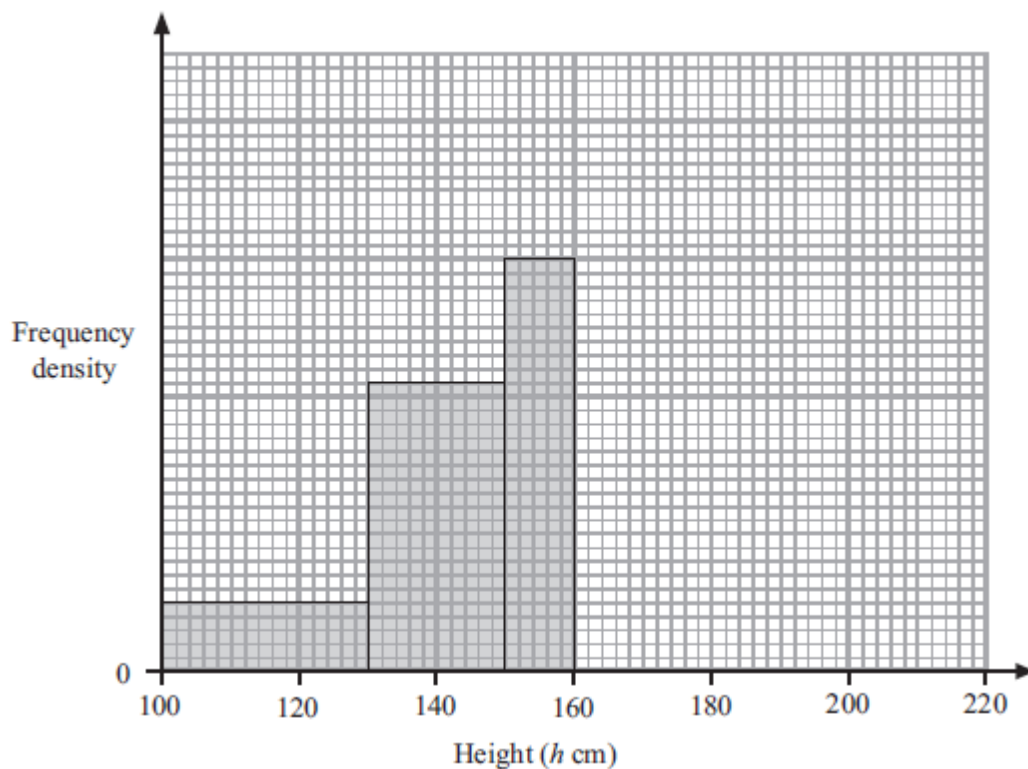


Histograms

Example: (June 2011) The incomplete table and histogram give some information about the heights (in cm) of some sunflowers.

Height (h cm)	Frequency
$100 < h \leq 130$	30
$130 < h \leq 150$	
$150 < h \leq 160$	
$160 < h \leq 180$	40
$180 < h \leq 210$	18



(a) Use the histogram to complete the table.

(2)

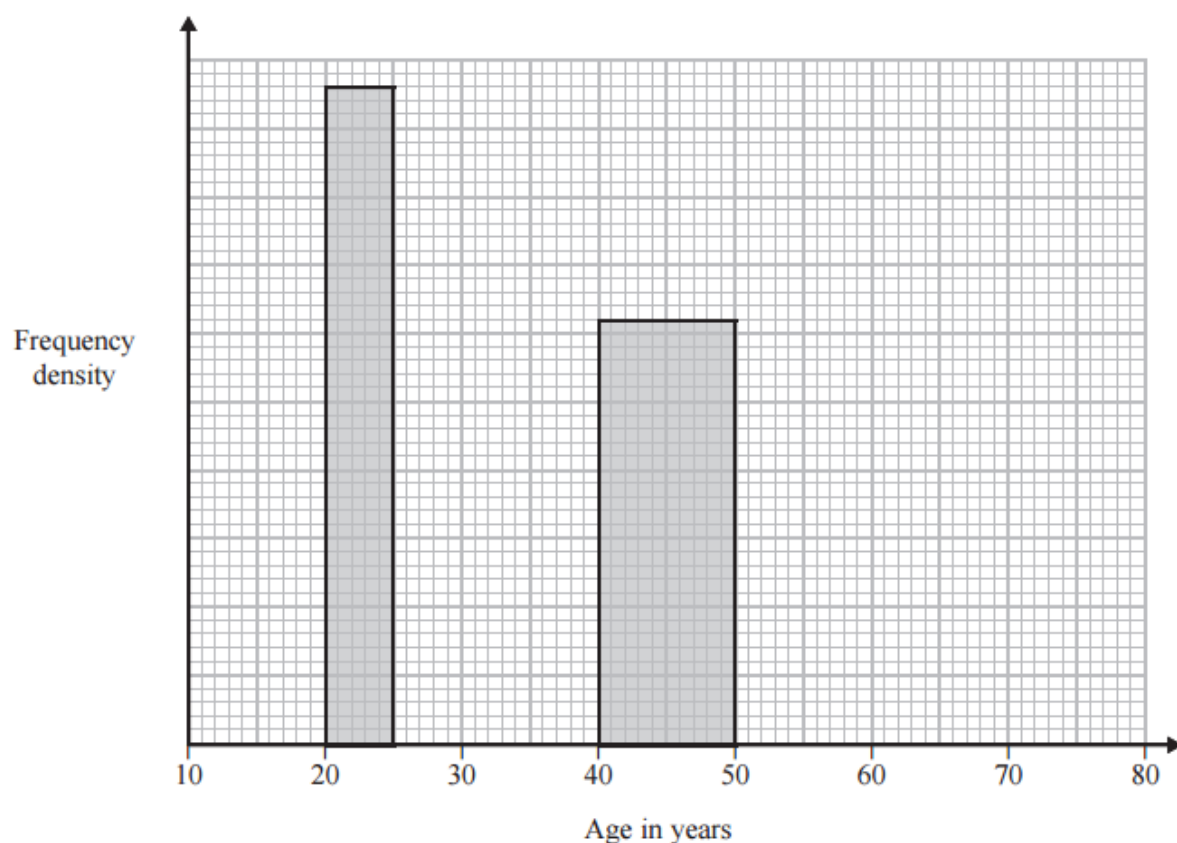
(b) Use the table to complete the histogram.

(2)

(Total 4 marks)

Test Your Understanding

The incomplete histogram and the incomplete table show information about the ages of people watching a film in a cinema.



Age (a years)	Number of people
$10 \leq a < 20$	38
$20 \leq a < 25$	24
$25 \leq a < 40$	63
$40 \leq a < 50$	
$50 \leq a < 80$	24

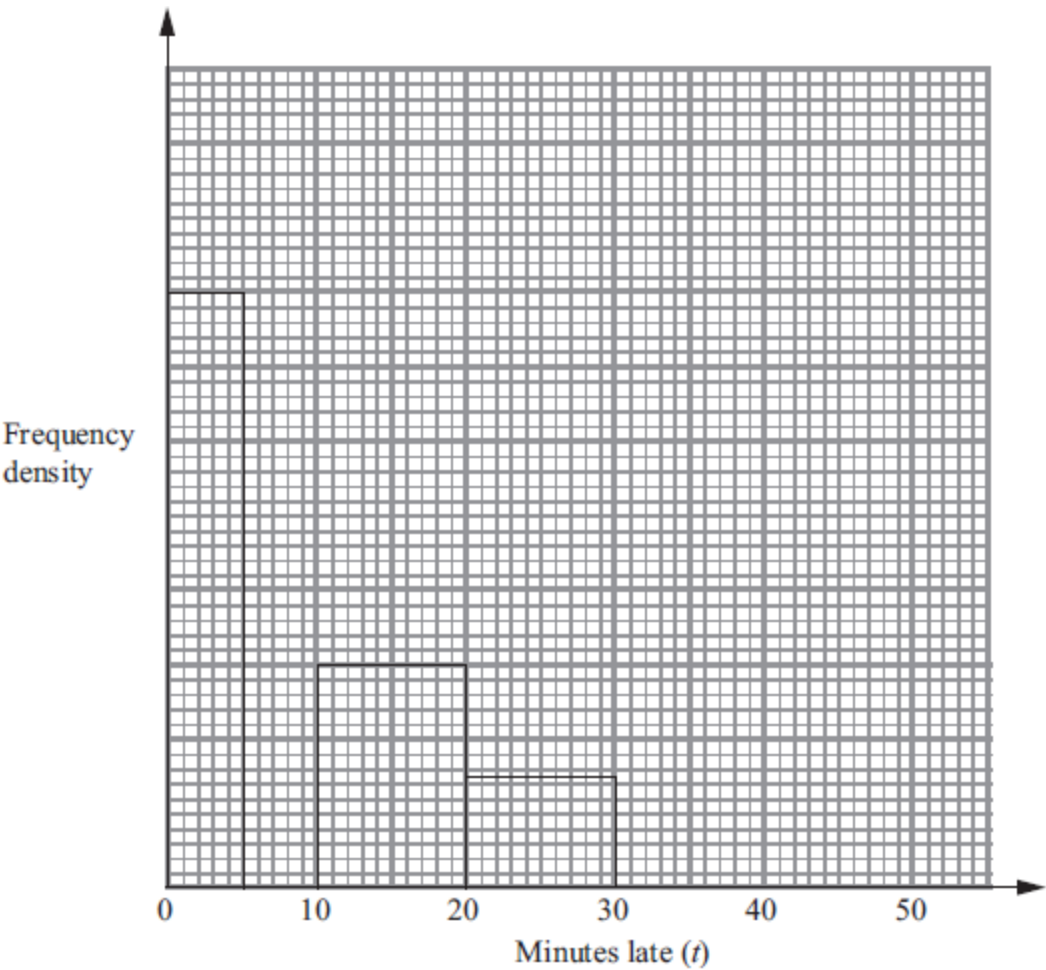
(a) Use the histogram to complete the table.

(b) Use the table to complete the histogram.

Exercise 1

- 1 Some trains from Manchester to London were late.
The incomplete table and histogram gives some information about how late the trains were.

Minutes late (t)	Frequency
$0 < t \leq 5$	16
$5 < t \leq 10$	10
$10 < t \leq 20$	
$20 < t \leq 30$	
$30 < t \leq 50$	8



- (a) Use the information in the histogram to complete the table. (2)
- (b) Use the information in the table to complete the histogram. (2)
- (Total 4 marks)

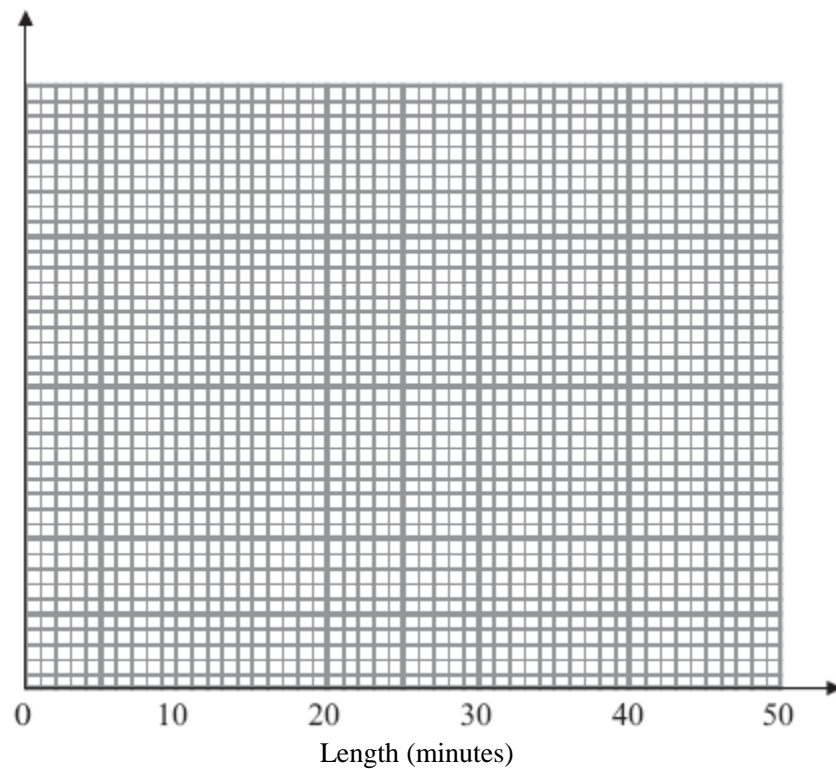
2. (May 2009).

A call centre receives 64 telephone calls one morning.

The table gives information about the lengths, in minutes, of these telephone calls.

Length (x) minutes	Frequency
$0 < x \leq 5$	4
$5 < x \leq 15$	10
$15 < x \leq 30$	24
$30 < x \leq 40$	20
$40 < x \leq 45$	6

Draw a histogram for this information.

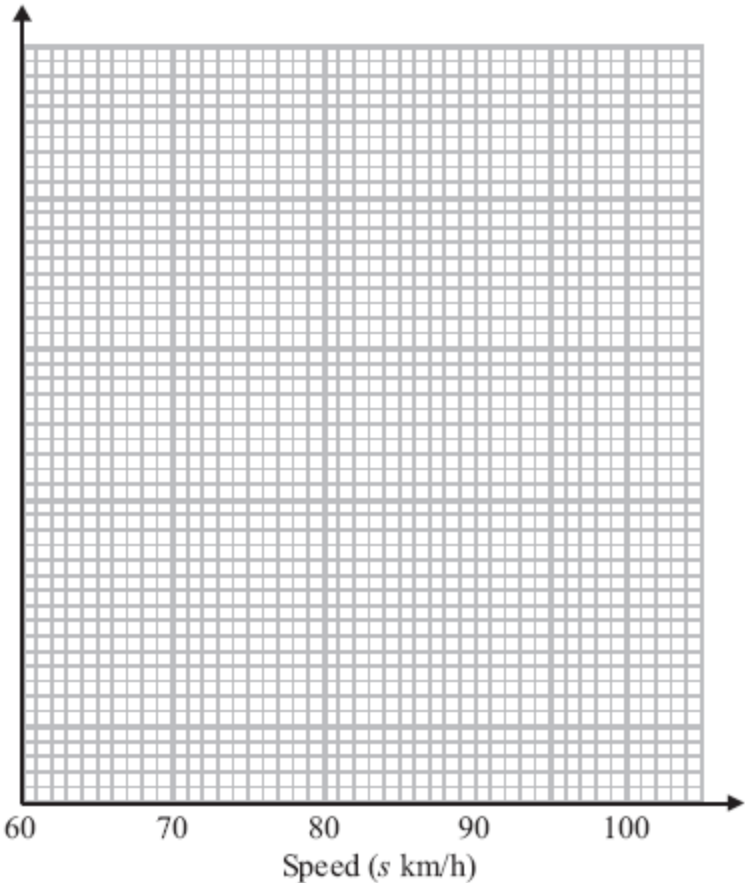


(Total 4 marks)

3 The table gives some information about the speeds, in km/h, of 100 cars.

Speed(s km/h)	Frequency
$60 < s \leq 65$	15
$65 < s \leq 70$	25
$70 < s \leq 80$	36
$80 < s \leq 100$	24

(a) On the grid, draw a histogram for the information in the table.



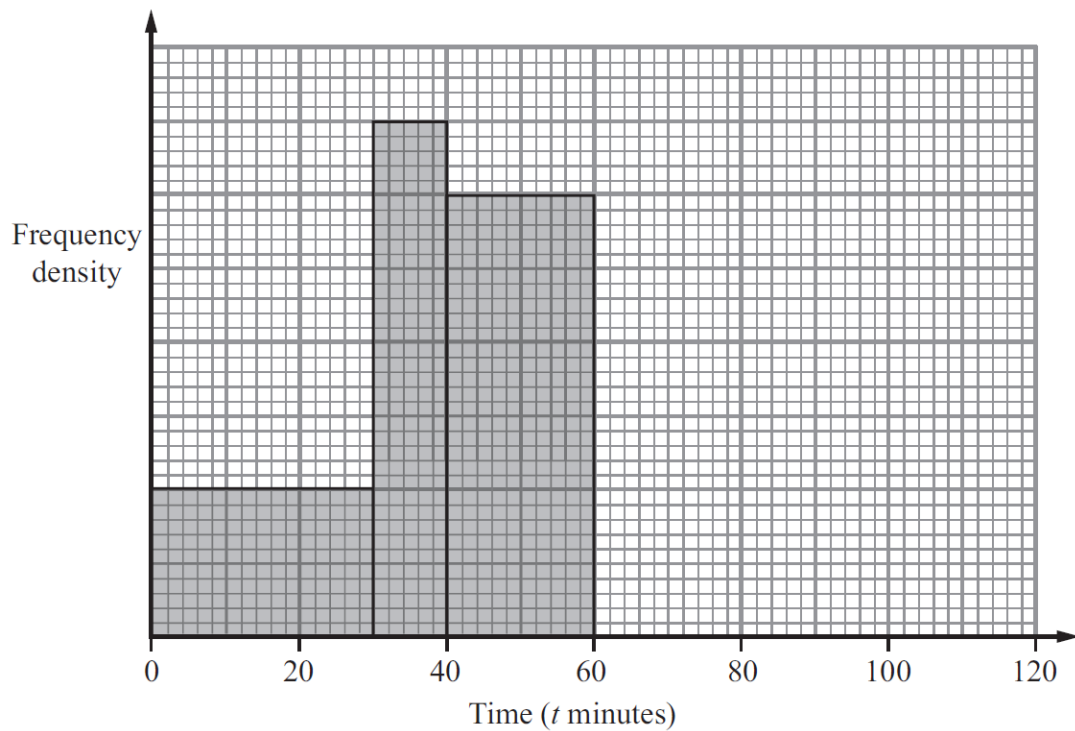
(3)

(b) Work out an estimate for the number of cars with a speed of more than 85 km/h.

.....
(2)

(Total for Question 14 is 5 marks)

- 4 The incomplete histogram and table give some information about the times, in minutes, that cars were parked in a car park.



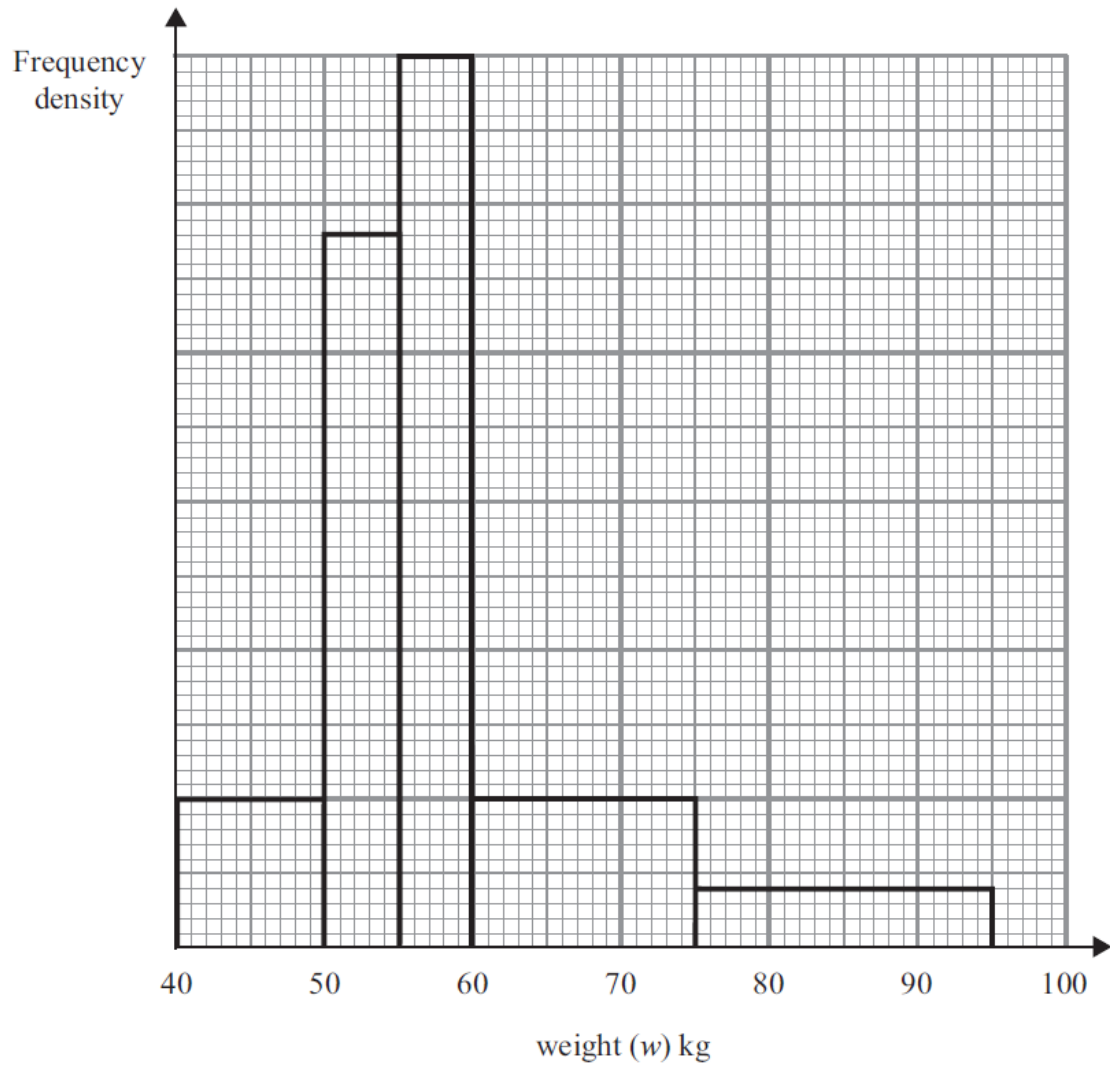
- (a) Use the information in the histogram to complete the frequency table.

Time (t minutes)	Frequency
$0 < t \leq 30$	
$30 < t \leq 40$	35
$40 < t \leq 60$	
$60 < t \leq 80$	30
$80 < t \leq 120$	20

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

5

The incomplete table and histogram give some information about the weights of people at a keep-fit session.



Use the information in the histogram to complete the frequency table.

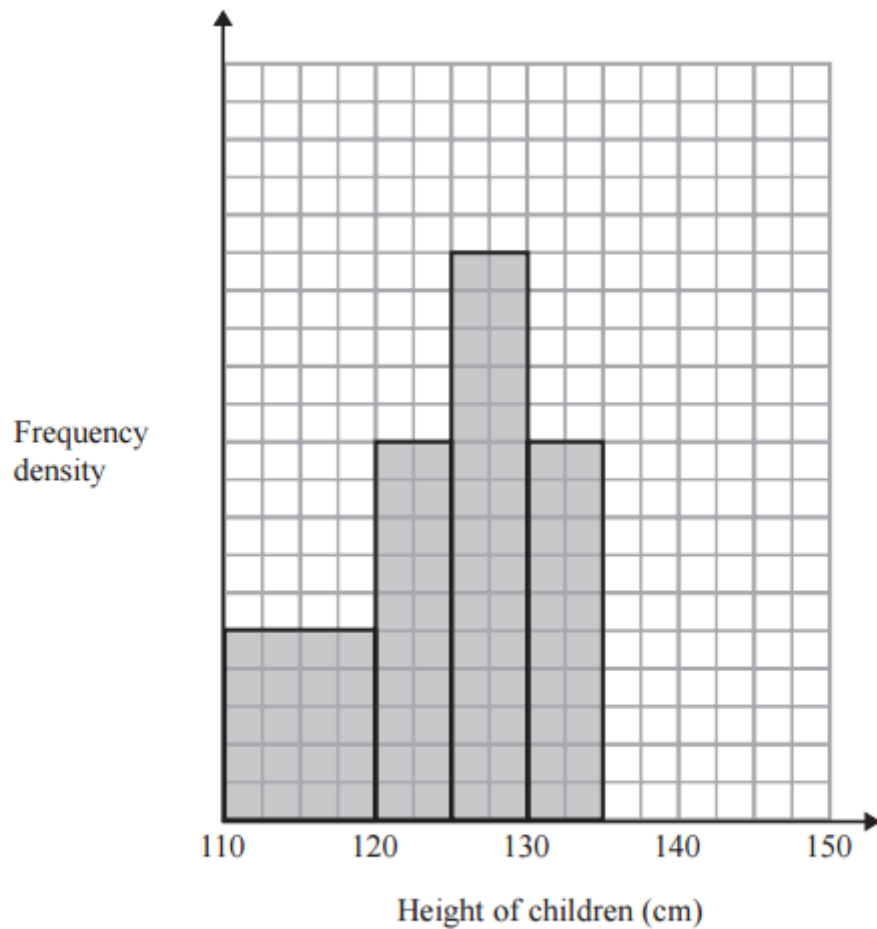
Weight (w) kg	Frequency
$40 \leq w < 50$	10
$50 \leq w < 55$	
$55 \leq w < 60$	
$60 \leq w < 75$	15
$75 \leq w < 95$	8

(Total 2 marks)

Section 2: Harder Histogram Questions

Example:

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



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

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

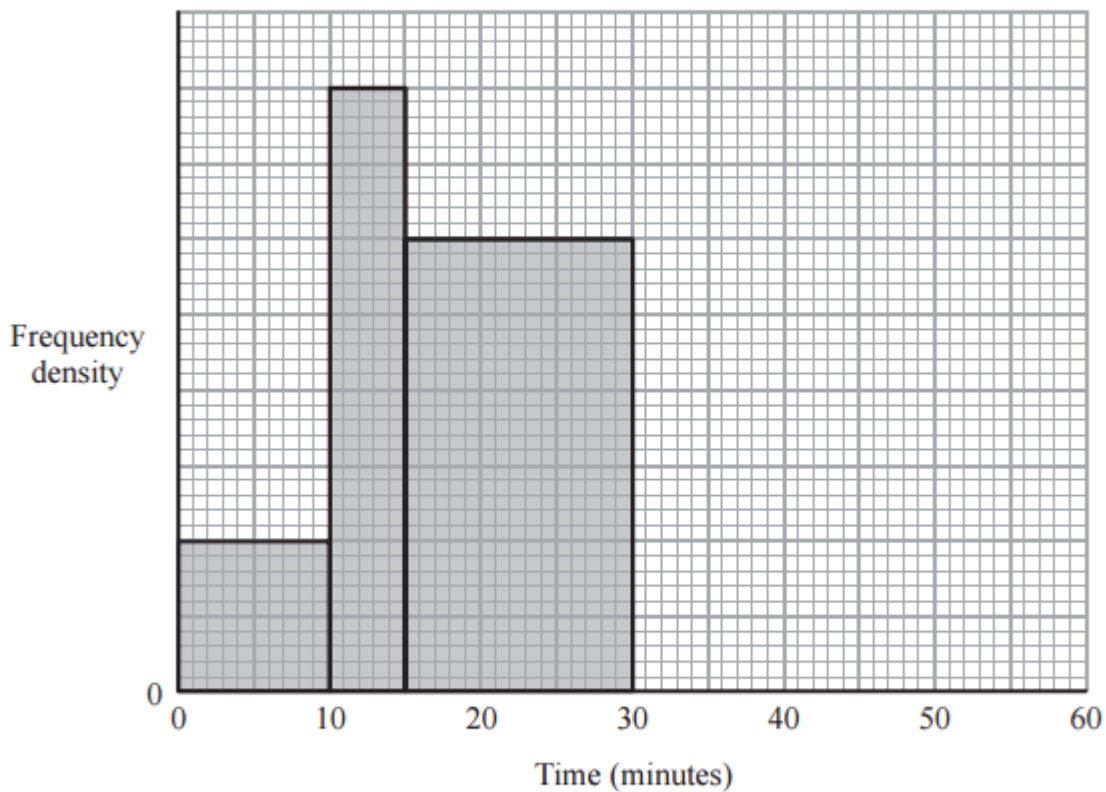
There were 6 children with heights between 135 cm and 145 cm.

(b) Show this information on the histogram.

Test Your Understanding:

Miss Cook asked each student in her class how long it took them, in minutes, to travel to school that morning.

The incomplete histogram shows information about the times it took the students who took no more than 30 minutes to travel to school.



9 students took between 15 minutes and 30 minutes to travel to school.

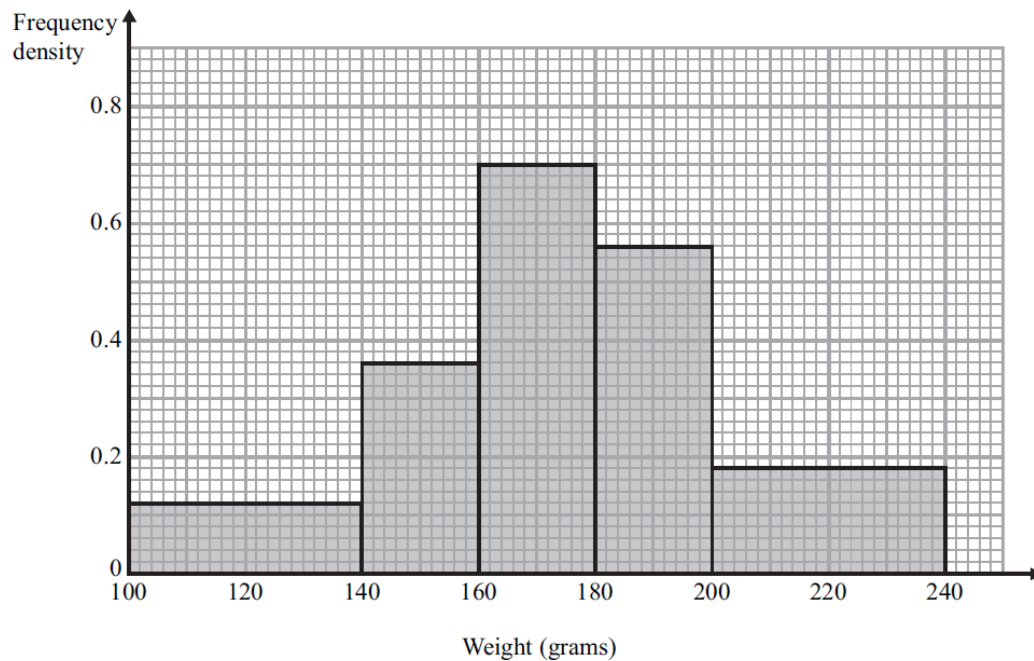
(a) How many students took no more than 30 minutes to travel to school?

12 students took between 30 and 55 minutes to travel to school.

(b) Use this information to complete the histogram.

Test Your Understanding

21 The histogram shows some information about the weights of a sample of apples.

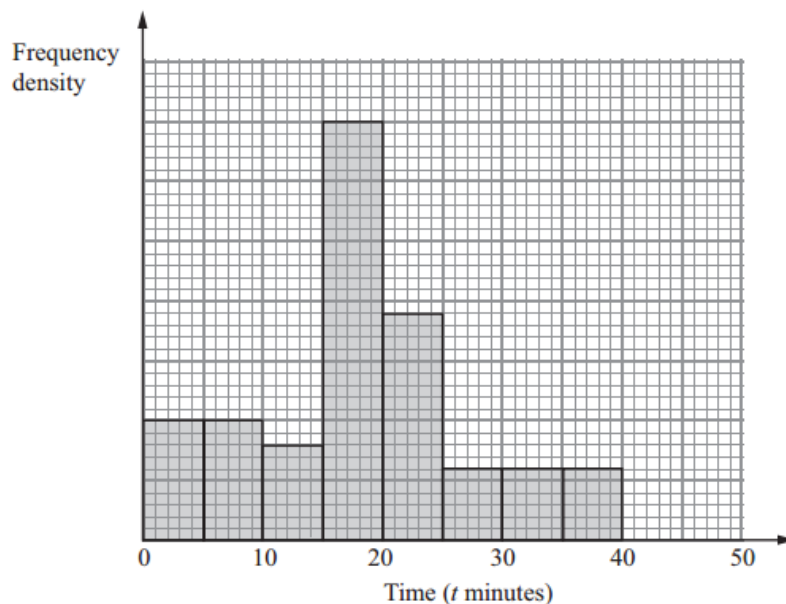


Work out the proportion of apples in the sample with a weight between 140 grams and 200 grams.

Question 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.

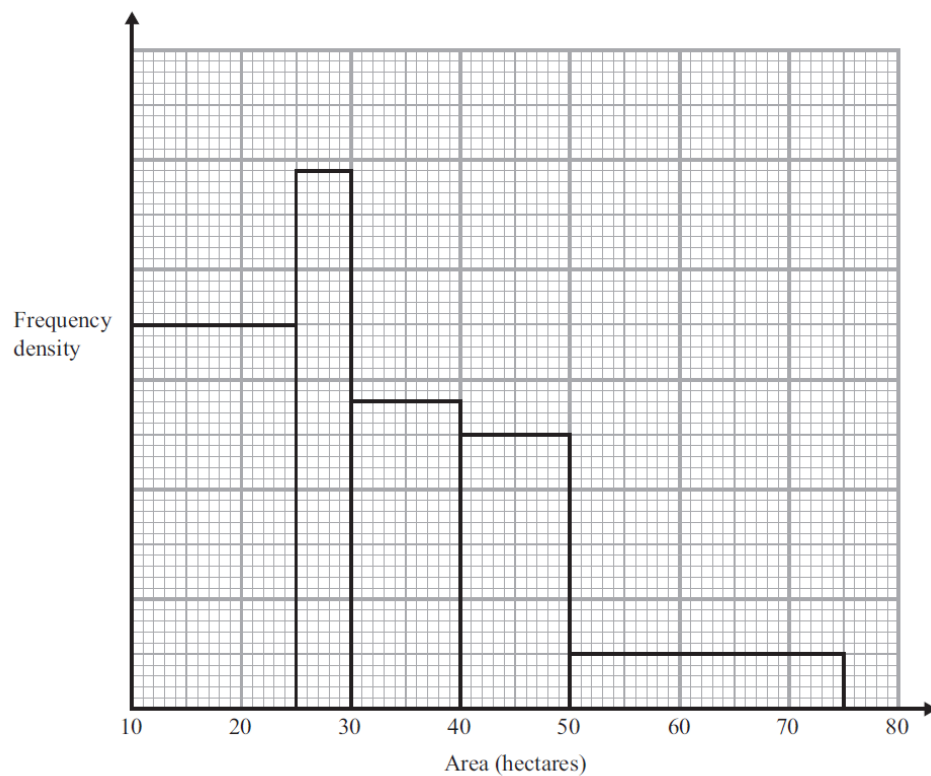


(a) Calculate the percentage of the patients who spent between 25 and 40 minutes at the surgery.

(b) 16 patients spent between 10 and 15 minutes at the surgery.
Calculate the total number of patients at the surgery that day.

Question 2

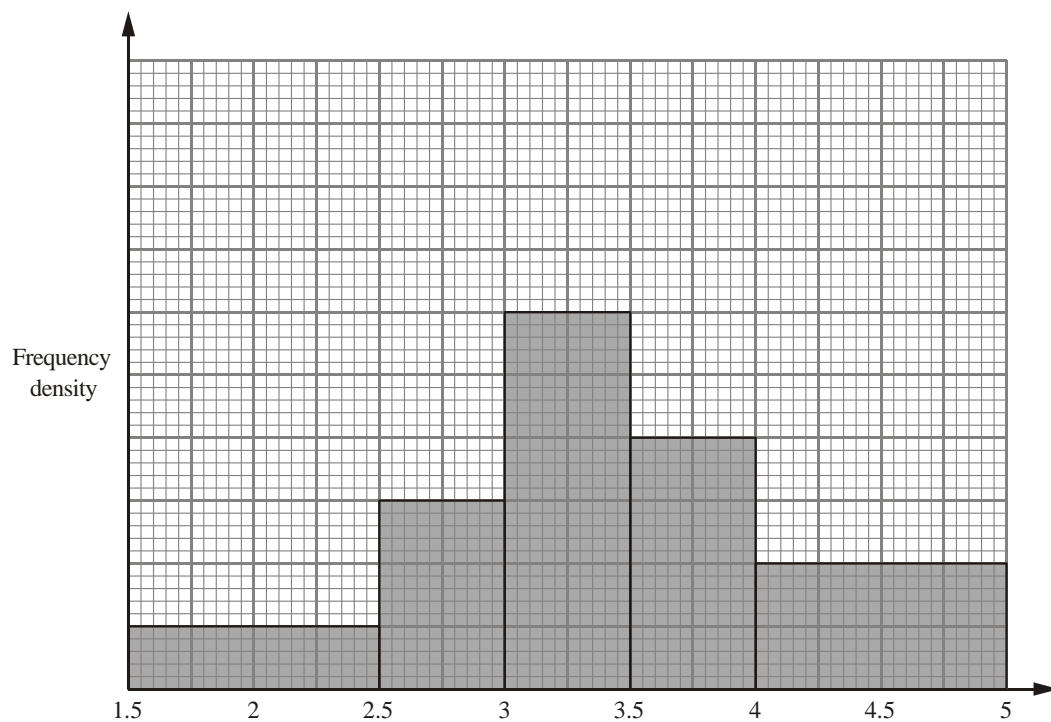
7. The histogram gives information about the areas of 285 farms.



Work out an estimate for the number of these farms with an area greater than 38 hectares.

Question 3

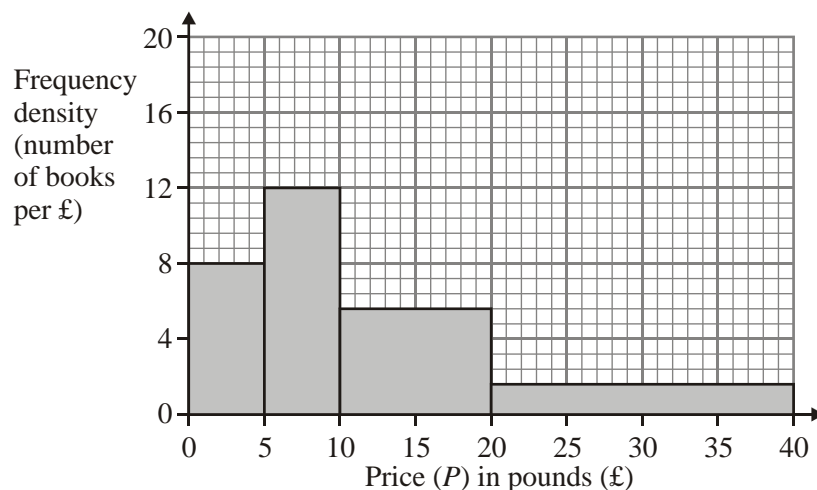
The histogram shows information about the lifetime of some batteries.



Two of the batteries had a lifetime of between 1.5 and 2.5 years. Find the total number of batteries.

Question 4

This histogram gives information about the books sold in a bookshop one Saturday.



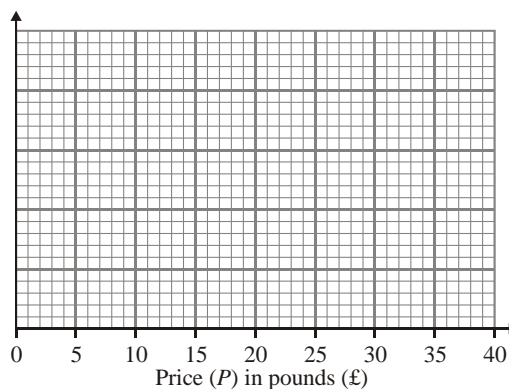
- (a) Use the histogram to complete the table.

Price (P) in pounds (£)	Frequency
$0 < P \leq 5$	
$5 < P \leq 10$	
$10 < P \leq 20$	
$20 < P \leq 40$	

The frequency table below gives information about the books sold in a second bookshop on the same Saturday.

Price (P) in pounds (£)	Frequency
$0 < P \leq 5$	80
$5 < P \leq 10$	20
$10 < P \leq 20$	24
$20 < P \leq 40$	96

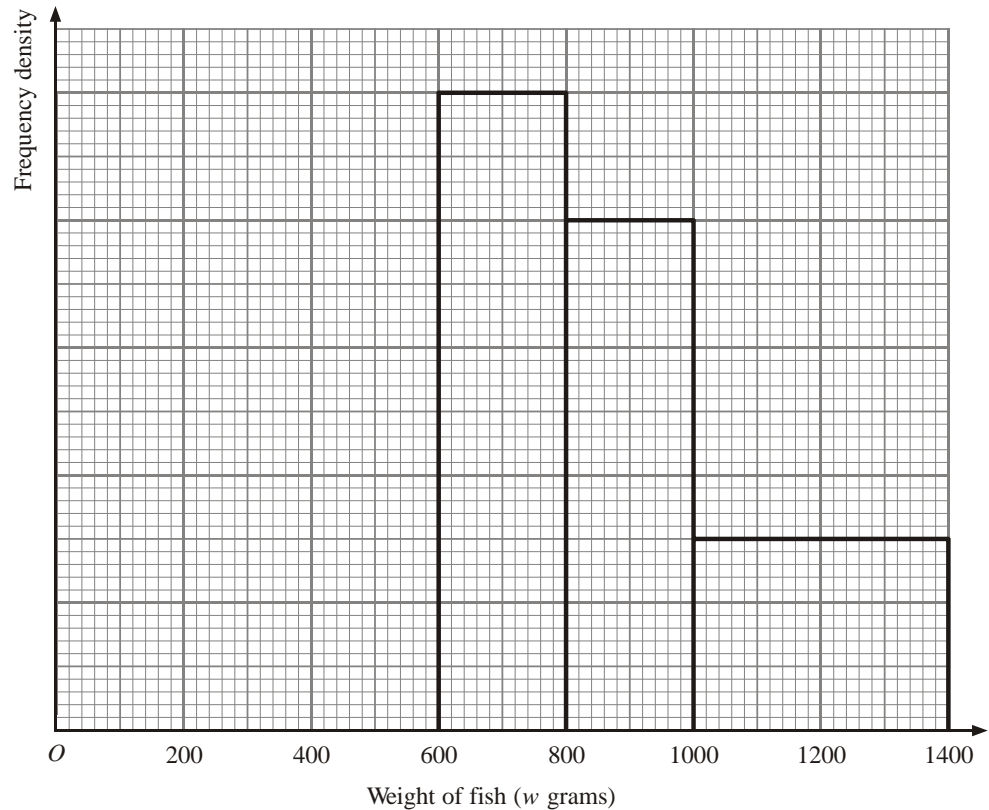
- (b) On the grid below, draw a histogram to represent the information about the books sold in the second bookshop.



5. The unfinished table and histogram show information about the weight, w grams, of fish that Alan caught each day.

Weight (w grams)	Frequency
$0 < w \leq 400$	8
$400 < w \leq 600$	5
$600 < w \leq 800$	10
$800 < w \leq 1000$	
$1000 < w \leq 1400$	

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



(2)

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

(2)

(Total 4 marks)