HISTOGRAMS

GCSE

1. **[3 marks]**

The table gives information about the areas of some farms in France.

Area (A hectares)	Frequency
$0 < A \leqslant 20$	50
$20 < A \leqslant 50$	90
$50 < A \leqslant 100$	120
$100 < A \leqslant 300$	160

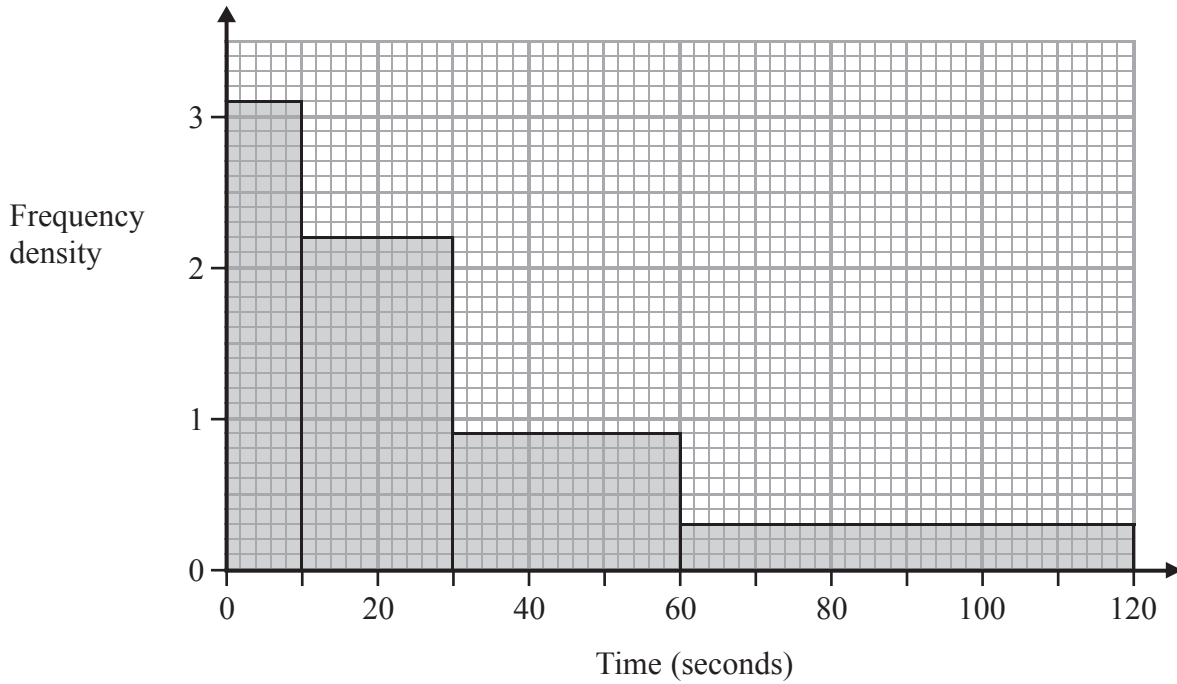On the grid, draw a histogram to show this information.

The histogram shows information about the times, t hours, for which some cars were left in a car park.

Calculate an estimate for the number of cars which were left in the car park for between 4.5 hours and 8 hours.
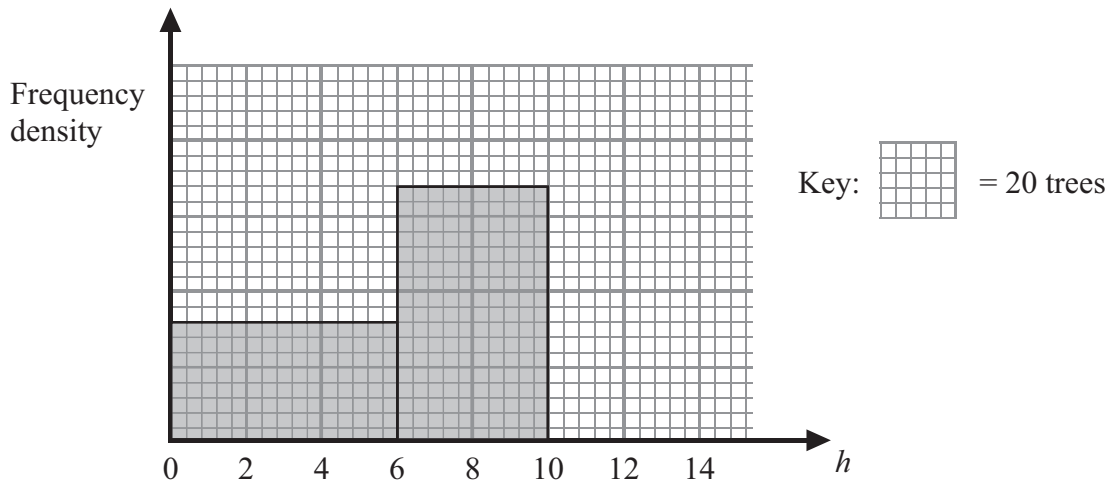
3. **[3 marks]**

The histogram shows information about the times taken by a telephone call centre to answer incoming calls.

Time (seconds)

Work out an estimate for the percentage of calls that are answered in less than 40 seconds.

.... %

4.   **[5 marks]**

The unfinished histogram shows information about the heights, h metres, of some trees.
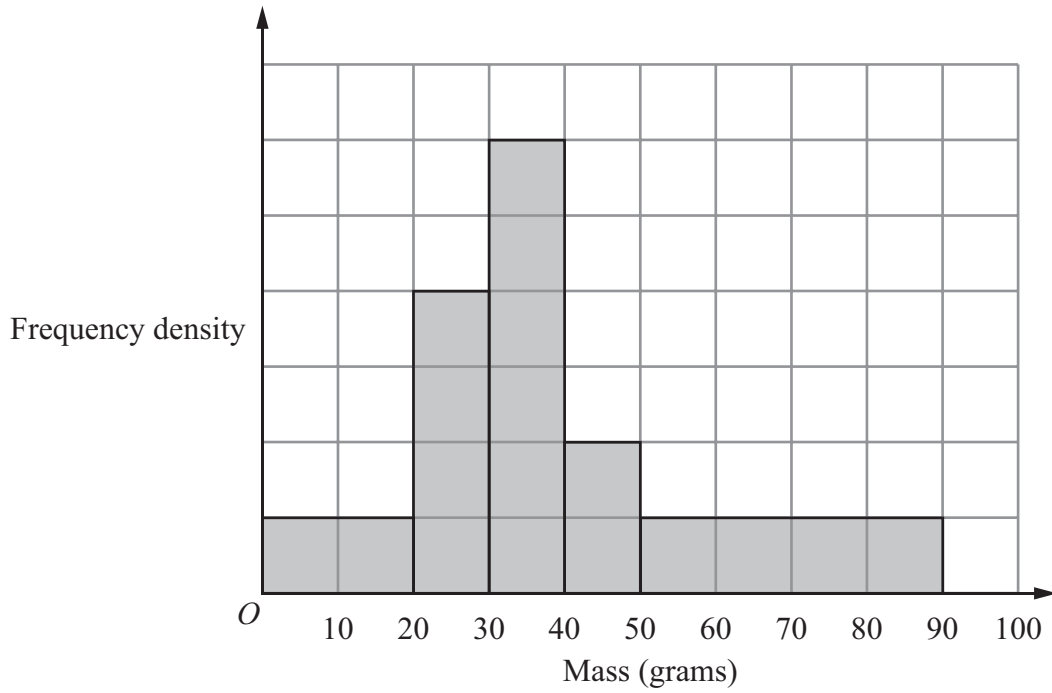A key is also shown.

(a) Calculate an estimate for the number of trees with heights in the interval
$4.5 < h \leqslant 10$

....
(3)

(b) There are 75 trees with heights in the interval $10 < h \leqslant 13$
Use this information to complete the histogram.

(2)

5. **[3 marks]**

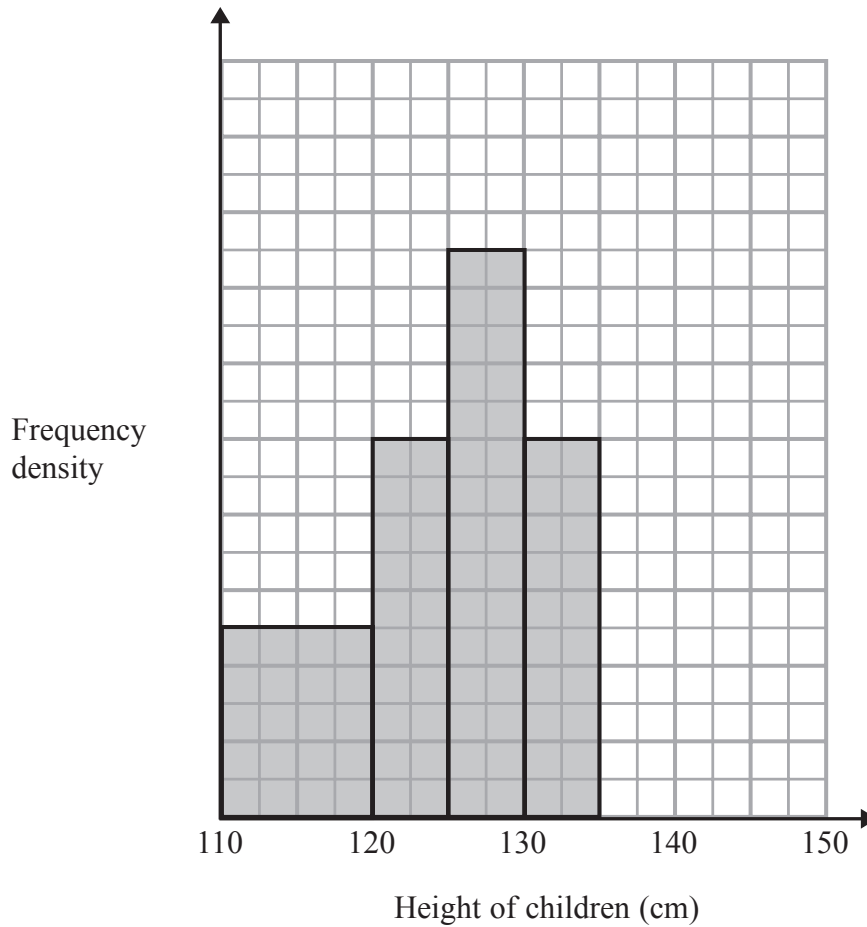The histogram shows information about the masses, in grams, of some stones.

There are 120 stones with masses less than 30 g.
Calculate an estimate of the number of stones with masses between 35 g and 70 g.

....

6. **[4 marks]**

The incomplete histogram shows information about the heights of a group of children.

Height of children (cm)

There were 10 children with heights between 130 cm and 135 cm.

(a) How many children had heights between 110 cm and 130 cm?

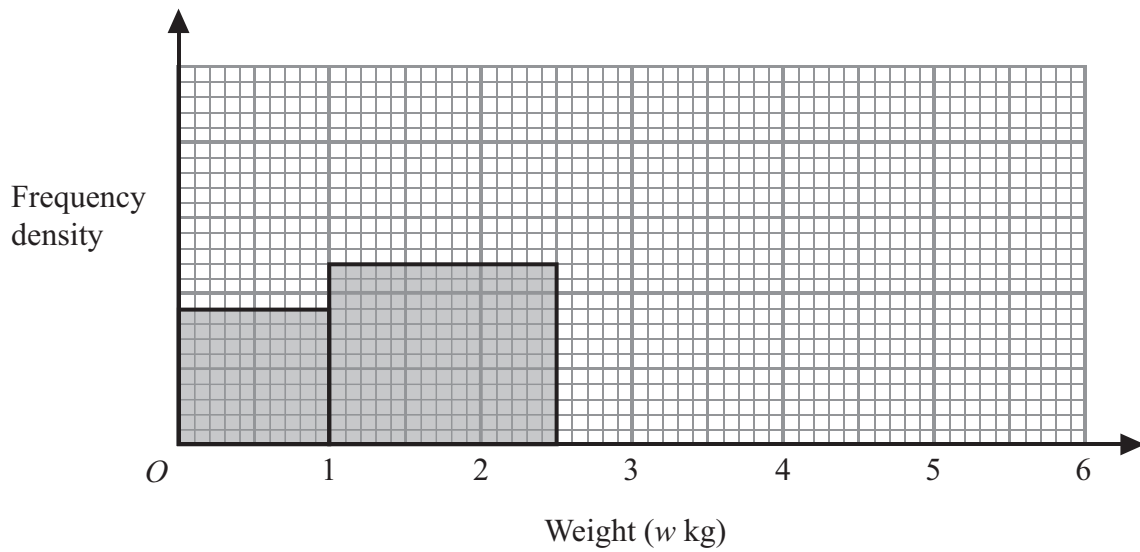..

(3)

There were 6 children with heights between 135 cm and 145 cm.

(b) Show this information on the histogram.

(1)

The incomplete table and histogram show information about the weights of some books.

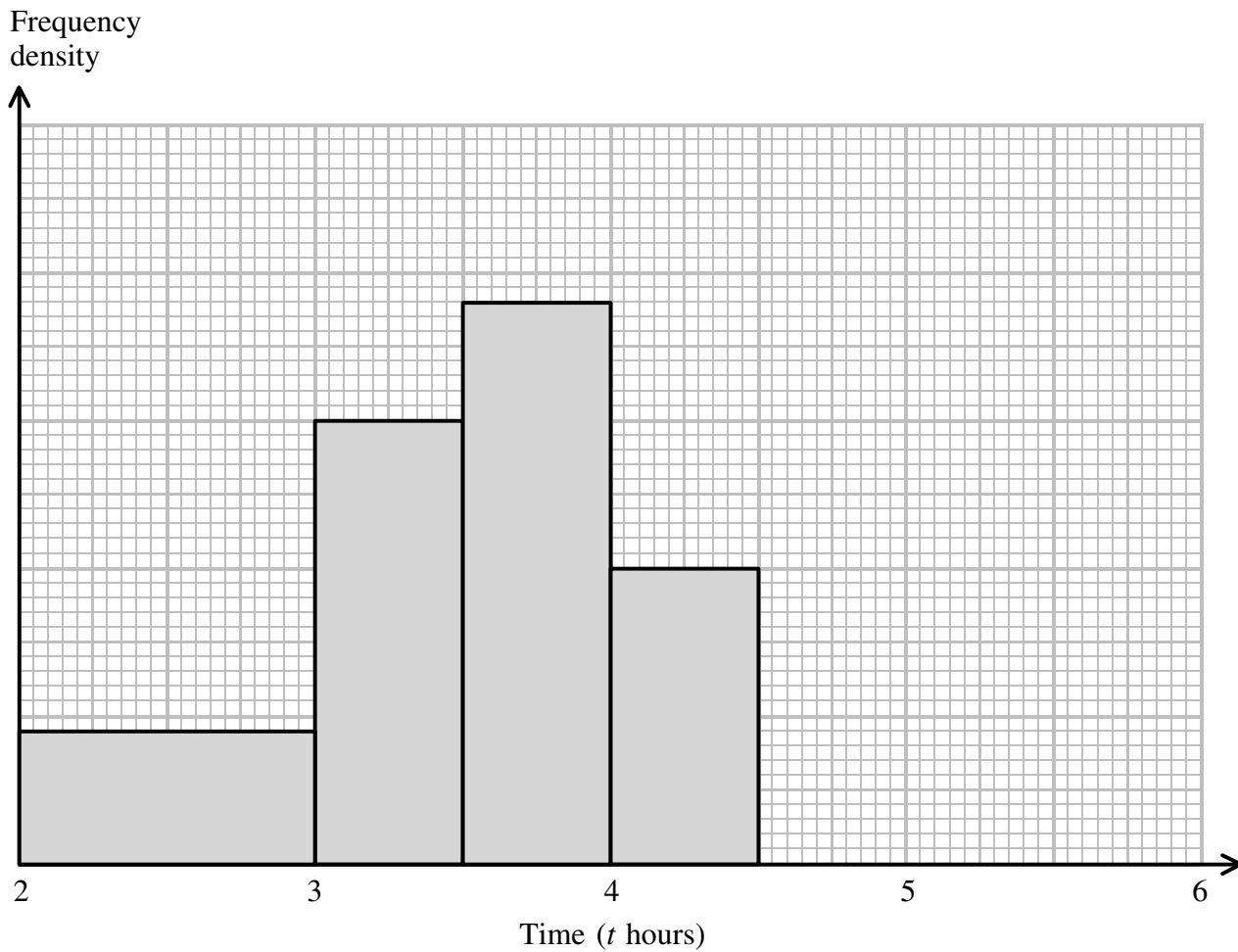| Weight (w kg)	Frequency
$0 < w \leqslant 1$	
$1 < w \leqslant 2.5$	36
$2.5 < w \leqslant 4$	57
$4 < w \leqslant 6$	24

(a) Use the information in the histogram to complete the table.

(1)

(b) Use the information in the table to complete the histogram.

(2)

8. [3 marks]

The unfinished histogram and table give information about the times, in hours, taken by runners to complete the Mathstown Marathon.

Frequency density

Time (*t* hours)

Time (*t* hours)	Frequency
$2 \leq t < 3$	
$3 \leq t < 3.5$	1200
$3.5 \leq t < 4$	
$4 \leq t < 4.5$	800
$4.5 \leq t < 6$	1440

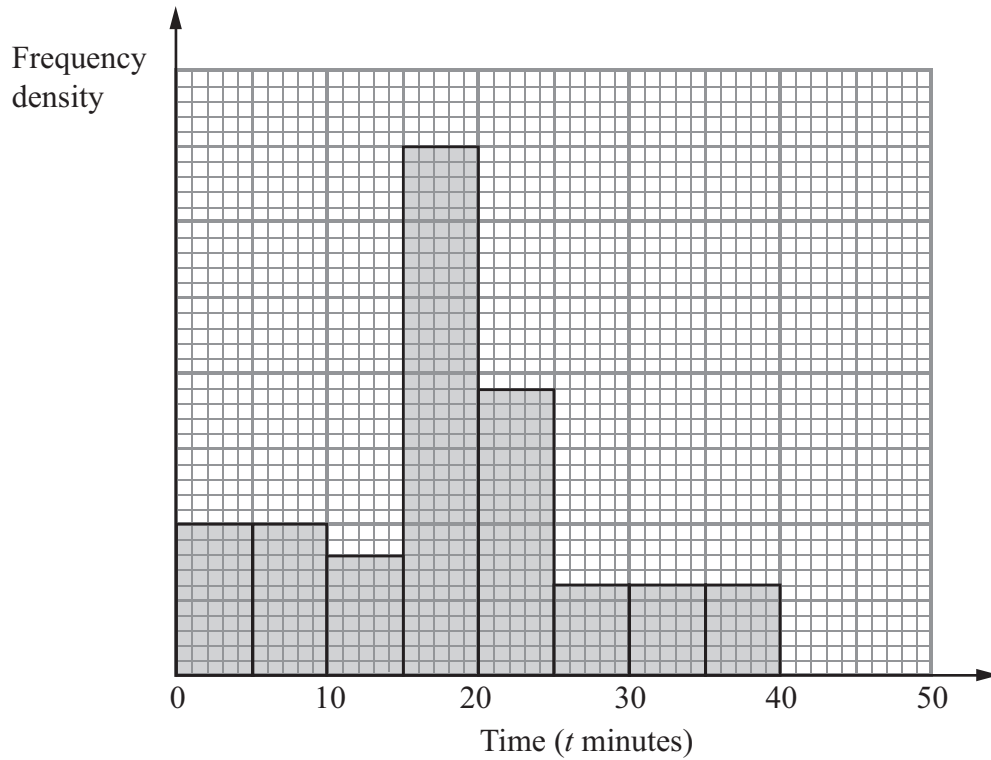(a) Use the histogram to complete the table.

(2)

(b) Use the table to complete the histogram.

(1)

The histogram shows information about the times, t minutes, patients spent at a doctors' surgery on one day.
No patient spent more than 40 minutes at the surgery.

Frequency density

Time (t minutes)

(a) Calculate the percentage of the patients who spent between 25 and 40 minutes at the surgery.
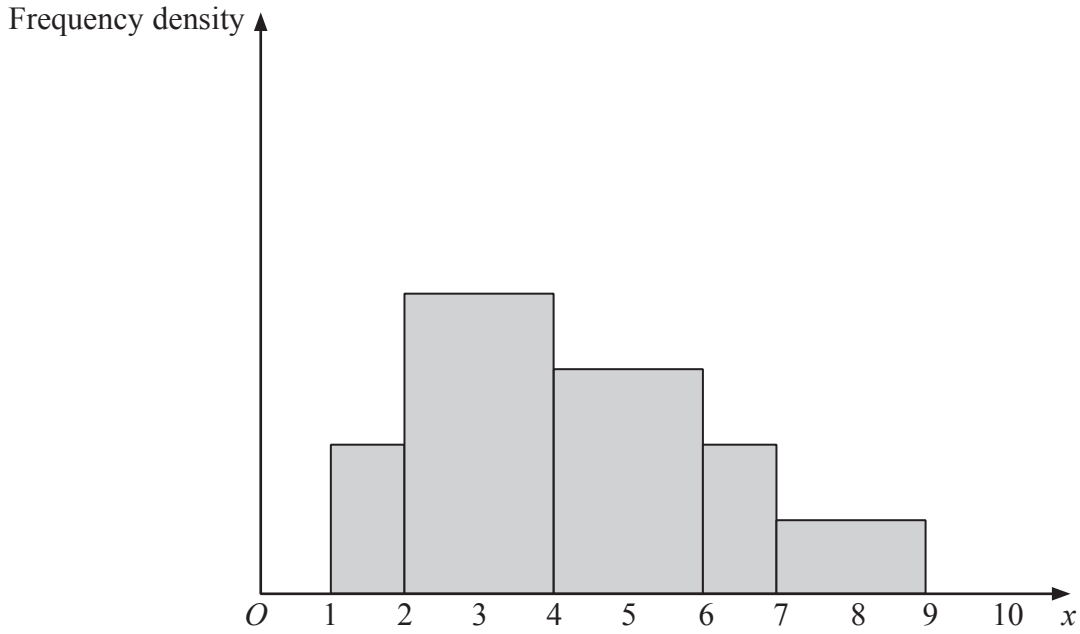
.... %

(3)

(b) 16 patients spent between 10 and 15 minutes at the surgery.

Calculate the total number of patients at the surgery that day.

....

(2)

. The histogram shows information about the heights, x cm, of some plants.
The histogram is drawn accurately.

Frequency density

(a) Calculate the percentage of values of x that lie between 2 and 4.

.... %
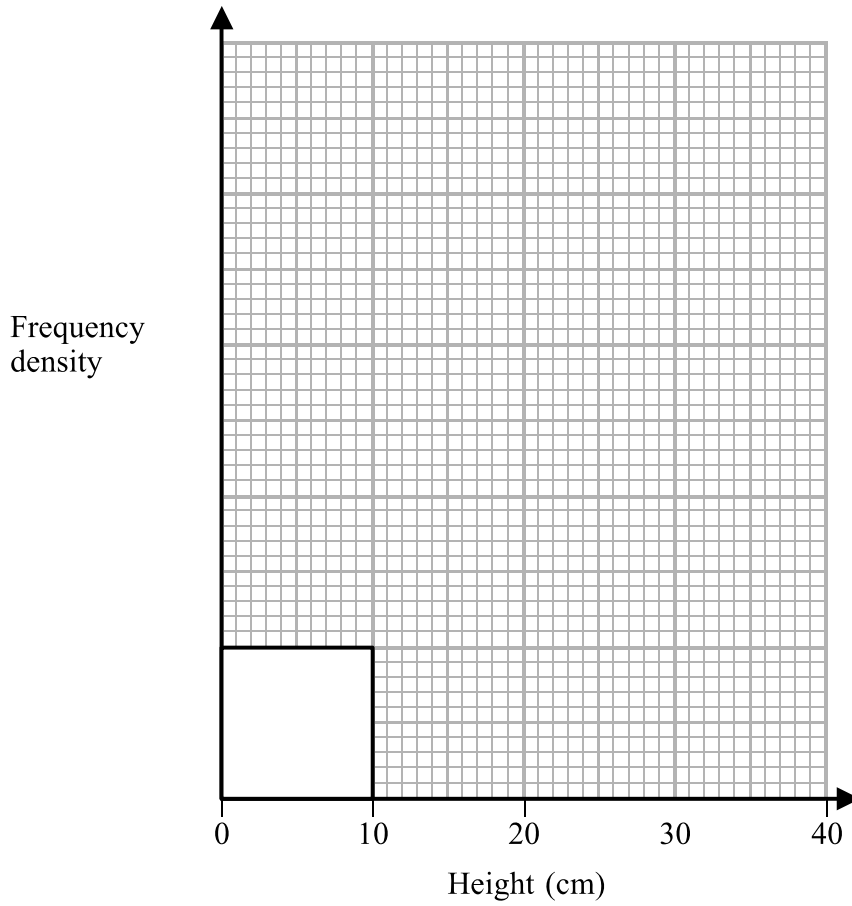
(3)

(b) Find the median of x.

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(2)

In an experiment, 52 plants were grown and their heights were measured.
The results are summarised in the table.

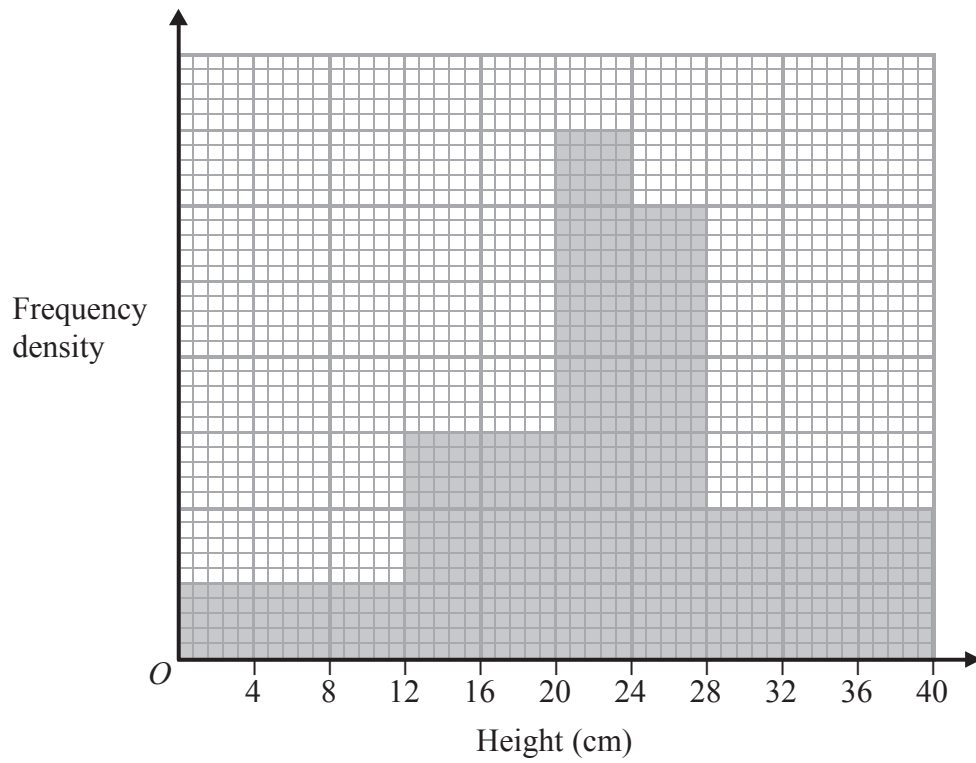| Height	$0 \leqslant h < 10$	$10 \leqslant h < 15$	$15 \leqslant h < 20$	$20 \leqslant h < 40$
Number of plants	10	20	14	8

(a) Complete the histogram for these results.

(4)

The plants with heights from 17.5 cm to 25 cm are chosen for a display.

(b) Calculate an estimate of the number of plants chosen for the display.

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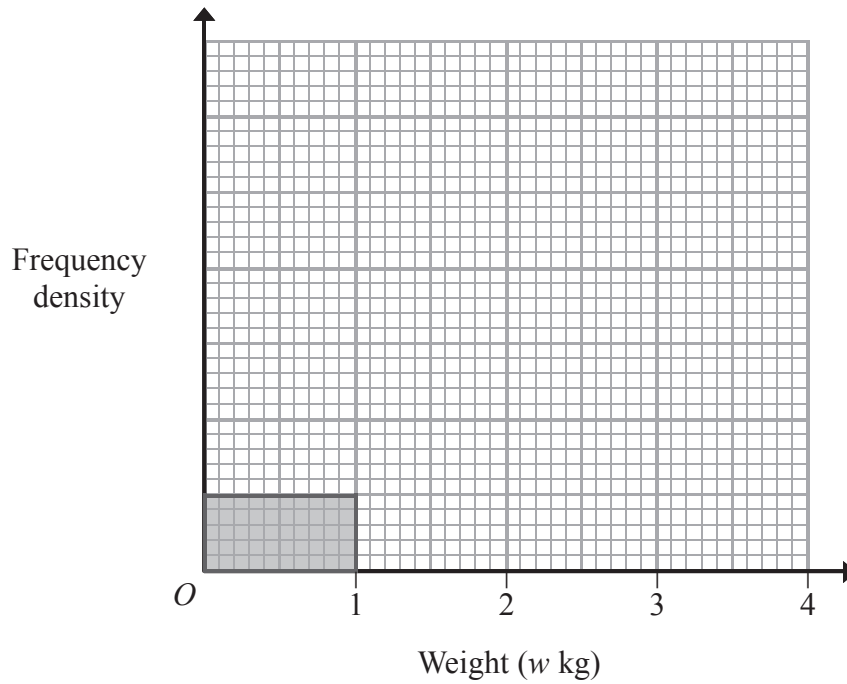**(2)**

The histogram gives information about the heights of some plants.

There are 360 plants with a height of 20 cm or less.

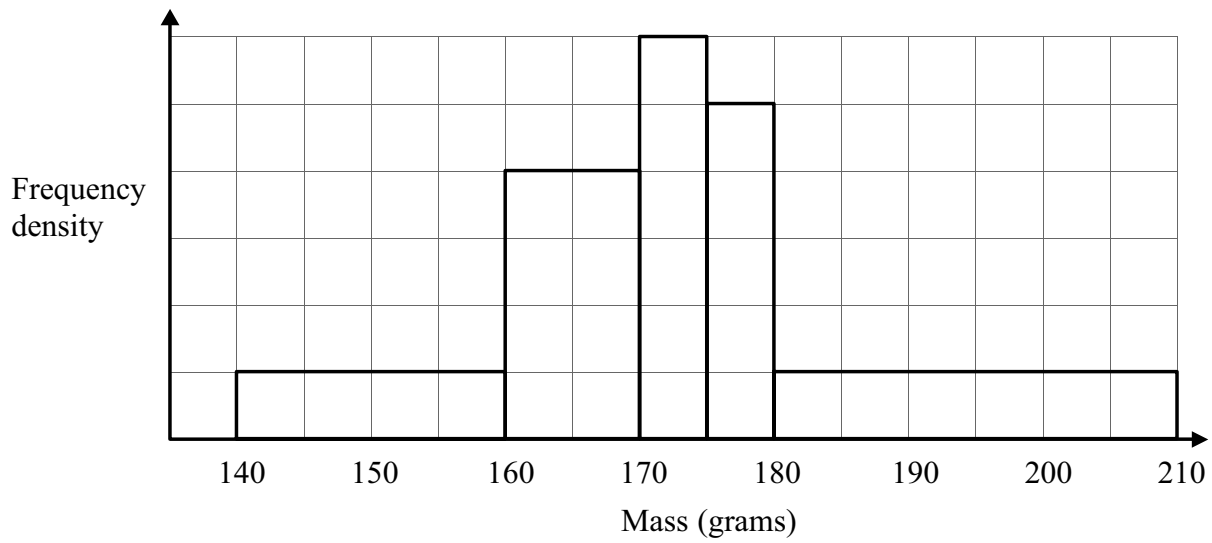Work out the number of plants with a height of more than 20 cm.

....

400 people are asked to guess the weight of a large cake.
The table shows information about the weights they guess.

Weight (w kg)	Number of guesses
$0 < w \leqslant 1$	50
$1 < w \leqslant 1.6$	90
$1.6 < w \leqslant 2$	120
$2 < w \leqslant 2.5$	95
$2.5 < w \leqslant 4$	45

Use the information in the table to complete the histogram.

Frequency
density

O   1   2   3   4

Weight (w kg)

The histogram gives information about the masses of some stones.

The number of stones in the $170\,\text{g} - 175\,\text{g}$ class is 24 more than the number of stones in the $140\,\text{g} - 160\,\text{g}$ class.

Calculate the total number of stones.

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The histogram shows information about the widths, w centimetres, of some leaves.

The number of leaves with widths in the class $3 < w \leqslant 4$ is 15

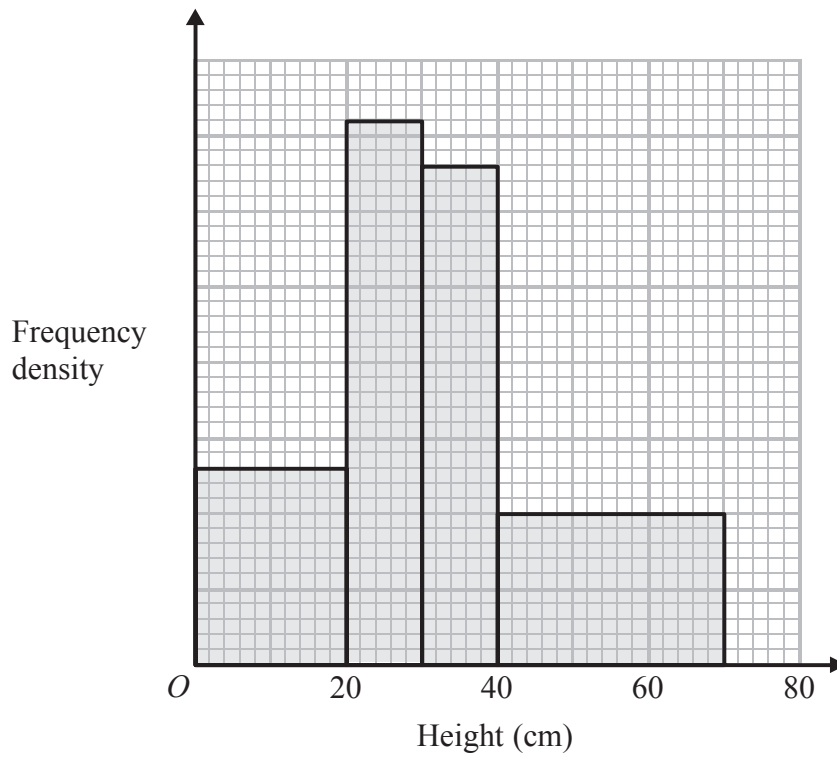(a) Find the number of leaves with widths in the class $0 < w \leqslant 2$

....
(2)

(b) Find an estimate of the number of leaves with widths in the range

$4.5 < w \leqslant 5.5$

....
(3)

The histogram shows information about the heights of some tomato plants.

26 plants have a height of less than 20 cm.

Work out the total number of tomato plants.

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