

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

Question Paper 4

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 4

Time Allowed: 52 minutes

Score: /43

Percentage: /100

Grade Boundaries:

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

1 Coins are put into a machine to pay for parking cars.
The probability that the machine rejects a coin is 0.05 .

(a) Adhira puts 2 coins into the machine.

(i) Calculate the probability that the machine rejects **both** coins.

..... [2]

(ii) Calculate the probability that the machine accepts at **least one** coin.

..... [1]

(b) Raj puts 4 coins into the machine.

Calculate the probability that the machine rejects **exactly one** coin.

..... [3]

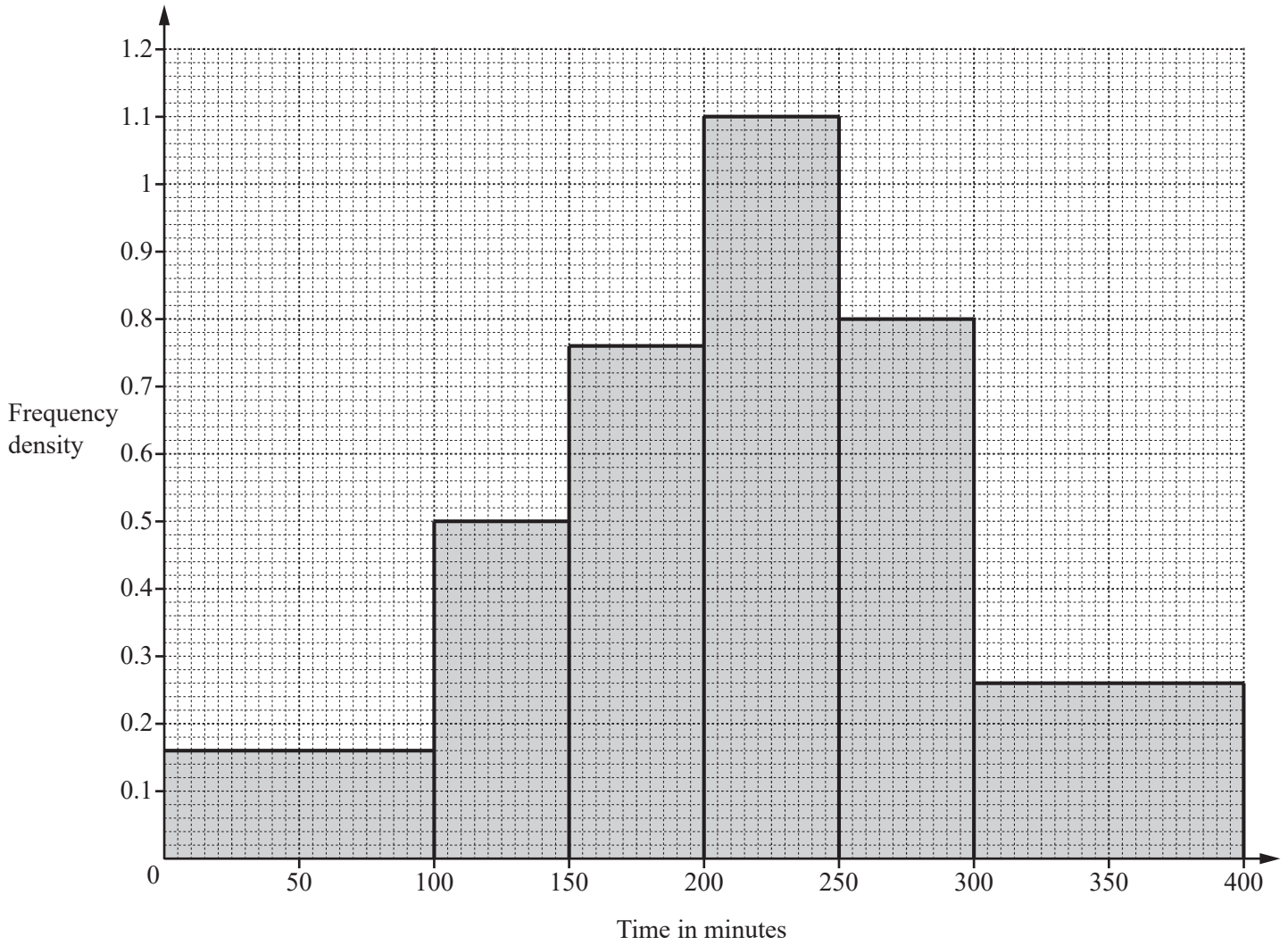
(c) The table shows the amount of money, \$ a , received for parking each day for 200 days.

Amount (\$ a)	$200 < a \leq 250$	$250 < a \leq 300$	$300 < a \leq 350$	$350 < a \leq 400$	$400 < a \leq 450$	$450 < a \leq 500$
Frequency	13	19	27	56	62	23

Calculate an estimate of the mean amount of money received each day.

\$..... [4]

(d) The histogram shows the length of time that 200 cars were parked.



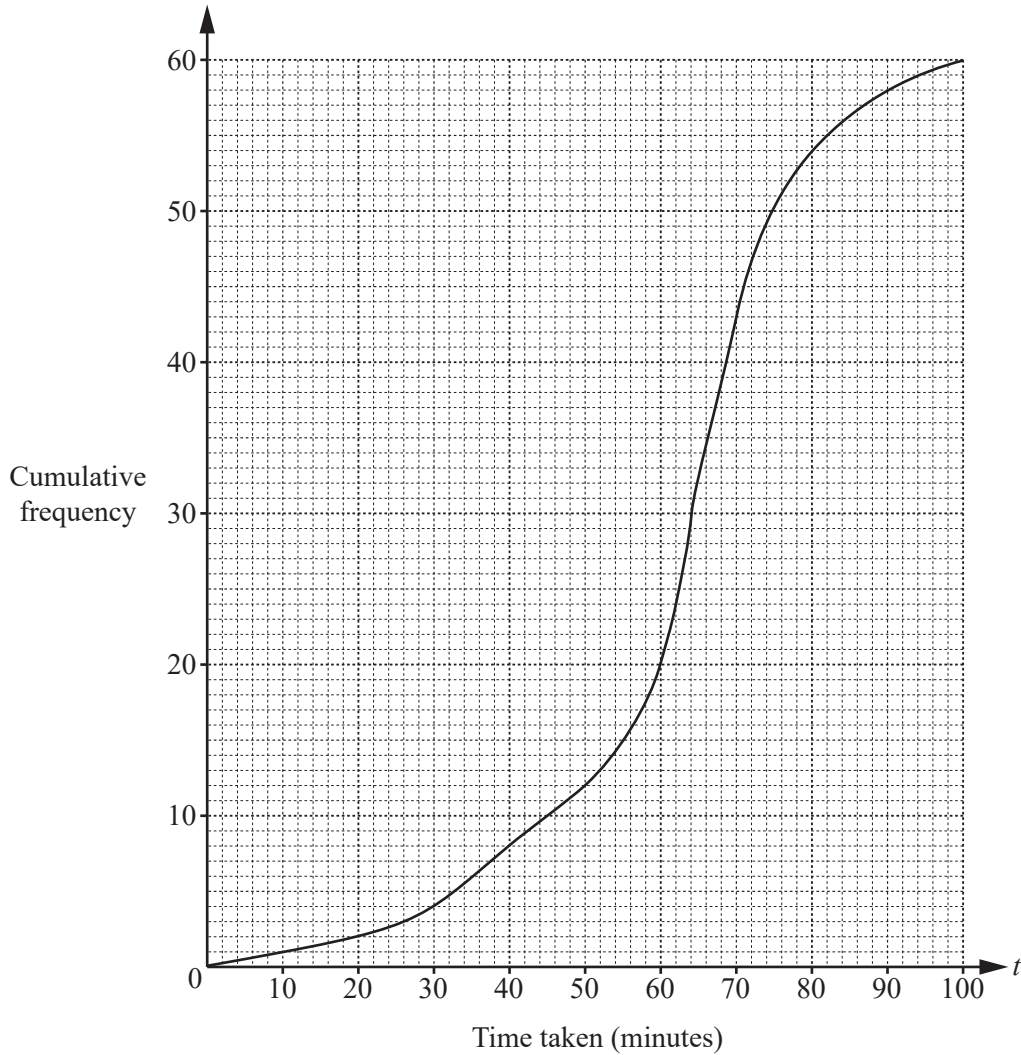
(i) Calculate the number of cars that were parked for 100 minutes or less.

..... [1]

(ii) Calculate the percentage of cars that were parked for more than 250 minutes.

.....% [2]

- 2 The cumulative frequency diagram shows information about the time taken, t minutes, by 60 students to complete a test.



(a) Find

(i) the median,

..... min [1]

(ii) the inter-quartile range,

..... min [2]

(iii) the 40th percentile,

..... min [2]

(iv) the number of students who took more than 80 minutes to complete the test.

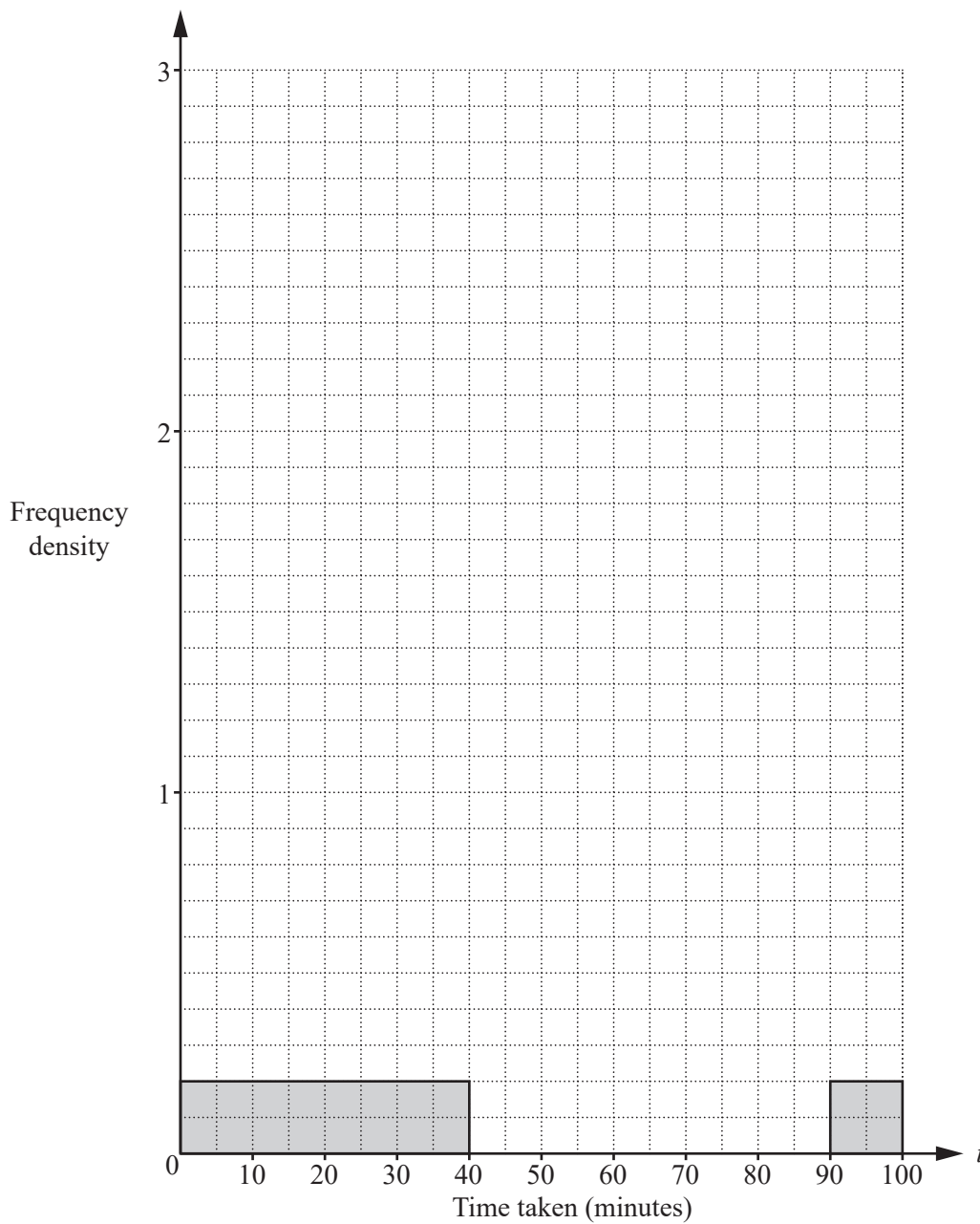
..... [2]

(b) Use the cumulative frequency diagram to complete the frequency table below.

Time taken (t minutes)	$0 < t \leq 40$	$40 < t \leq 60$	$60 < t \leq 70$	$70 < t \leq 80$	$80 < t \leq 90$	$90 < t \leq 100$
Frequency	8				4	

[3]

(c) On the grid below, complete the histogram to show the information in the table in part (b).



[4]

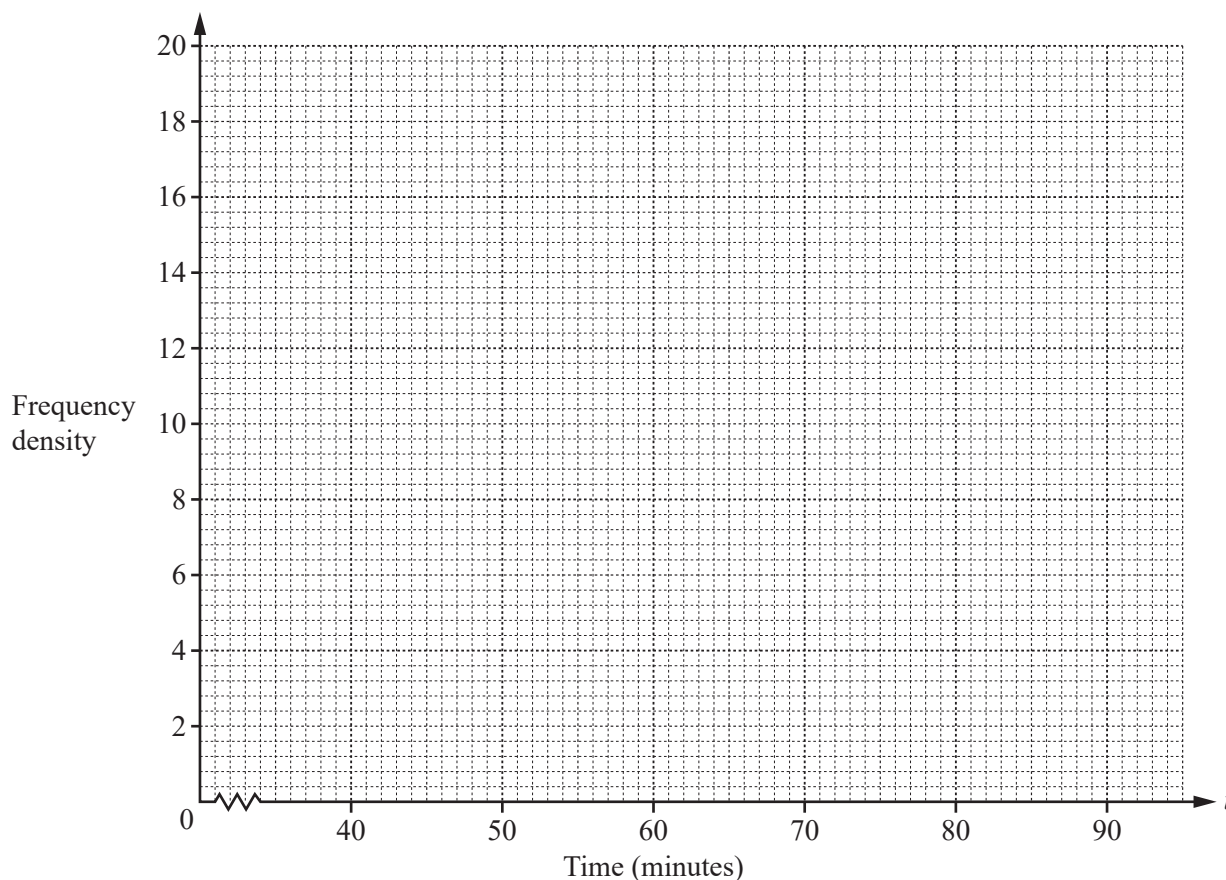
3 The table shows the times, t minutes, taken by 200 students to complete an IGCSE paper.

Time (t minutes)	$40 < t \leq 60$	$60 < t \leq 70$	$70 < t \leq 75$	$75 < t \leq 90$
Frequency	10	50	80	60

(a) By using mid-interval values, calculate an estimate of the mean time.

Answer(a) min [3]

(b) On the grid, draw a histogram to show the information in the table.



4 The time, t seconds, taken for each of 50 chefs to cook an omelette is recorded.

Time (t seconds)	$20 < t \leq 25$	$25 < t \leq 30$	$30 < t \leq 35$	$35 < t \leq 40$	$40 < t \leq 45$	$45 < t \leq 50$
Frequency	2	6	7	19	9	7

(a) Write down the modal time interval.

Answer(a) s [1]

(b) Calculate an estimate of the mean time.
Show all your working.

Answer(b) s [4]

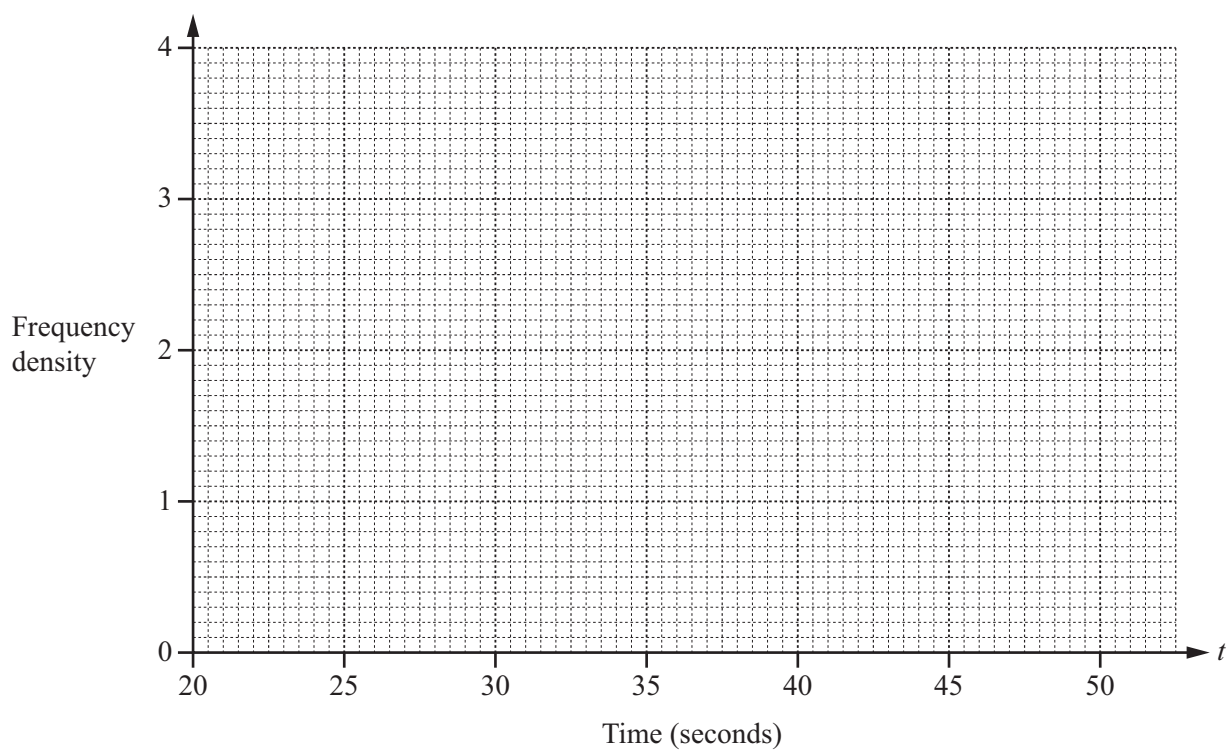
(c) A new frequency table is made from the results shown in the table opposite.

Time (t seconds)	$20 < t \leq 35$	$35 < t \leq 40$	$40 < t \leq 50$
Frequency			

(i) Complete the table.

[1]

(ii) On the grid, draw a histogram to show the information in this new table.



[3]