

6 One morning, a dentist has appointments for 10 patients.
The stem-and-leaf diagram shows the waiting time for 8 of these patients.

0	1 4
1	0 2 9
2	1 5 5

Key: 1 | 0 represents 10 minutes

The times for the two other patients, *P* and *Q*, are not shown in the stem-and-leaf diagram.

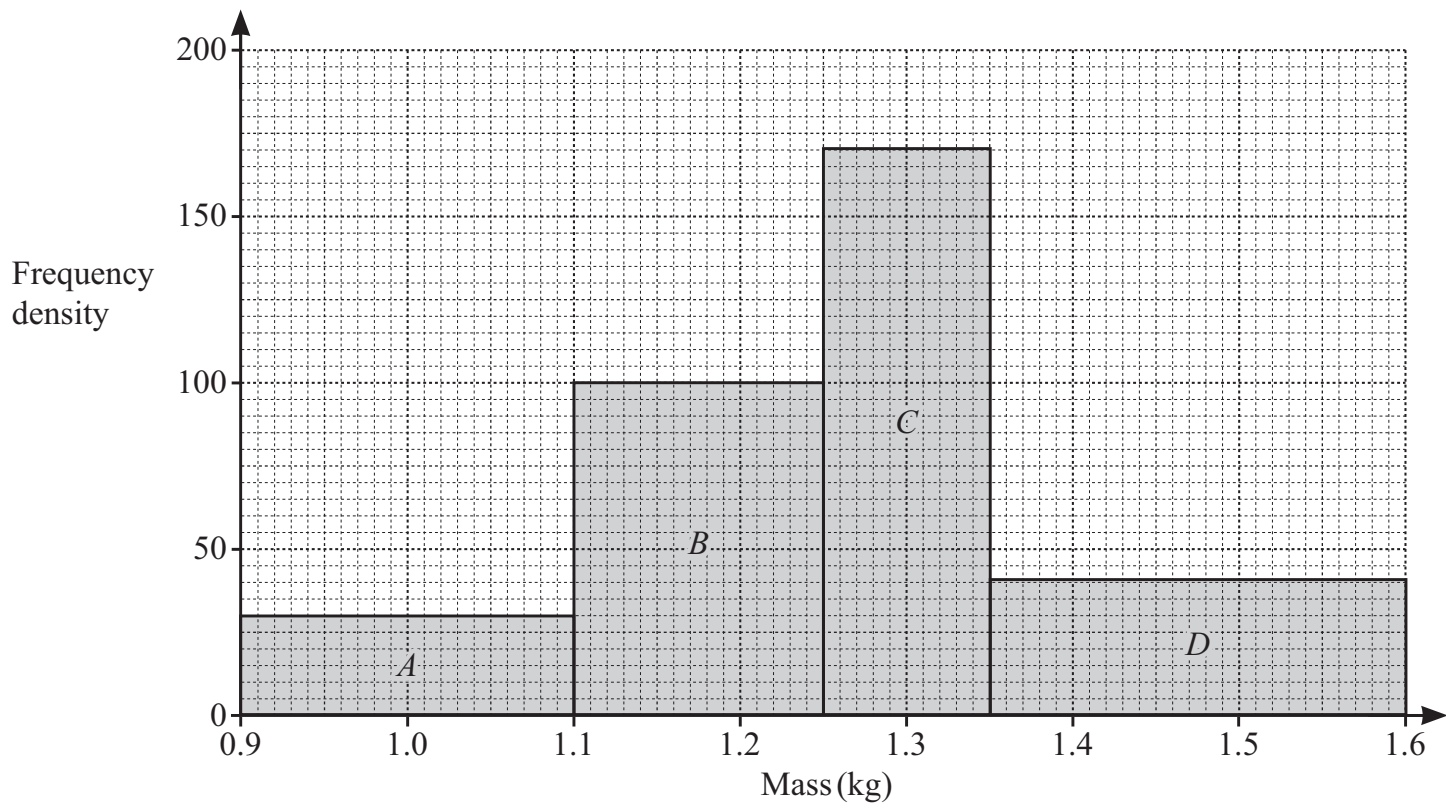
The mean waiting time of all 10 patients that morning is 16 minutes.
The range of waiting times is 26 minutes.
Patient *P* waits longer than patient *Q*.

Find the waiting time for each of patient *P* and patient *Q*.

Patient *P*min
Patient *Q*min

[4]

16 The histogram shows information about the masses of some coconuts. The masses are classified into four categories A , B , C and D .



(a) Show that there are 10 coconuts in category D .

[1]

(b) Two of the coconuts from those in category C and category D are chosen at random.

Find the probability that both are from category D .

..... [3]

(c) Calculate an estimate of the mean mass of the coconuts.

23 The table shows some information about the mass of each of 200 oranges.

Mass (m grams)	$180 < m \leq 200$	$200 < m \leq 210$	$210 < m \leq 215$	$215 < m \leq 230$
Frequency	32	64	74	30

(a) Calculate an estimate of the mean mass of an orange.

..... g [4]

(b) Sarah draws a histogram to show this information.
The table shows the height of one of the bars for this histogram.

Complete the table.

Mass (m grams)	$180 < m \leq 200$	$200 < m \leq 210$	$210 < m \leq 215$	$215 < m \leq 230$
Height of bar (cm)			7.4	

[3]

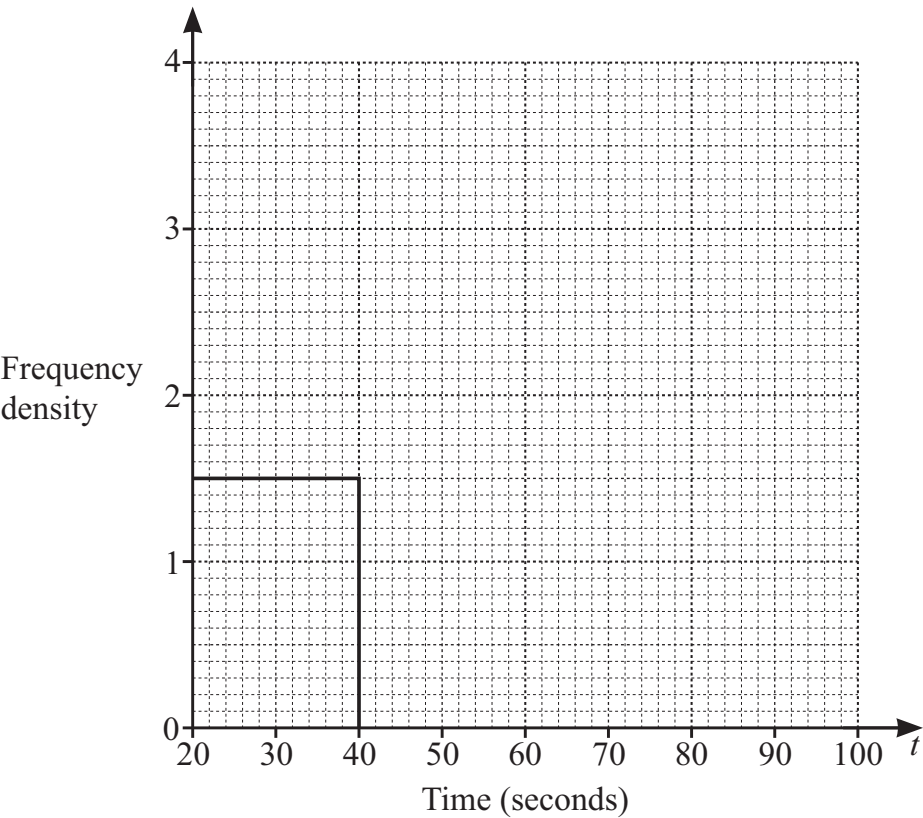
13 (a) 100 students solve a puzzle.
The table shows information about the time taken by each student to solve the puzzle.

Time (t seconds)	$20 < t \leq 40$	$40 < t \leq 60$	$60 < t \leq 100$
Frequency	30	40	30

(i) Work out an estimate of the mean.

.....s [4]

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

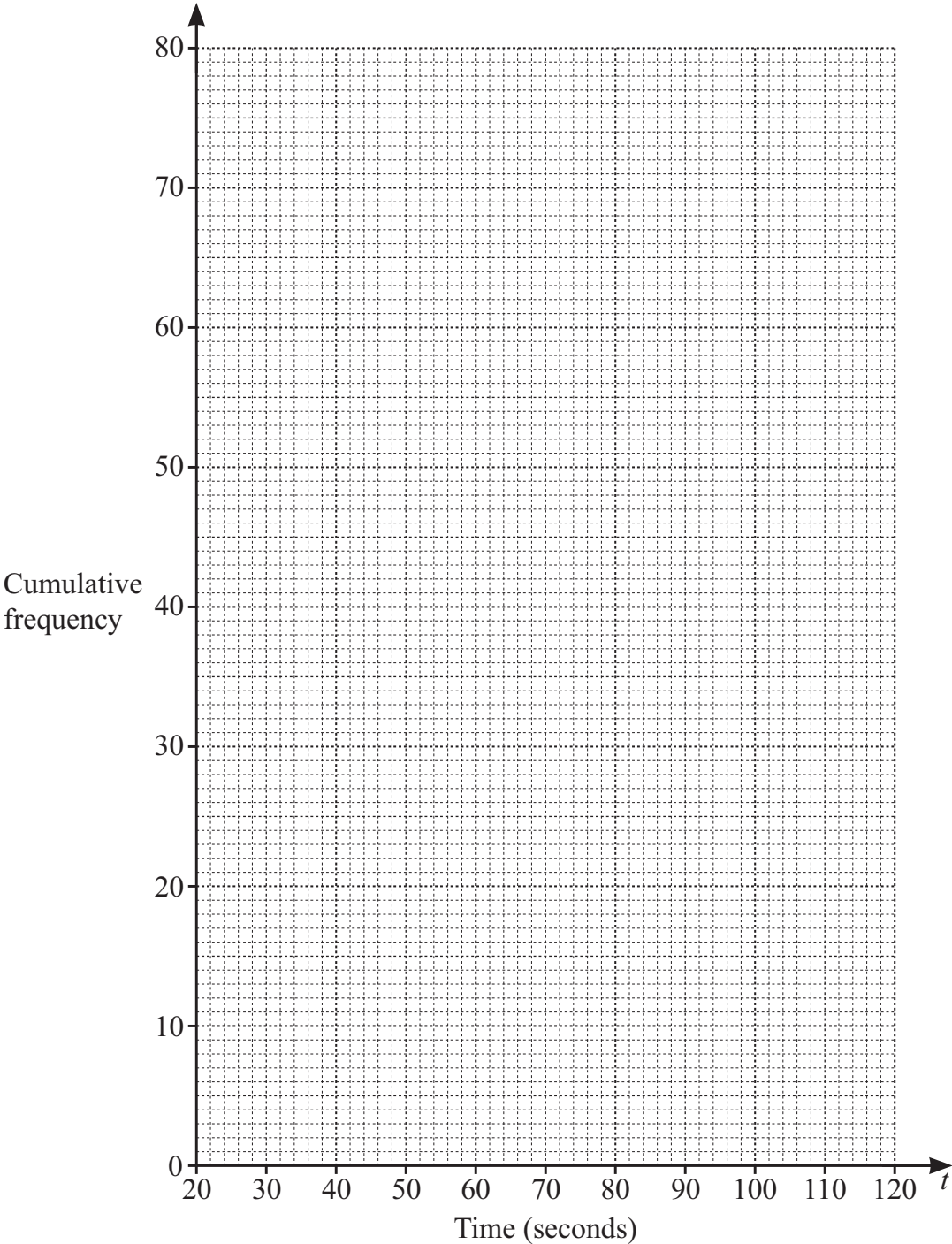


[2]

- (b) 80 adults solve the same puzzle as the students.
The cumulative frequency table shows information about the time taken by each adult to solve the puzzle.

Time (t seconds)	$t \leq 20$	$t \leq 40$	$t \leq 60$	$t \leq 80$	$t \leq 100$	$t \leq 120$
Cumulative frequency	0	12	36	60	74	80

- (i) On the grid, draw a cumulative frequency diagram.



[3]

- (ii) Use your cumulative frequency diagram to find an estimate for

(a) the median
..... s [1]

(b) the lower quartile. (5)

15 The height of each of 140 basketball players is recorded.
The table shows the results.

Height (h cm)	$160 < h \leq 180$	$180 < h \leq 185$	$185 < h \leq 190$	$190 < h \leq 200$	$200 < h \leq 210$
Frequency	7	12	31	70	20

(a) Calculate an estimate of the mean height.

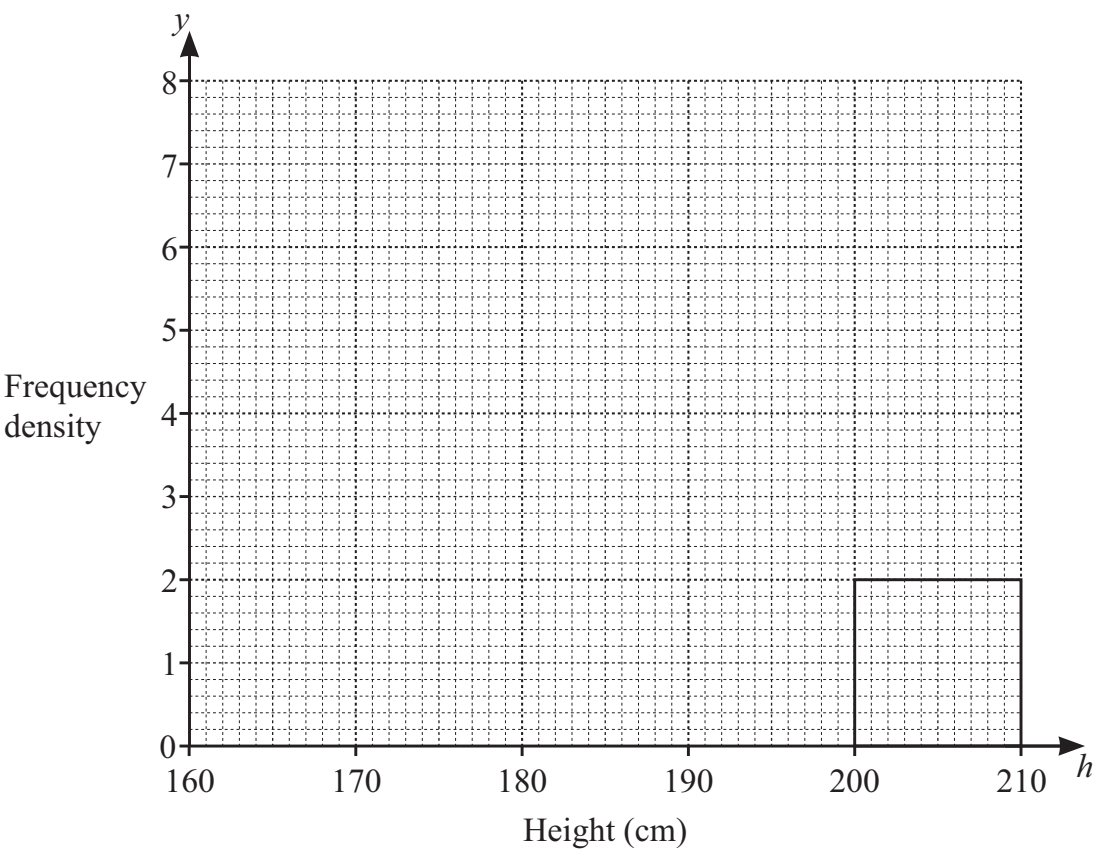
..... cm [4]

(b) Two of the players are chosen at random.

Find the probability that both players have a height greater than 190 cm and no more than 200 cm.

..... [2]

(c) Complete the histogram to show the information in the frequency table.



[3]

16 Mateo invests \$1250 at a rate of $r\%$ per year compound interest. At the end of 6 years the total value of his investment is \$1484.

Calculate the value of r .

$r =$ [3]