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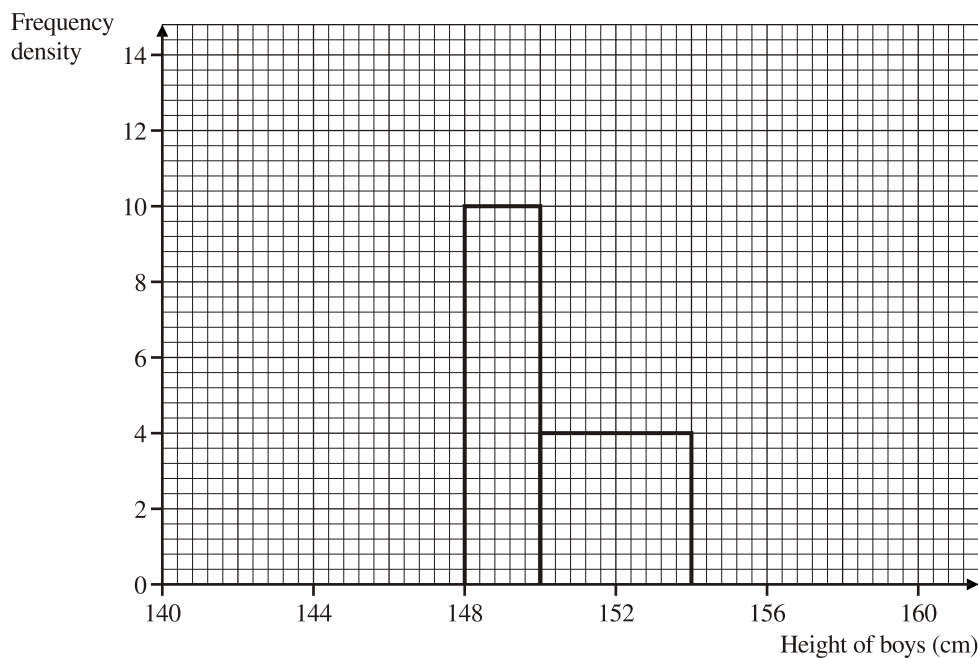
**Question 1**

Alan is doing a survey of the heights of boys and girls in Year 7. He first takes a random sample of 70 boys from Year 7.

- (a) Suggest a suitable method that Alan could use to take a random sample. **(2 marks)**

The table and the incomplete histogram show information about the boys' heights in this sample of 70 boys.

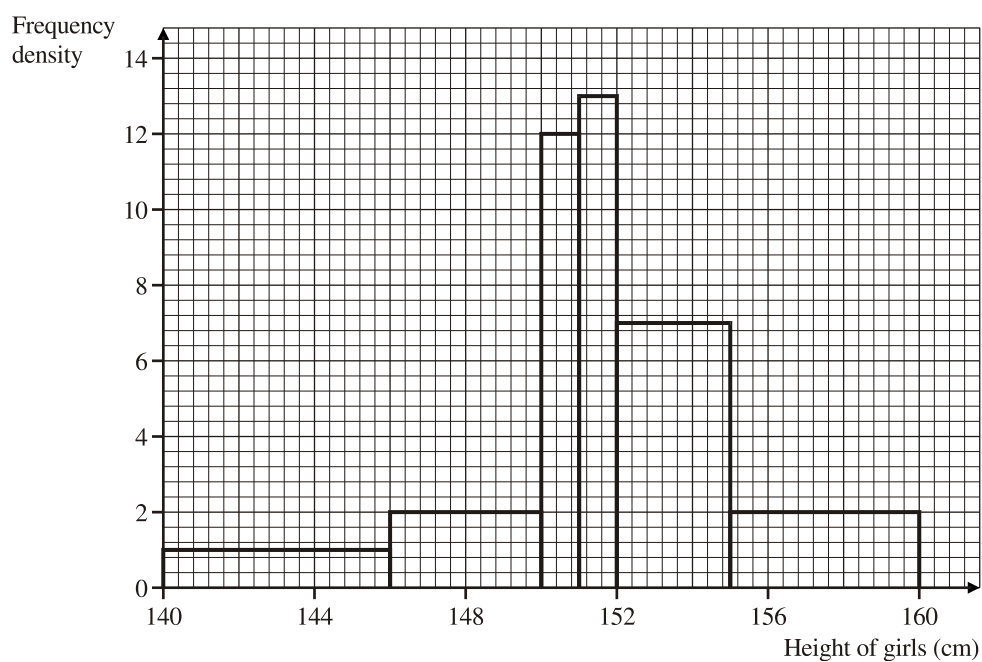
Heights of boys $h$ centimetres	Frequency
$140 \leq h < 145$	10
$145 \leq h < 148$	15
$148 \leq h < 150$	20
$150 \leq h < 154$	16
$154 \leq h < 157$	9



- (b) Use the information in the table to complete the histogram. **(3 marks)**

Alan then takes a random sample of 70 girls from Year 7. The histogram and the incomplete table show information about the girls' heights in this sample of 70 girls.

Heights of girls $h$ centimetres	Frequency
$140 \leq h < 146$	
$146 \leq h < 150$	
$150 \leq h < 151$	
$151 \leq h < 152$	13
$152 \leq h < 155$	21
$155 \leq h < 160$	

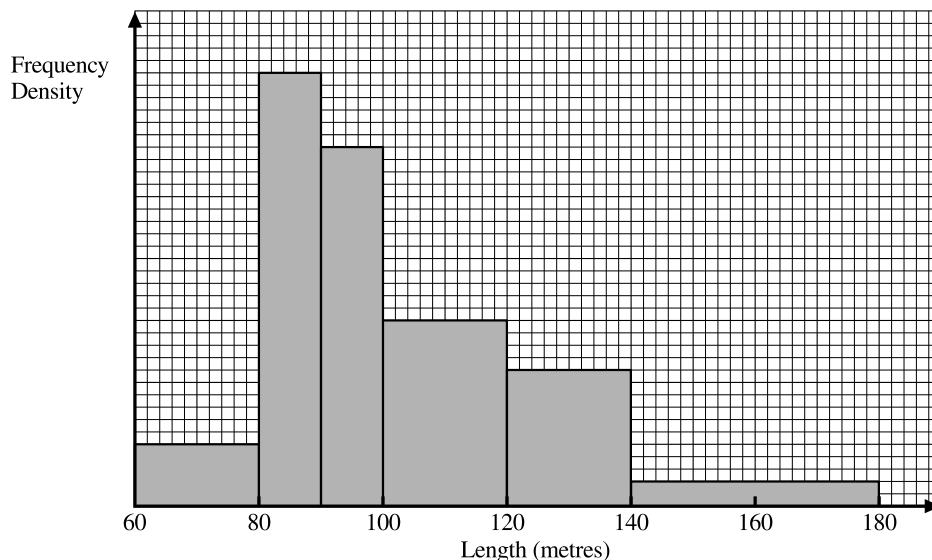


(c) Use the information in the histogram to complete the table. **(2 marks)**

(d) Use both tables and both histograms to give **two** differences between the distributions of boys' heights and girls' heights. **(2 marks)**

## Question 2

Leon recorded the lengths, in minutes, of the films shown on television in one week. His results are shown in the histogram.



20 films had lengths from 60 minutes, up to, but not including, 80 minutes.

(a) Use the information in the histogram to complete the table. **(4 marks)**

Length (minutes)	Frequency
60 up to but not including 80	20
80 up to but not including 90	
90 up to but not including 100	
100 up to but not including 120	
120 up to but not including 140	
140 up to but not including 180	

Leon also recorded the lengths, in minutes, of all the films shown on television in the following week. His results are given in the table below.

Length (minutes)	Frequency	Frequency Density
60 up to but not including 90	72	48
90 up to but not including 140	$x$	
140 up to but not including 180	$y$	

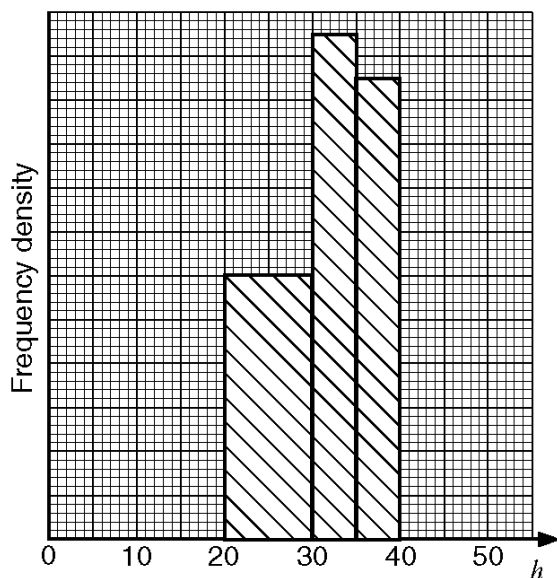
(b) Complete the table giving your answers in terms of  $x$  and  $y$ . **(3 marks)**

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**Question 3**

Kim sowed some seeds in her greenhouse.  
10 weeks later she measured the heights of the plants.  
Some of the results are shown in the table and the histogram.

Height ( $h$ ) in cm	Number of plants
$0 < h \leq 5$	0
$5 < h \leq 20$	30
$20 < h \leq 30$	120
$30 < h \leq 35$	
$35 < h \leq 40$	
$40 < h \leq 50$	96
Over 50	0



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

Kim had sown 500 seeds.

(b) Calculate the number of seeds that had not produced plants.

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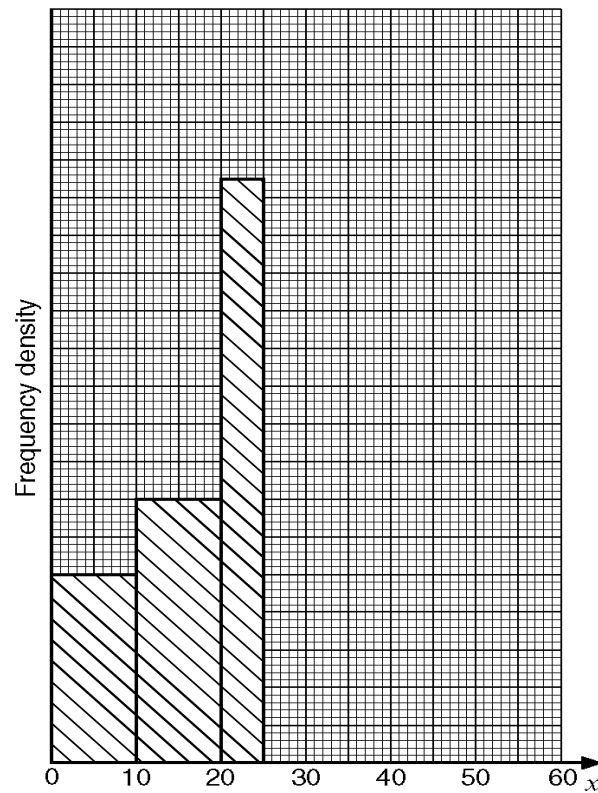
**Question 4**

John measured the time, in seconds, that birds spent on each individual visit to his bird table. The birds made a total of 113 individual visits. The histogram shows some of the results.

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

Time ( $x$ seconds)	Frequency
$0 < x \leq 10$	
$10 < x \leq 20$	28
$20 < x \leq 25$	
$25 < x \leq 30$	
$30 < x \leq 50$	12
$x > 50$	0
Total	113

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



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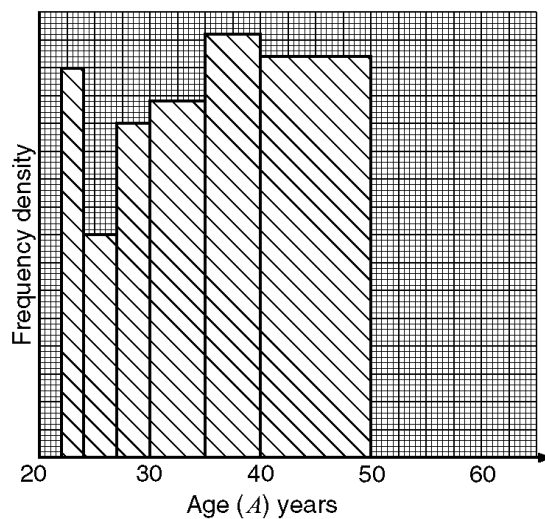
**Question 5**

The histogram gives information about the ages of the teacher at a school on 1<sup>st</sup> September last year.

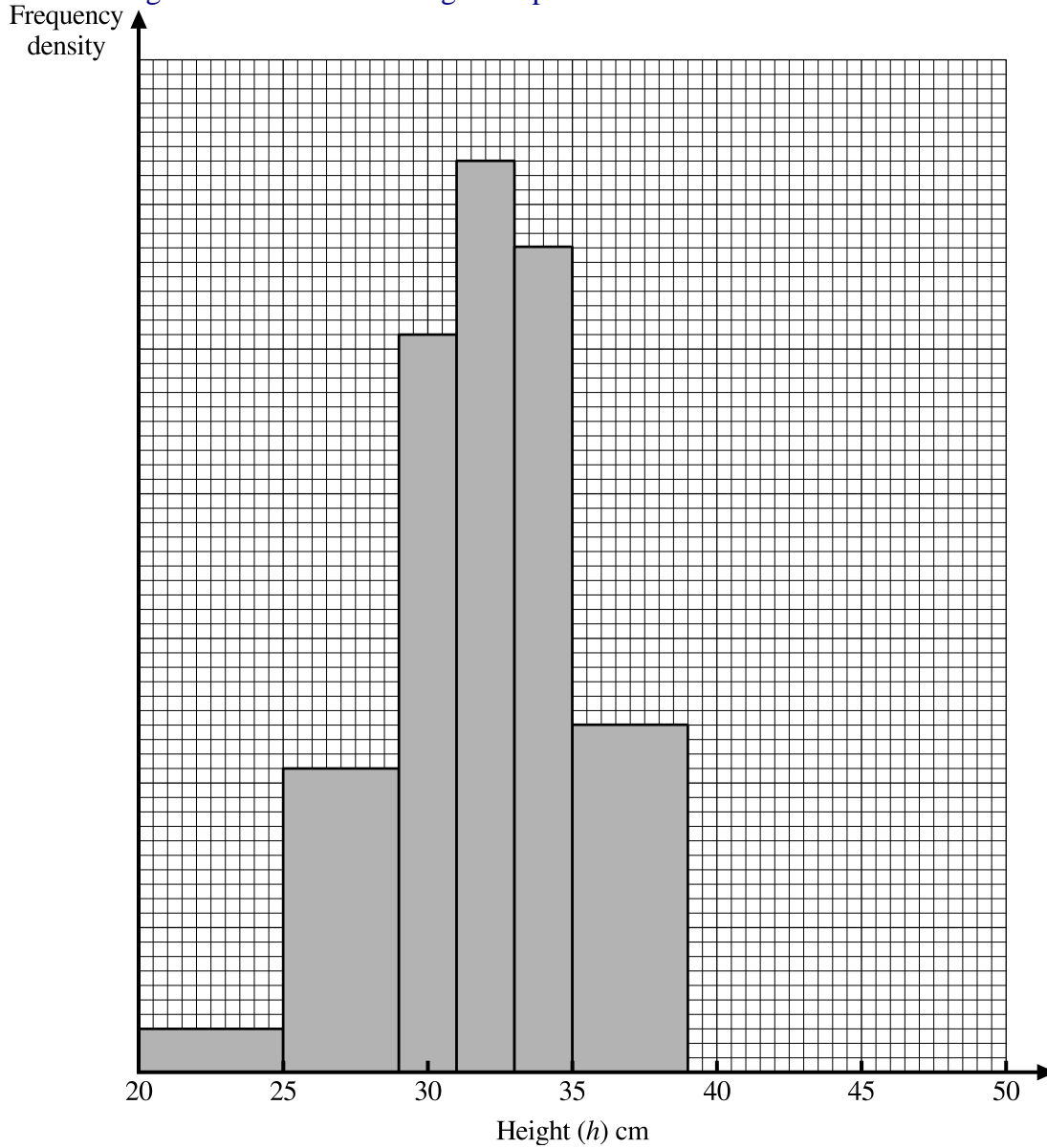
(a) Use the information in the histogram to complete the frequency table below.

Age ( $A$ ) years	Frequency
$22 \leq A < 24$	
$24 \leq A < 27$	
$27 \leq A < 30$	
$30 \leq A < 35$	16
$35 \leq A < 40$	19
$40 \leq A < 50$	
$50 \leq A < 65$	27

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



Question 6: A gardener records the heights of plants he has for a flower show.



(a) Use the information in the histogram to complete the frequency table below. (4

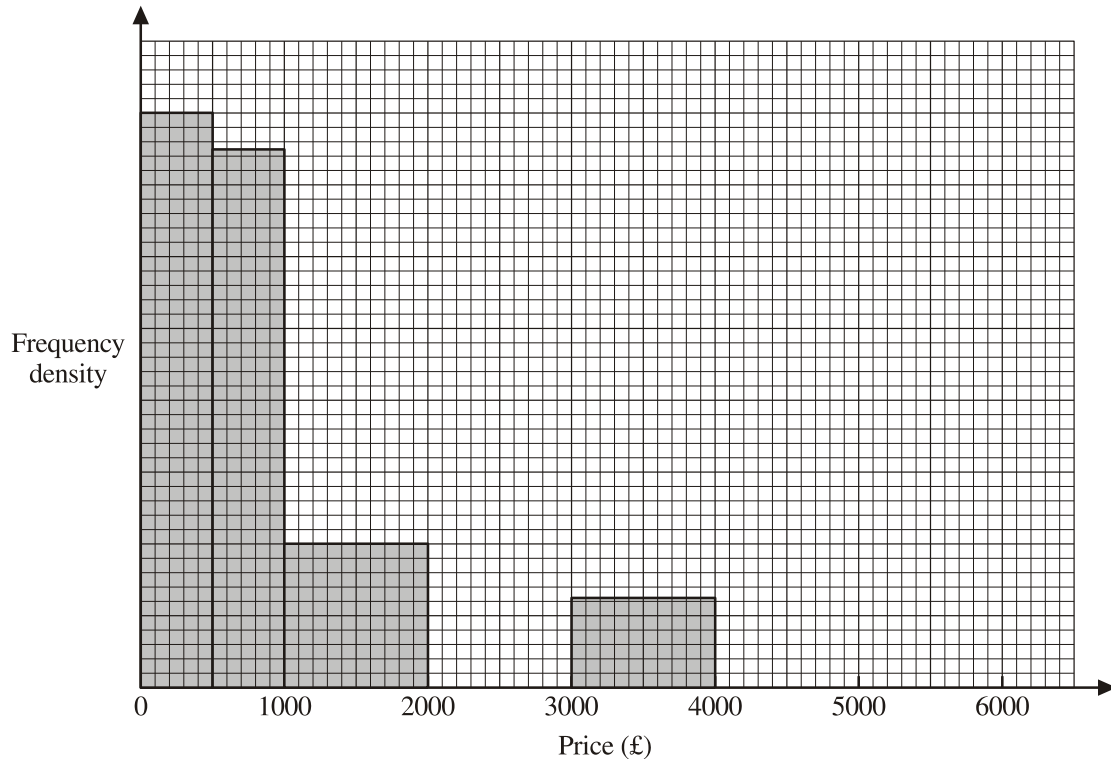
Height ( $h$ ) cm	Frequency
$20 \leq h < 25$	5
$25 \leq h < 29$	
$29 \leq h < 31$	
$31 \leq h < 33$	
$33 \leq h < 35$	
$35 \leq h < 39$	
$39 \leq h < 49$	10

marks)

(b) Use the information in the frequency table to complete the histogram. (2 marks)

Question 7

The incomplete histogram and table show information about the prices, in pounds, of cars advertised for sale in a newspaper.



Price ( $P$ ) in pounds	Frequency
$0 < P \leq 500$	16
$500 < P \leq 1000$	
$1000 < P \leq 2000$	
$2000 < P \leq 3000$	10
$3000 < P \leq 4000$	
$4000 < P \leq 6000$	8

Use the information in the histogram to complete the table.

**(3 marks)**

**(a)**

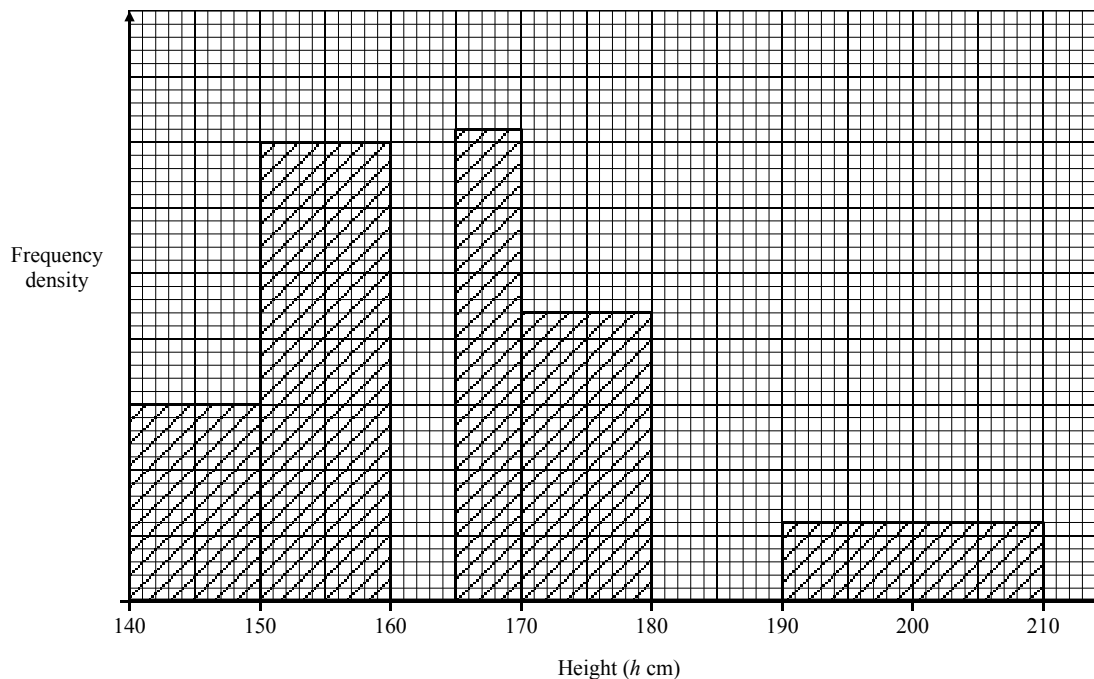
**(b)** Use the information in the table to complete the histogram.

**(3 marks)**



**Question 8**

The unfinished histogram and table give information about the heights, in centimetres, of the Year 11 students at Mathstown High School.



Height ( $h$ cm)	Frequency
$140 \leq h < 150$	15
$150 \leq h < 160$	
$160 \leq h < 165$	20
$165 \leq h < 170$	
$170 \leq h < 180$	
$180 \leq h < 190$	12
$190 \leq h < 210$	

**(a)** Use the histogram to complete the table. **(3 marks)**

**(b)** Use the table to complete the histogram. **(3 marks)**

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**Question 9**

Mrs Smith asked the Year 11 students at her school how long they had spent revising Maths the evening before their Maths exam.

The unfinished histogram and frequency table give information about their responses.

Revision time ( $t$ minutes)	Frequency
$20 \leq t < 25$	20
$25 \leq t < 40$	
$40 \leq t < 60$	
$60 \leq t < 85$	
$85 \leq t < 95$	32

No student revised for less than 20 minutes.

No student revised for 95 minutes or more.

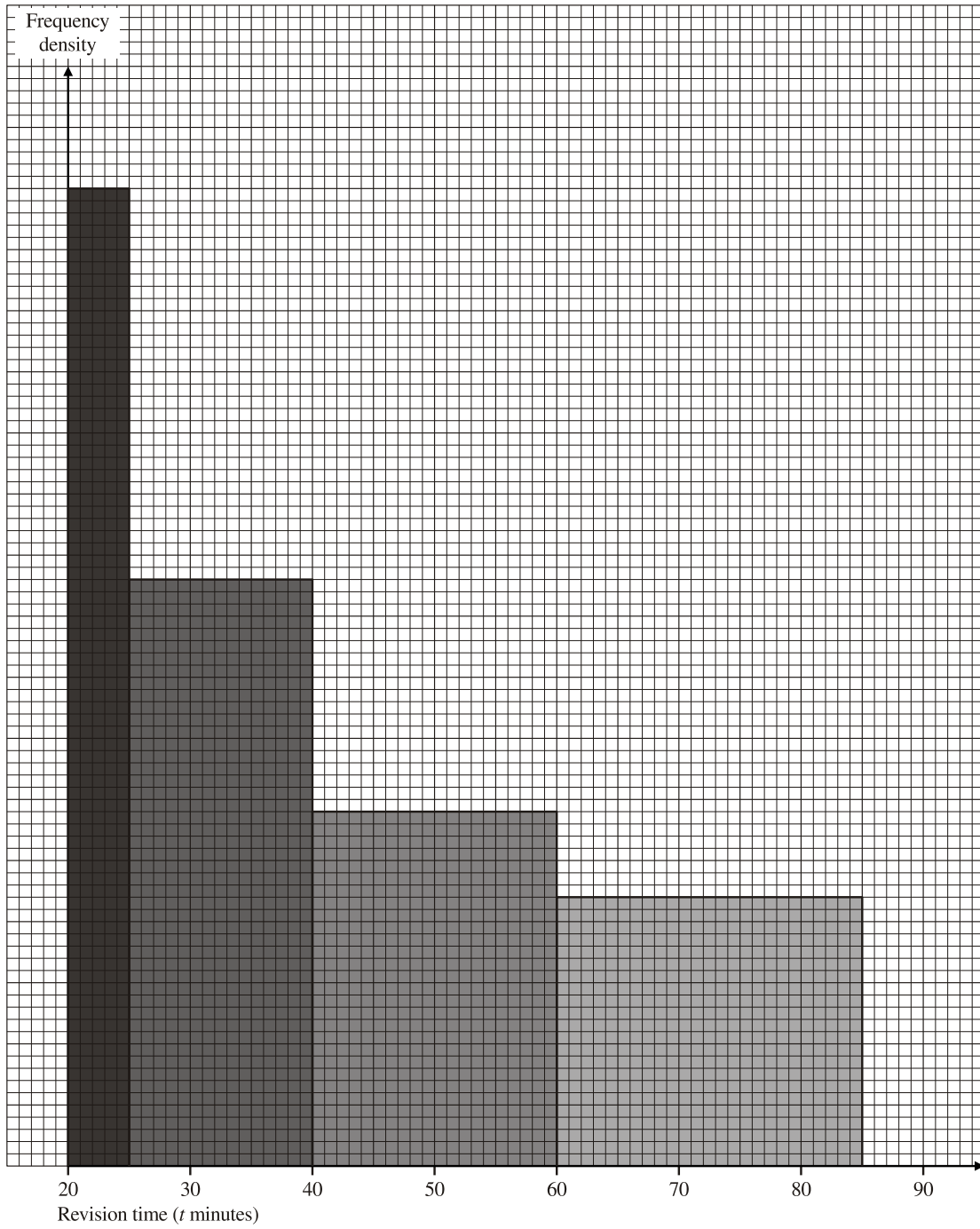
(a) Use the histogram to complete the table. **(2 marks)**

(b) Use the table to complete the histogram. **(2 marks)**

There are 147 students in Year 11.

Mrs Smith took a stratified sample of 28 of these students according to revision time. She compared their exam marks with their revision times.

(c) Calculate the number of students in the sample who spent at least 85 minutes revising. **(2 marks)**



Question 10

The weights of some babies are given in the table.

Weight W kg	Frequency
$0 \leq W < 2$	0
$2 \leq W < 2.5$	8
$2.5 \leq W < 3$	9
$3 \leq W < 4$	15
$4 \leq W < 6$	27
$W \geq 6$	0

Draw a histogram to show the distribution of weights of the babies.

Use a scale of 2 cm to 1 kg on the weight axis.

**(3 marks)**

