Solutions by
Kenneth Stafford
MATHS TUTOR
ken@kennethstafford.co.uk

GCSE (9-1) Grade7

Histograms

Instructions

Use **black** ink or ball-point pen.
Fill in the boxes at the top of this page with your name.
Answer **all** questions.
Answer the questions in the spaces provided
- there may be more space than you need.

Show all your working out

Information

The marks for **each** question are shown in brackets.
use this as a guide as to how much time to spend on each question.
Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed

Advice

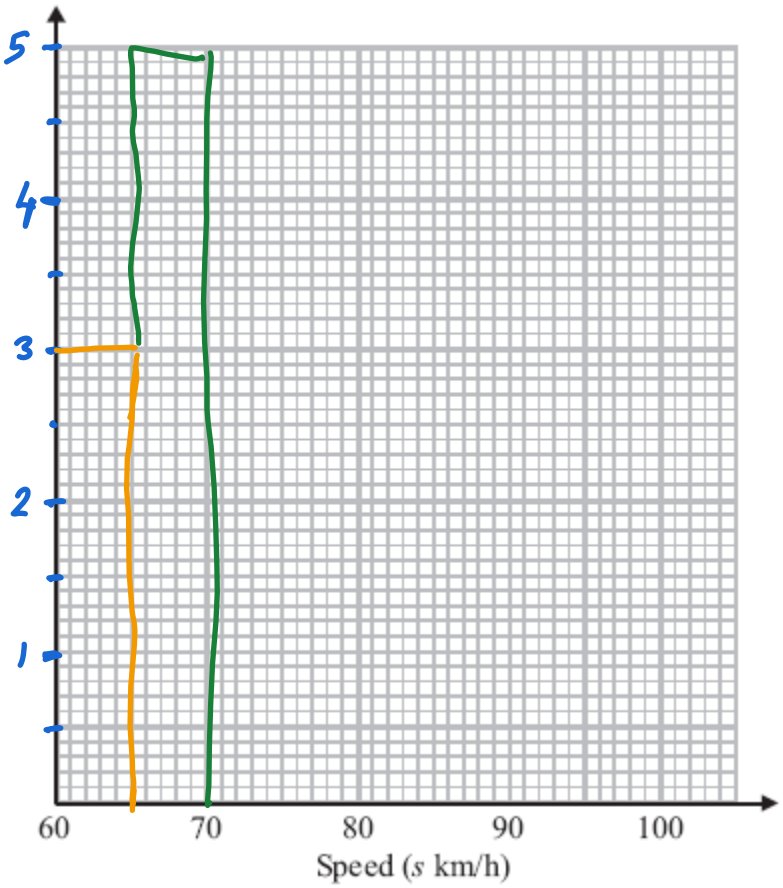
Read each question carefully before you start to answer it
Attempt every question
Check your answers if you have time at the end

1. 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

$15 \div 5 = 3$
$25 \div 5 = 5$
$36 \div 10 = 3.6$
$24 \div 20 = 1.2$

(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.

.....

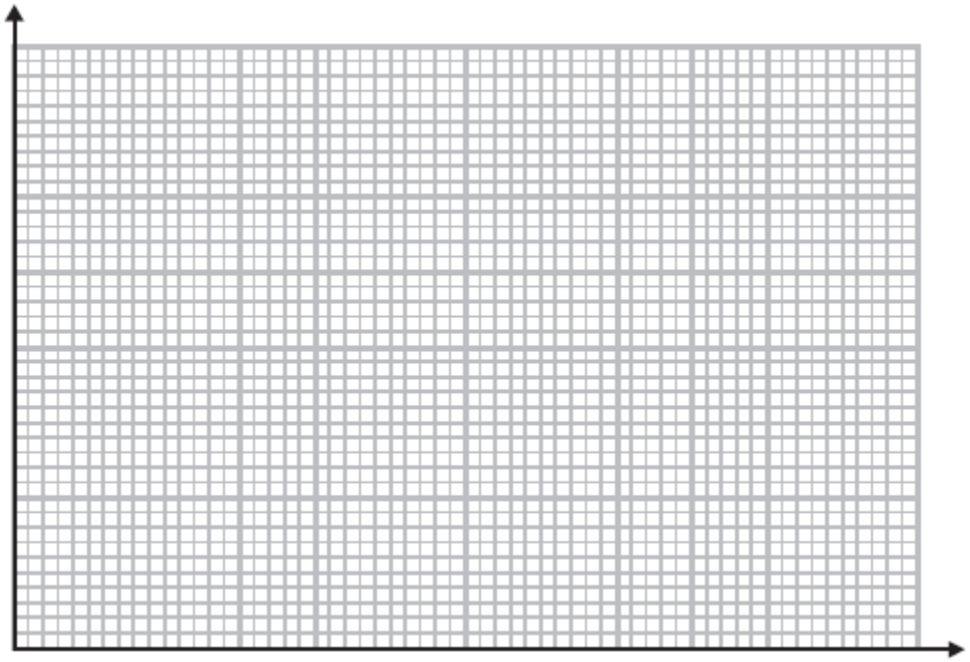
(2)

(5 marks)

2. The table gives information about the heights, h metres, of trees in a wood.

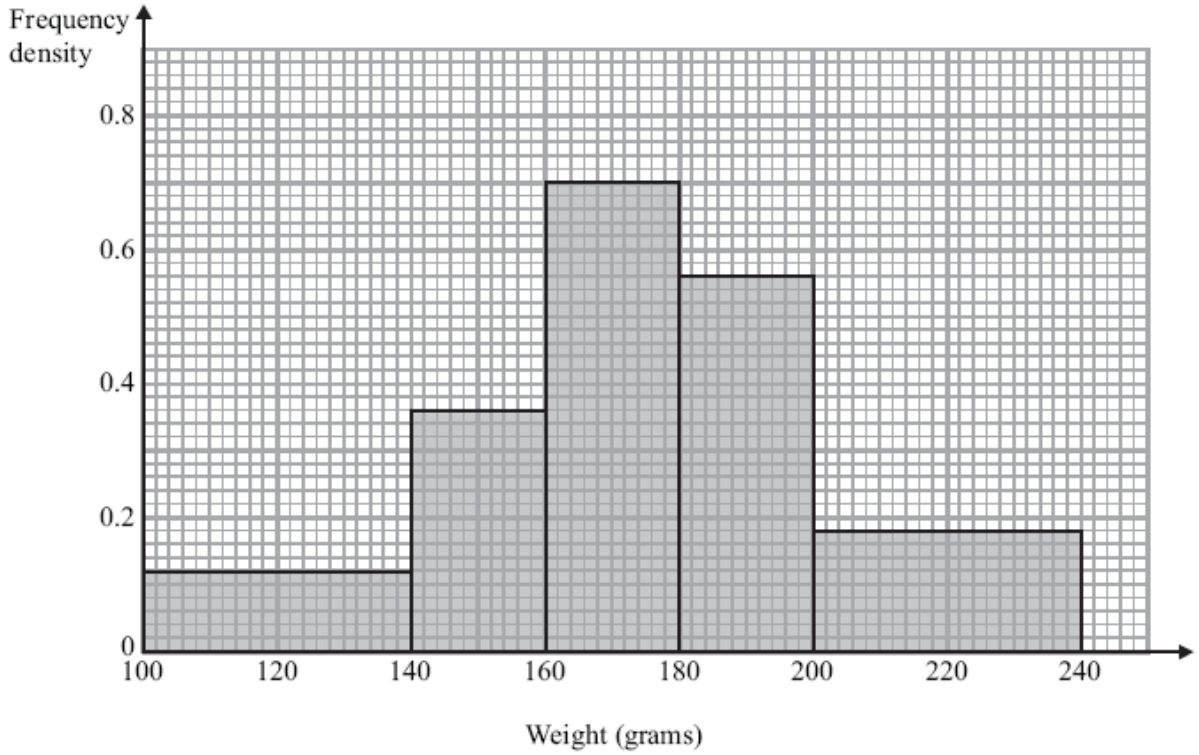
Height (h metres)	**Frequency**
$0 < h \leq 2$	7
$2 < h \leq 4$	14
$4 < h \leq 8$	18
$8 < h \leq 16$	24
$16 < h \leq 20$	10

Draw a histogram to show this information.



(3 marks)

3. 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.

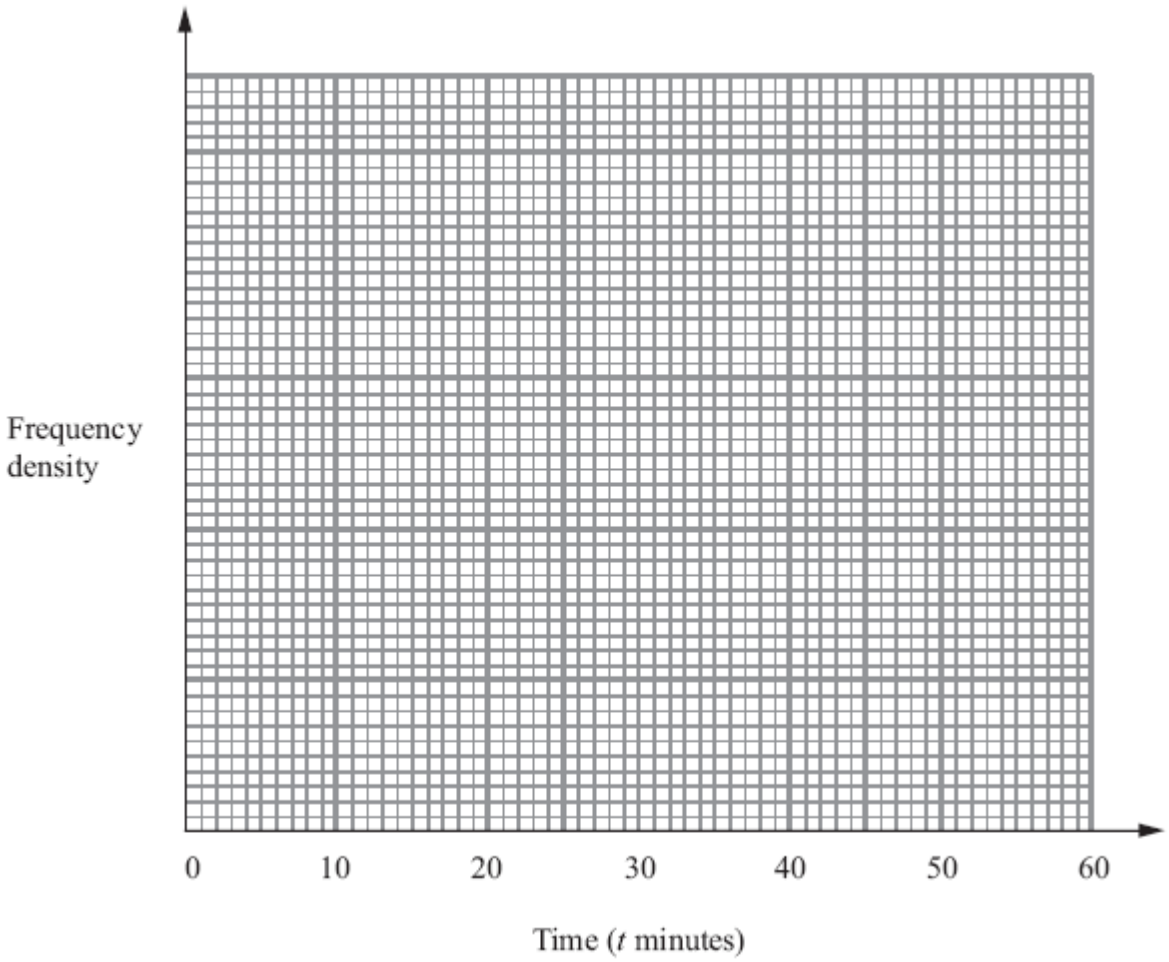
.....

(4 marks)

4. The table shows information about the lengths of time, t minutes, it took some students to do their maths homework last week.

Time (t minutes)	**Frequency**
$0 < t \leq 10$	4
$10 < t \leq 15$	8
$15 < t \leq 20$	24
$20 < t \leq 30$	16
$30 < t \leq 50$	5

Draw a histogram for this information.

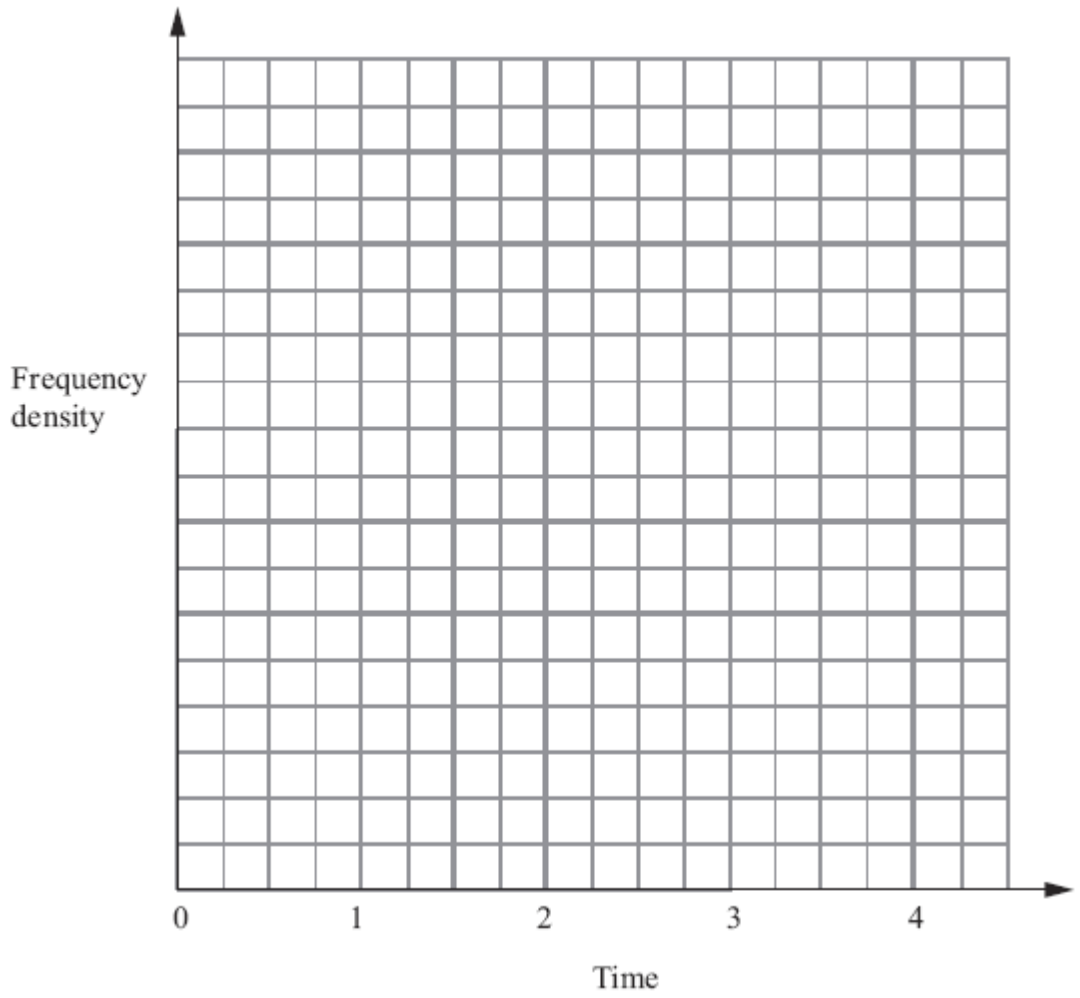


(Total 3 marks)

5. The table shows information about the total times that 35 students spent using their mobile phones one week.

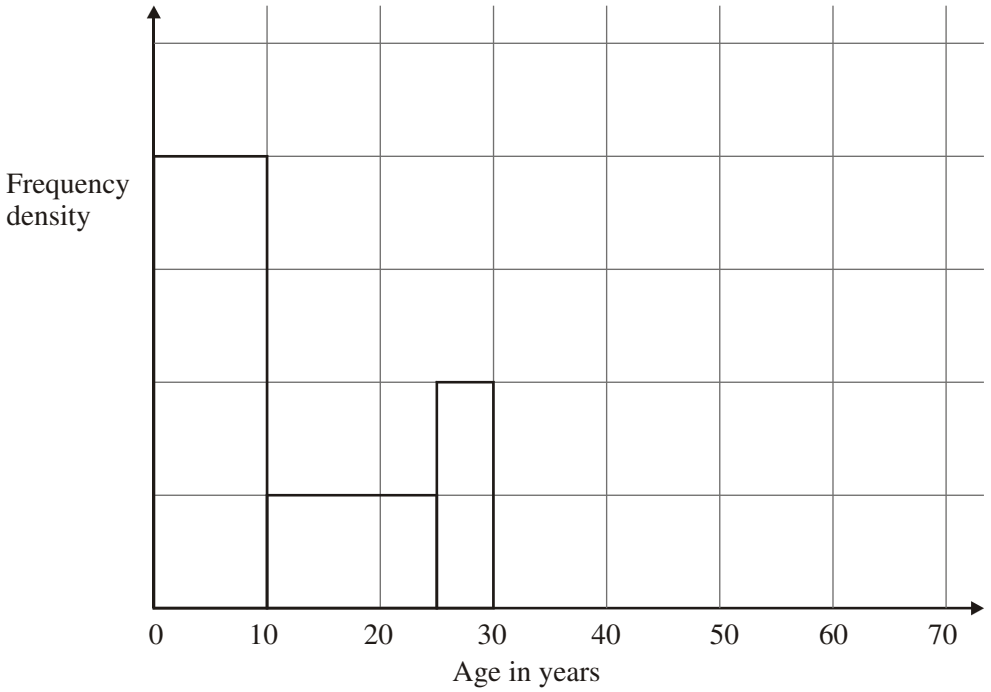
Time (h hours)	Frequency
$0 \leqslant h < \frac{1}{2}$	8
$\frac{1}{2} \leqslant h < 1$	7
$1 \leqslant h < 2$	11
$2 \leqslant h < 4$	9

On the grid below, draw a histogram for this information.



(Total for Question 23 = 3 marks)

6. The incomplete table and histogram give some information about the ages of the people who live in a village.



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

Age (x) in years	**Frequency**
$0 < x \leq 10$	160
$10 < x \leq 25$	
$25 < x \leq 30$	
$30 < x \leq 40$	100
$40 < x \leq 70$	120

(2)

(b) Complete the histogram.

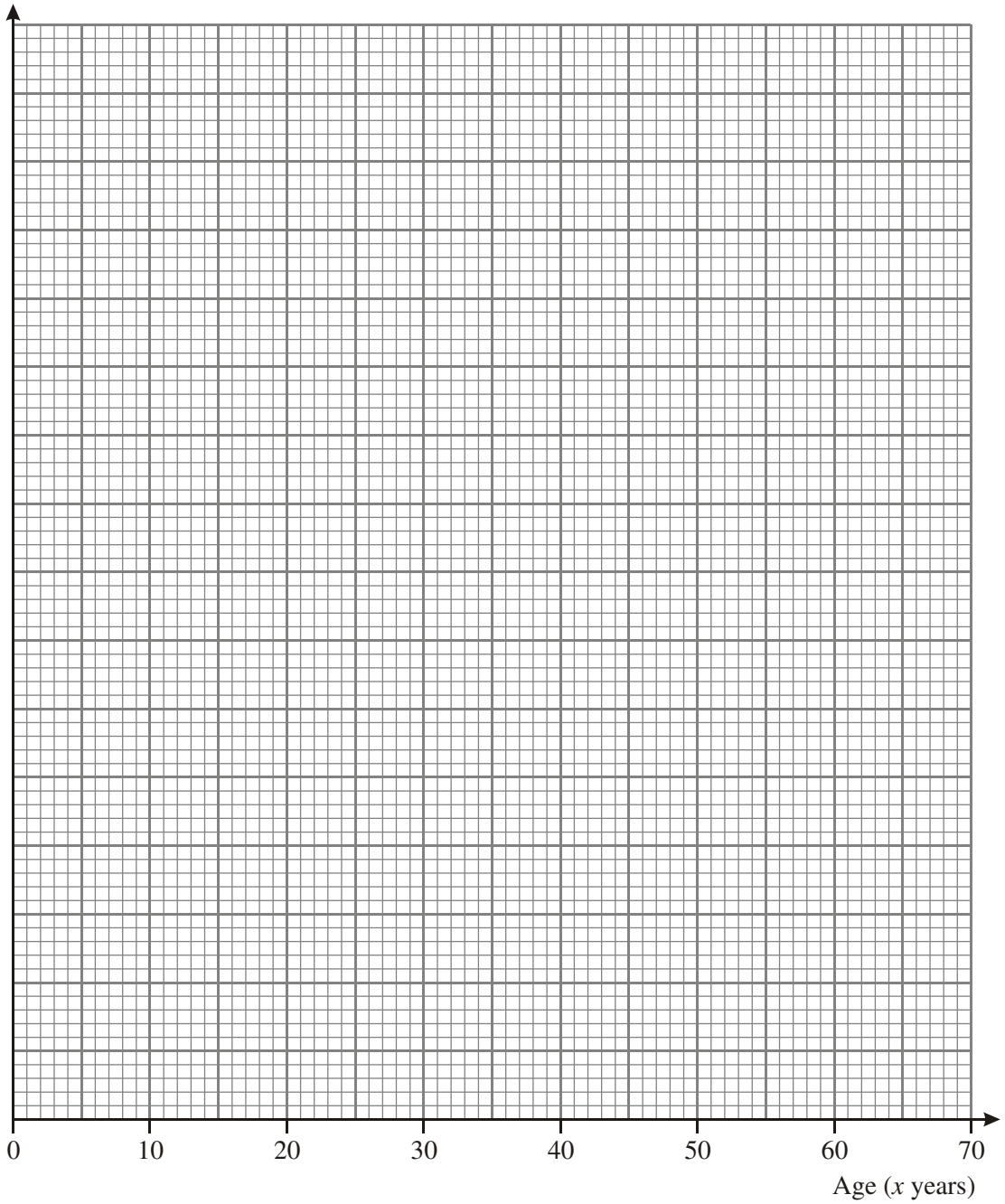
(2)

(Total 4 marks)

7. The table shows the distribution of the ages of passengers travelling on a plane from London to Belfast.

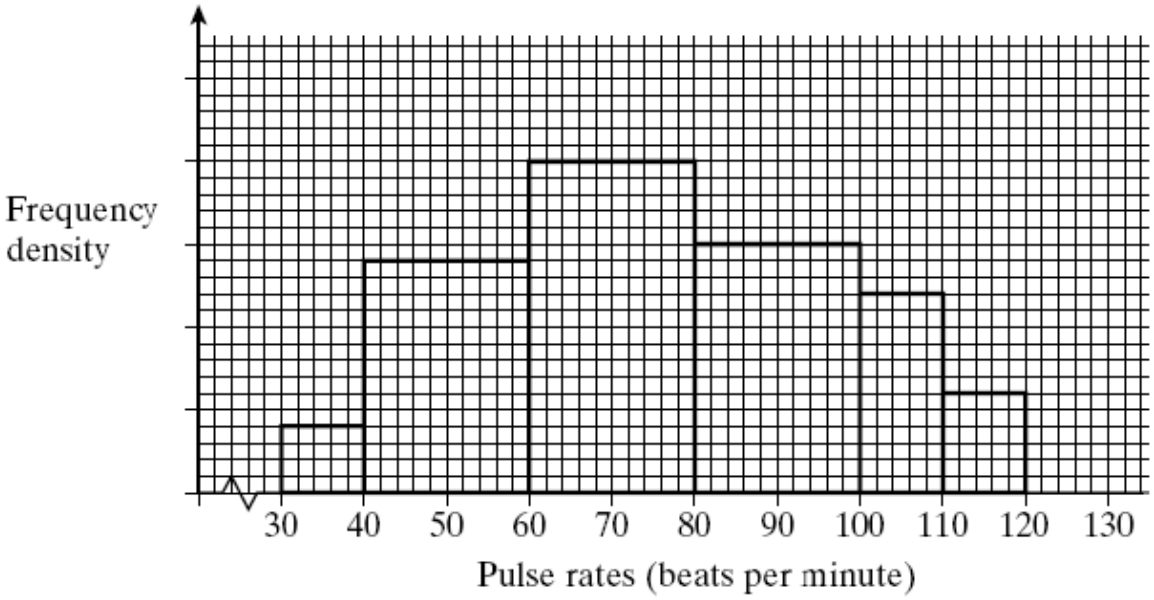
Age (x years)	Frequency
$0 < x \leq 20$	28
$20 < x \leq 35$	36
$35 < x \leq 45$	20
$45 < x \leq 65$	30

On the grid below, draw a histogram to show this distribution.



(Total 3 marks)

8. This histogram shows the pulse rates of some of the members of a health club.



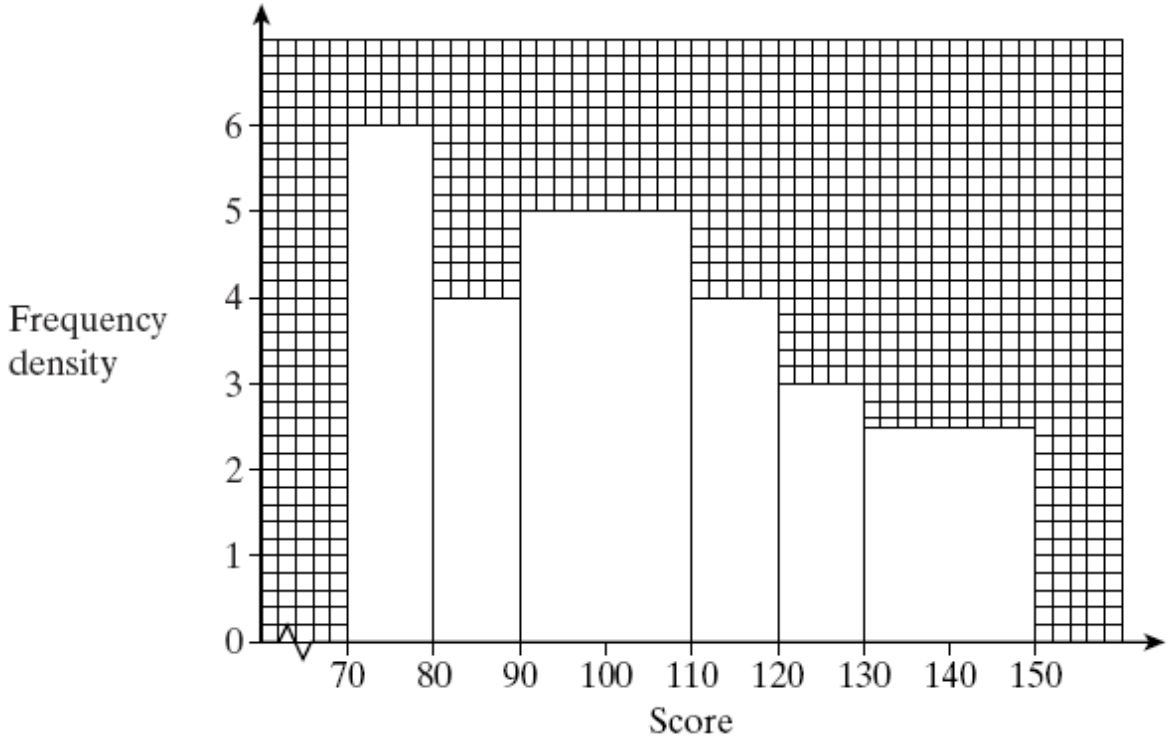
60 of the members have a pulse rate lower than 50 beats per minute.

How many members have a pulse rate greater than 90 beats per minute?

.....

(Total 4 marks)

9. The histogram below shows the test scores of 320 children in a school.



(a) Find the median score.

.....

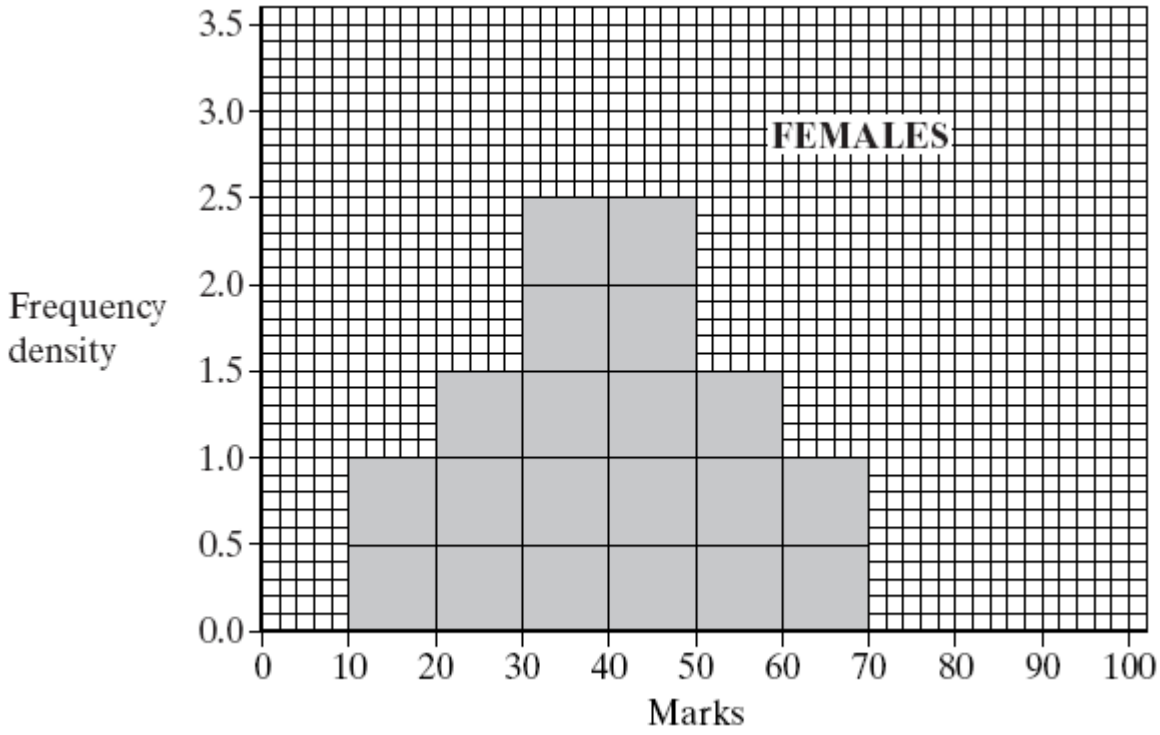
(Total 2 marks)

(b) Find the interquartile range of the scores.

.....

(Total 2 marks)

10. The histogram below shows the test scores of 100 female students.



(a) What is the median score?

.....

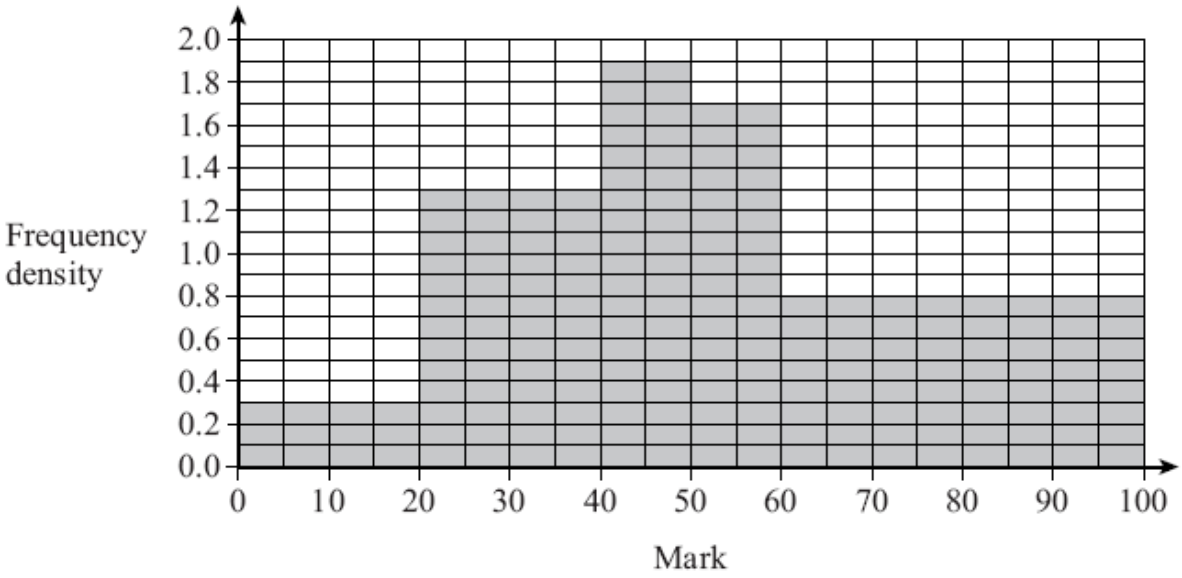
(Total 2 marks)

b) What is the interquartile range?

.....

(Total 2 marks)

11. The histogram below shows the distribution of student marks for an examination



(a) How many students took the examination?

.....

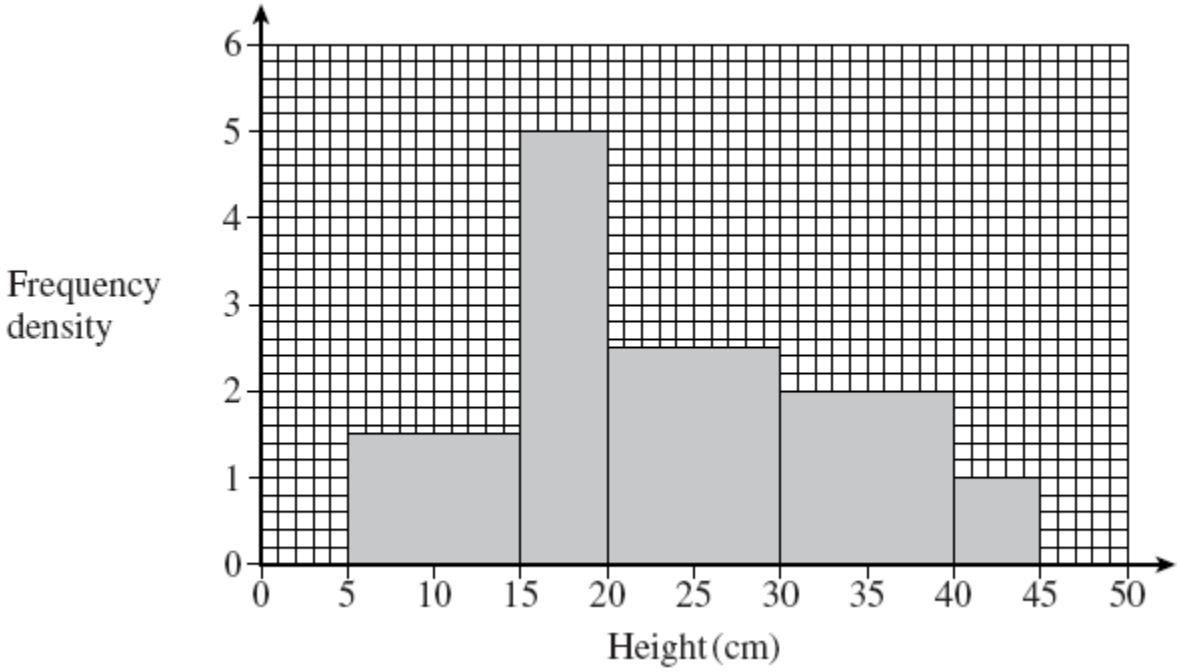
(Total 2 marks)

(b) Calculate an estimate of the mean mark.

.....

(Total 2 marks)

12. The histogram below represents the heights of plants, in cm, at a garden centre.



(a) How many plants are represented by the histogram?

.....

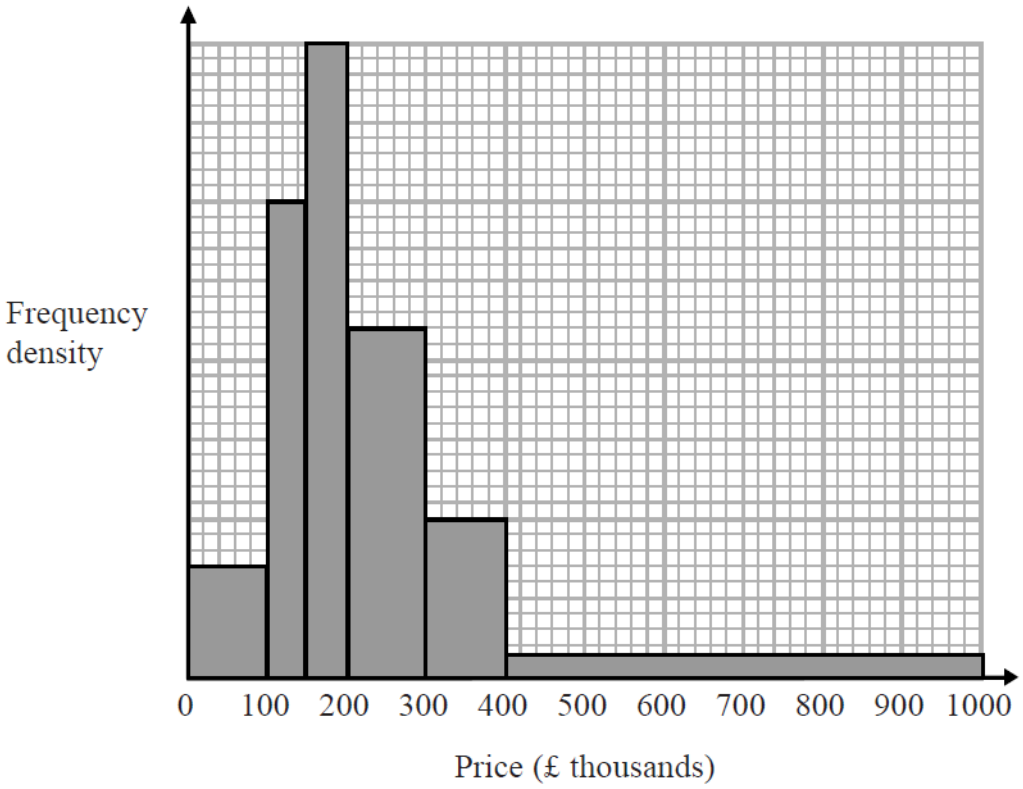
(Total 2 marks)

(b) Estimate the median height of the plants.

.....

(Total 2 marks)

13. The histogram gives information about house prices in a village in 2015.



20 houses in the village have a price between £300 000 and £400 000.

Work out the number of houses in the village with a price under £200 000.

.....

(Total 3 marks)