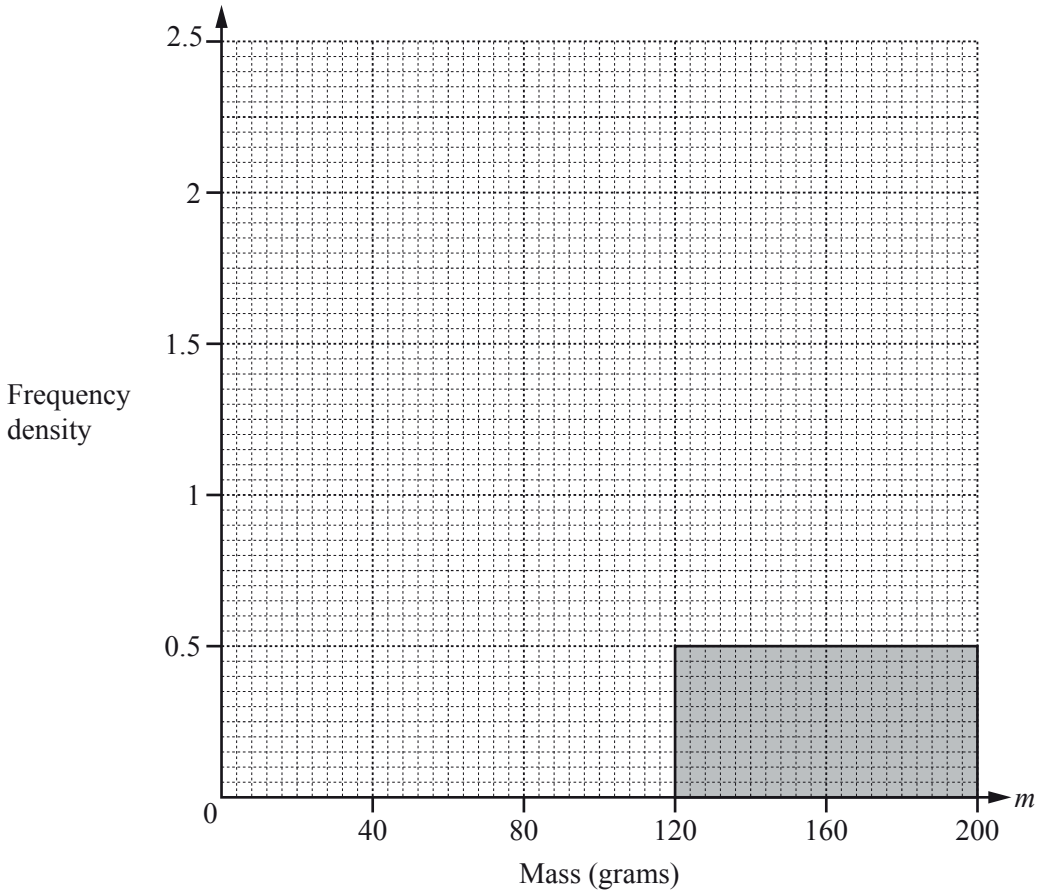
4 The table shows information about the masses, m grams, of 160 apples.

Mass (m grams)	$30 < m \leqslant 80$	$80 < m \leqslant 100$	$100 < m \leqslant 120$	$120 < m \leqslant 200$
Frequency	50	30	40	40

(a) Calculate an estimate of the mean.

Answer(a) ..... g [4]

(b) On the grid, complete the histogram to show the information in the frequency table.



[3]

(c) An apple is chosen at random from the 160 apples.

Find the probability that its mass is more than 120 g.

Answer(c) ..... [1]

(d) Two apples are chosen at random from the 160 apples, without replacement.

Find the probability that

(i) they both have a mass of more than 120 g,

Answer(d)(i) ..... [2]

(ii) one has a mass of more than 120 g and one has a mass of 80 g or less.

Answer(d)(ii) ..... [3]

5 The table shows the height, h cm, of 40 children in a class.

Height (h cm)	$120 < h \leqslant 130$	$130 < h \leqslant 140$	$140 < h \leqslant 144$	$144 < h \leqslant 150$	$150 < h \leqslant 170$
Frequency	3	14	4	6	13

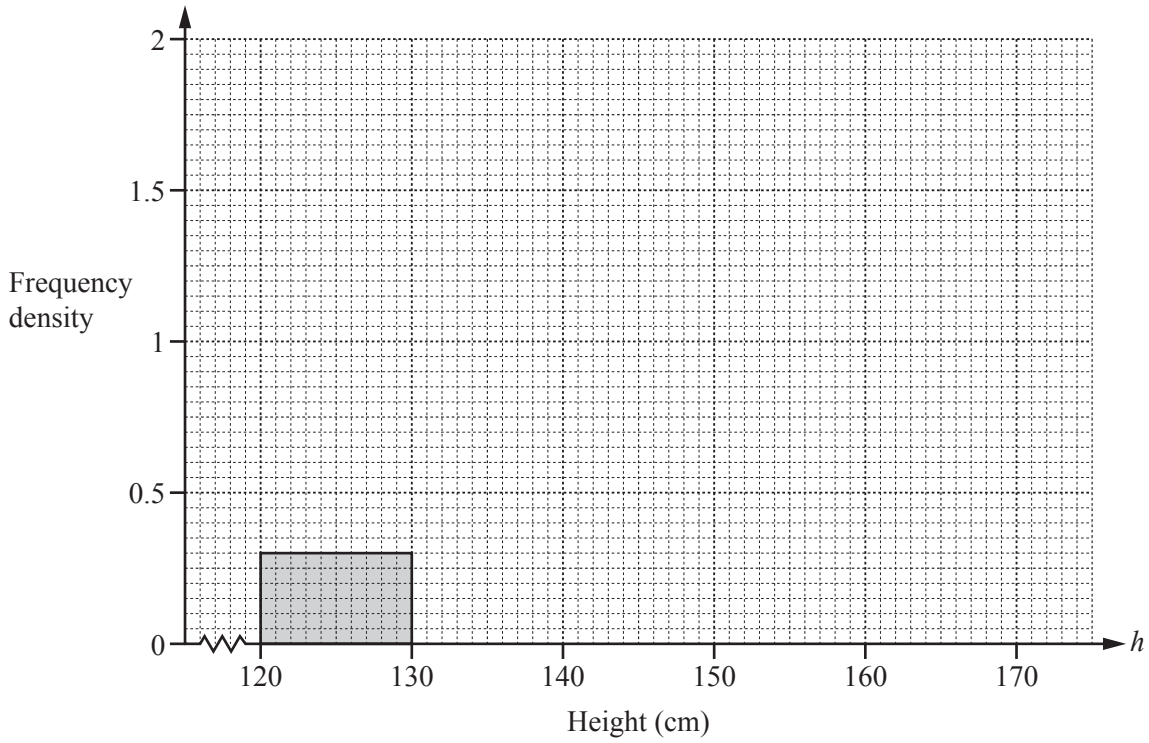
(a) Write down the class interval containing the median.

Answer(a) ..... $< h \leqslant$ ..... [1]

(b) Calculate an estimate of the mean height.

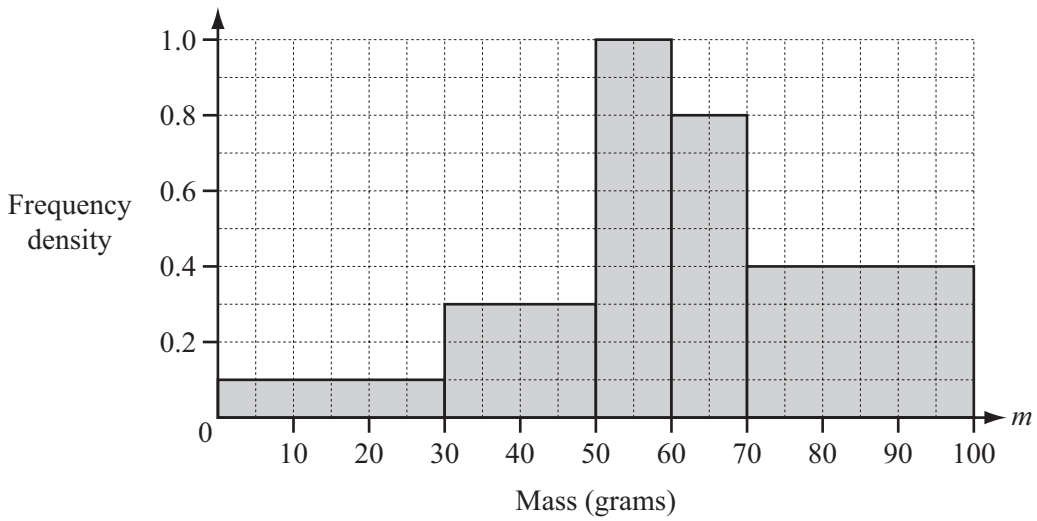
Answer(b) ..... cm [4]

(c) Complete the histogram.



[4]

6 **(a)**



The histogram shows some information about the masses (m grams) of 39 apples.

(i) Show that there are 12 apples in the interval $70 < m \leqslant 100$.

Answer(a)(i)

[1]

(ii) Calculate an estimate of the mean mass of the 39 apples.

Answer(a)(ii) ..... g [5]

(b) The mean mass of 20 oranges is 70 g.
One orange is eaten.
The mean mass of the remaining oranges is 70.5 g.

Find the mass of the orange that was eaten.

Answer(b) ..... g [3]