

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8 - 9	
10 - 11	
12 - 13	
TOTAL	



General Certificate of Secondary Education
Higher Tier


Mathematics

43602H

Past Paper Type Questions by Topic

Histograms

H

<p>For this paper you must have:</p> <ul style="list-style-type: none"> • a calculator • mathematical instruments. 	
---	---

Time allowed

- 1 hour

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is.
- The quality of your written communication is specifically assessed in some questions. These questions are indicated with an asterisk (*)
- You may ask for more answer paper and graph paper. These must be tagged securely to this answer booklet.

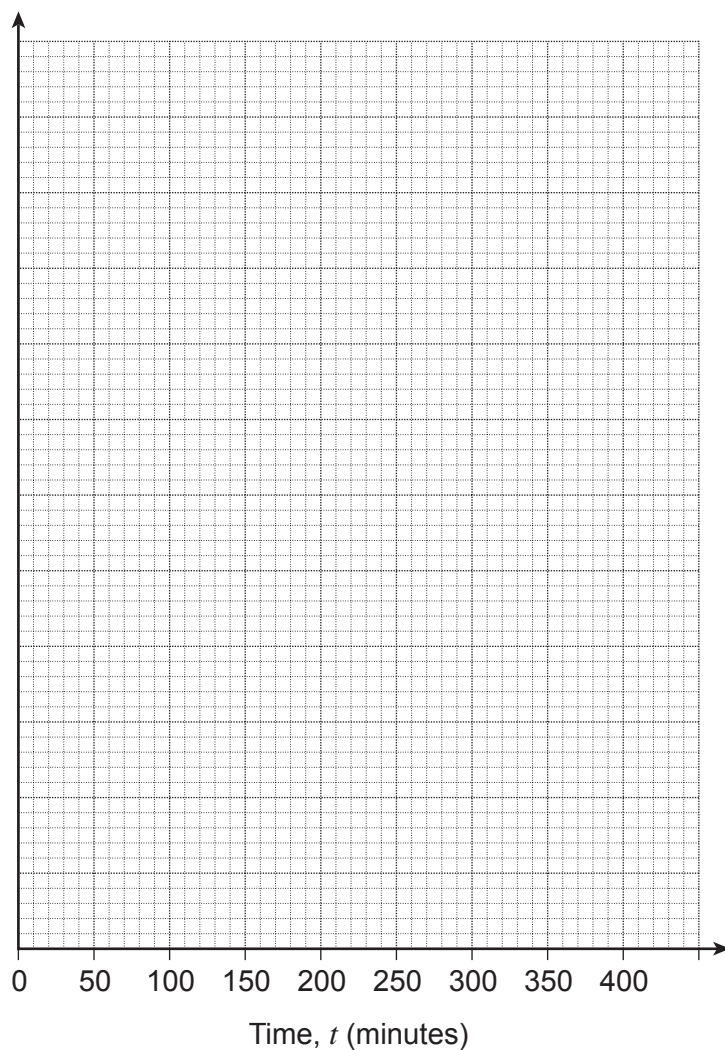
Advice

- In all calculations, show clearly how you work out your answer.

1 The table shows information about the length of time that 180 children spent on facebook.

Time, t (minutes)	Frequency
$60 < t \leq 150$	18
$150 < t \leq 180$	66
$180 < t \leq 240$	60
$240 < t \leq 360$	36

1 (a) Draw a suitable frequency diagram for the data.



(3 marks)



1 (b) Calculate an estimate of the average length of time for those people who are on facebook for over three hours.

.....
.....
.....
.....

Answer minutes (2 marks)

1 (c) Two children are chosen at random from the 180 children.
Estimate the probability that both are on facebook for less than two hours.

.....
.....
.....
.....
.....

Answer (3 marks)

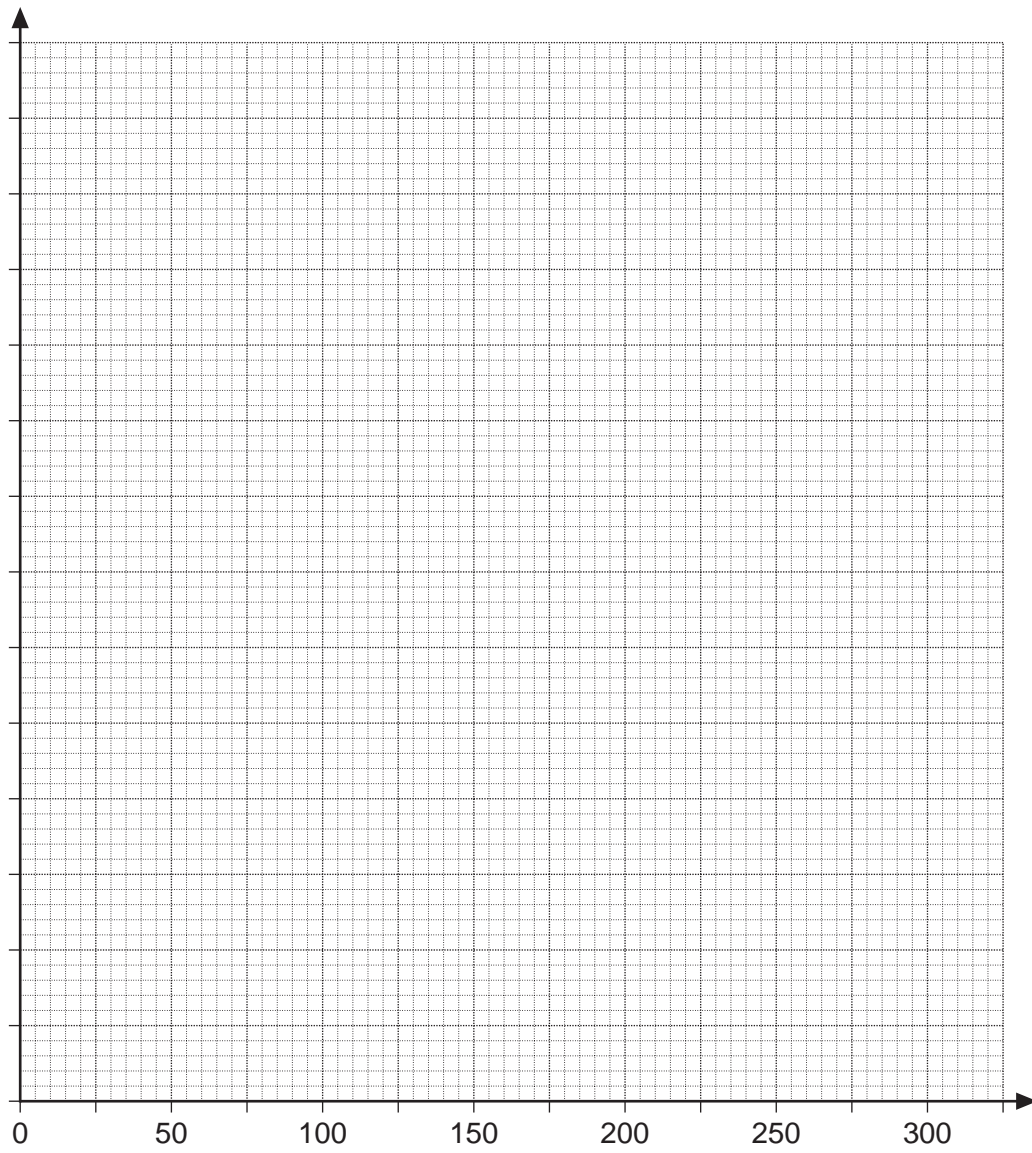


2

The table shows the cricket scores for a local club over a season.

Score, s	Frequency
$75 < s \leq 125$	40
$125 < s \leq 150$	55
$150 < s \leq 175$	65
$175 < s \leq 225$	95
$225 < s \leq 300$	45
Total	300

Draw a fully labelled histogram to illustrate the data.



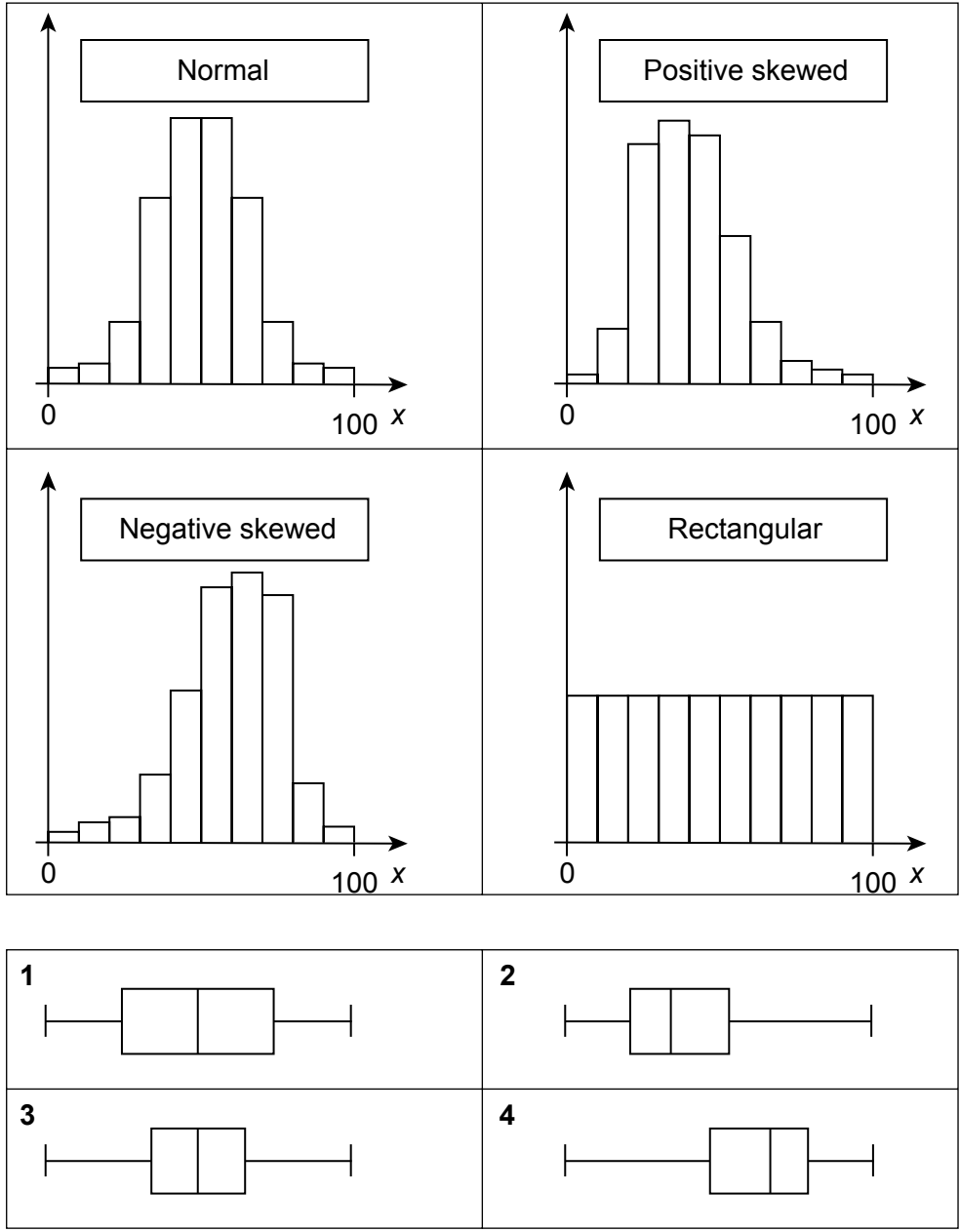
Score, s

(3 marks)



3 Four histograms for a variable x with values from 0 to 100 are shown below.

Four box plots for the same histograms are also shown. Match each histogram to the correct box plot.



Normal histogram is shown by box plot

Positive skewed histogram is shown by box plot

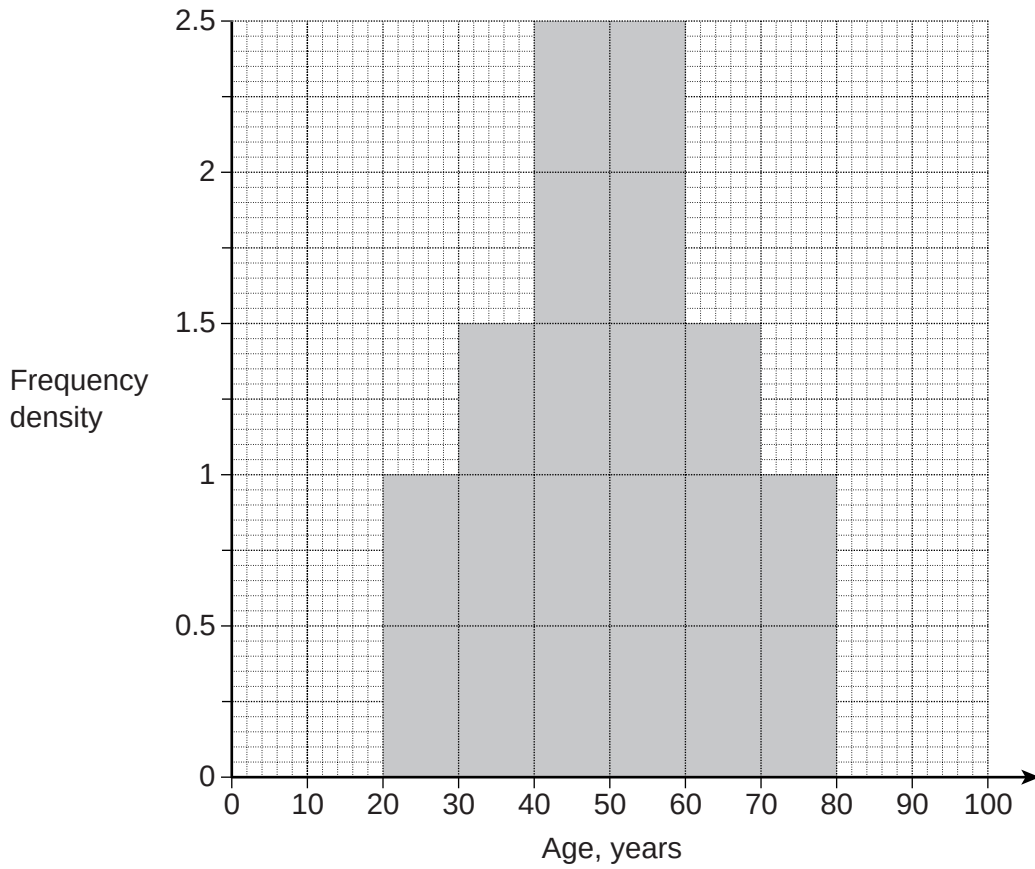
Negative skewed histogram is shown by box plot

Rectangular histogram is shown by box plot

(3 marks)



4 The histogram shows the distribution of ages of 100 members of a bowling club.



4 (a) How many members of the club were less than 40 years old?

.....

Answer (1 mark)

4 (b) How many members of the club are between 40 and 60 years old?

.....

Answer (1 mark)

4 (c) Work out the inter-quartile range of the ages.

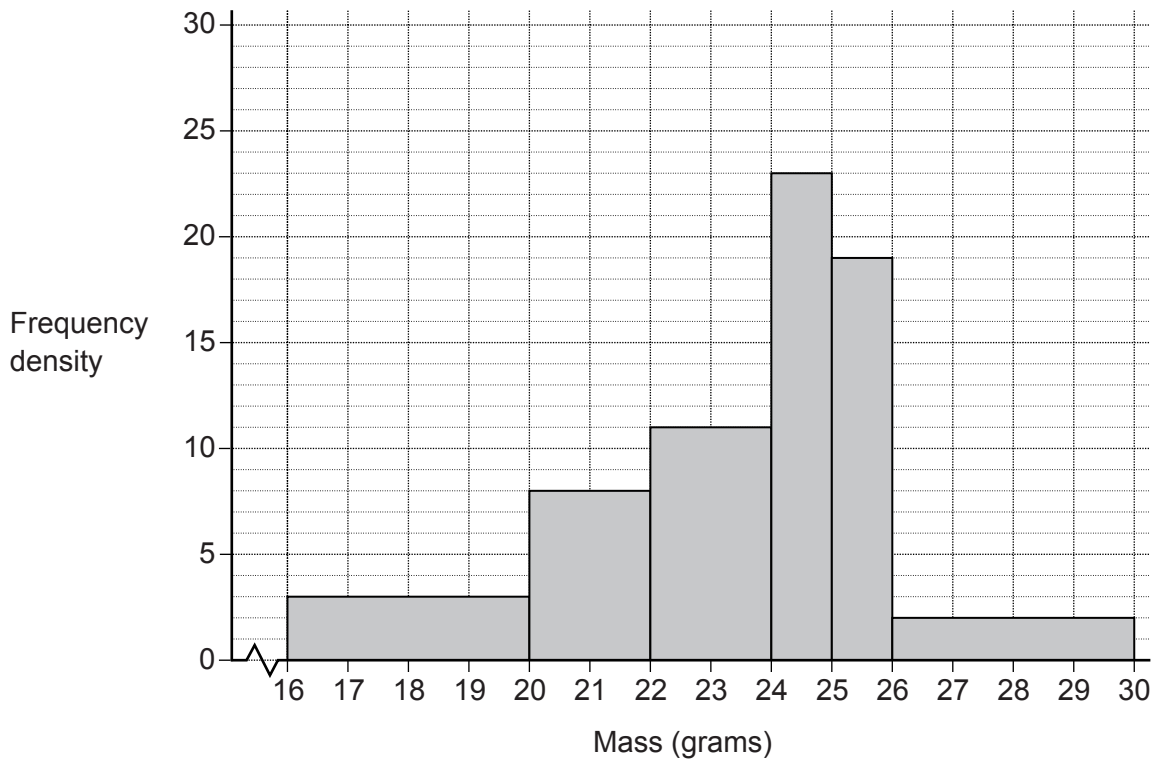
.....

.....

Answer years (2 marks)



5 The histogram shows the distribution of the masses of 100 mice.



Calculate an estimate of the mean mass.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

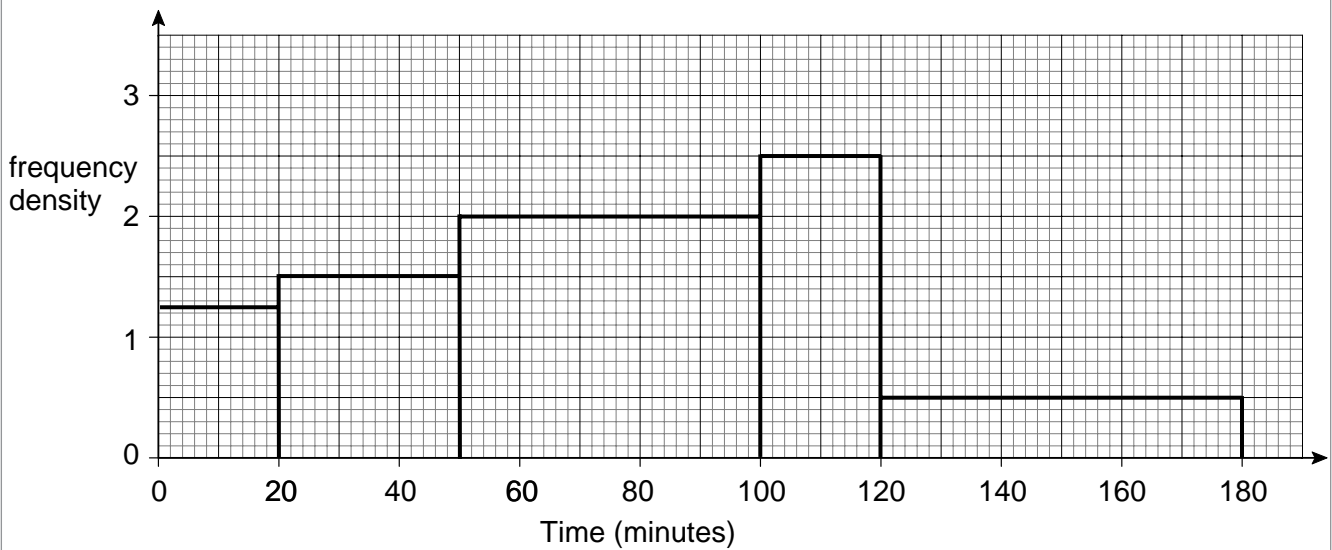
Answer grams (4 marks)



6

The histogram and the frequency table show some information about how much time some people spent shopping.

Time (minutes)	Number of people
$0 < t \leq 20$	25
$20 < t \leq 50$	45
$50 < t \leq 100$	100
$100 < t \leq 120$	50
$120 < t \leq 180$	30



Fifty people were shopping for more than T minutes.

Calculate an estimate of the value of T .

.....

.....

.....

.....

.....

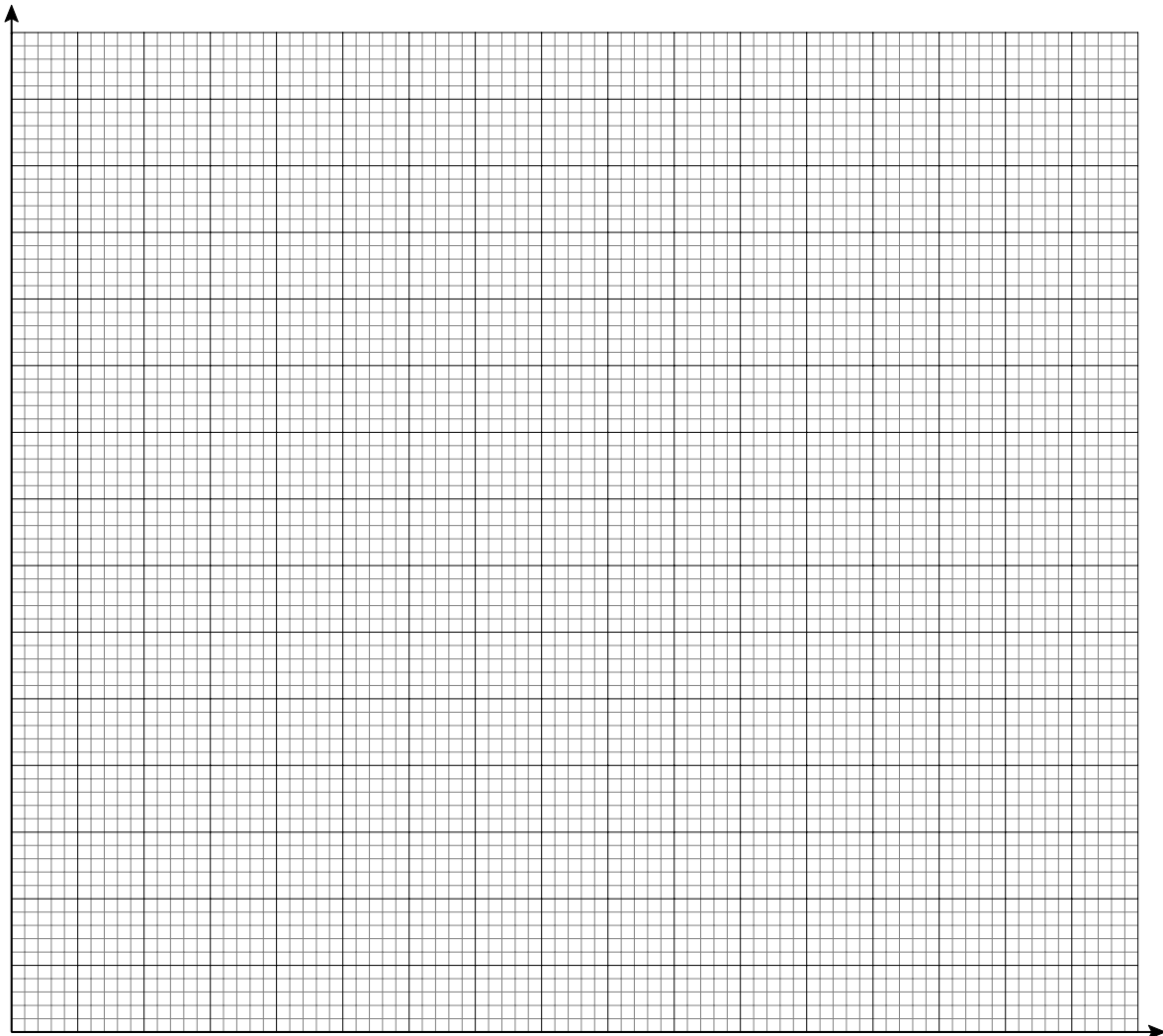
Answer minutes (3 marks)



7 The table shows the height of 100 hills in England.

Height, h (metres)	Frequency	
$0 < w \leq 500$	34	
$500 < w \leq 1000$	28	
$1000 < w \leq 2000$	22	
$2000 < w \leq 4000$	16	

7 (a) Draw a fully labelled histogram to show the heights of the hills.



(3 marks)



7 (b) Estimate the probability that 2 hills picked at random were over 500 metres in height.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

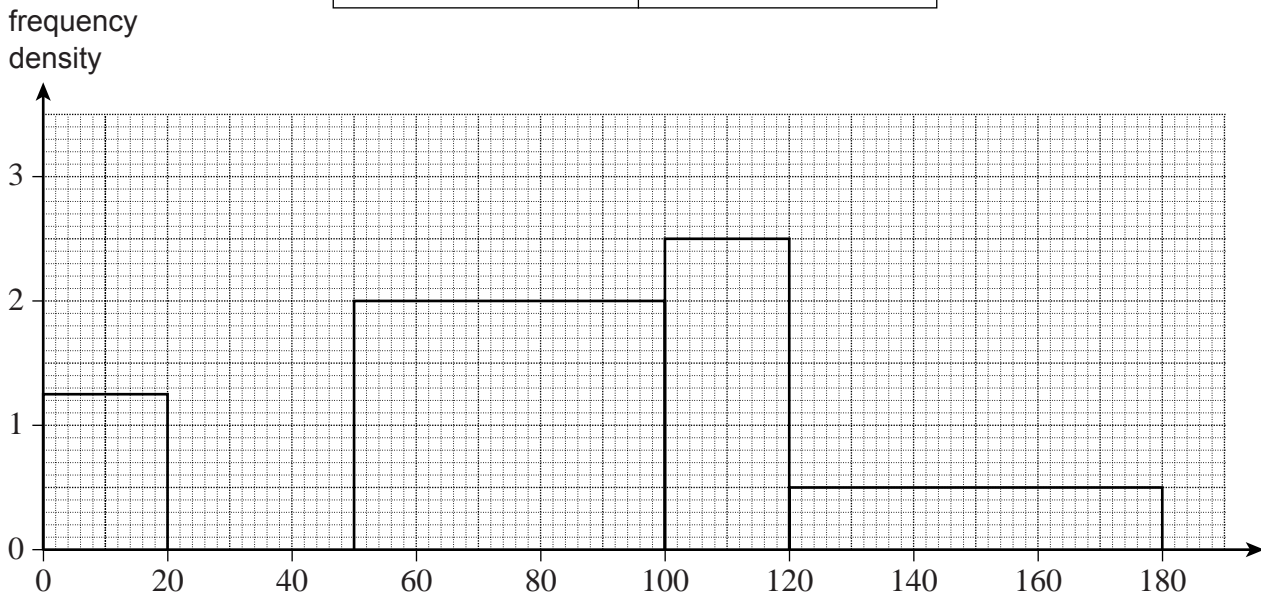
.....

Answer (3 marks)



8 The histogram and the frequency table show some information about how much time some people spent shopping.

Time (minutes)	Number of people
$0 < t \leq 20$	25
$20 < t \leq 50$	45
$50 < t \leq 100$	
$100 < t \leq 120$	50
$120 < t \leq 180$	30



8 (a) Complete the histogram and fill in the missing number in the frequency table.

.....

 (2 marks)

8 (b) Fifty people were shopping for more than T minutes.

Calculate an estimate of the value of T .

.....

Answer $T =$ minutes (3 marks)



There are no questions printed on this page

**DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED**

