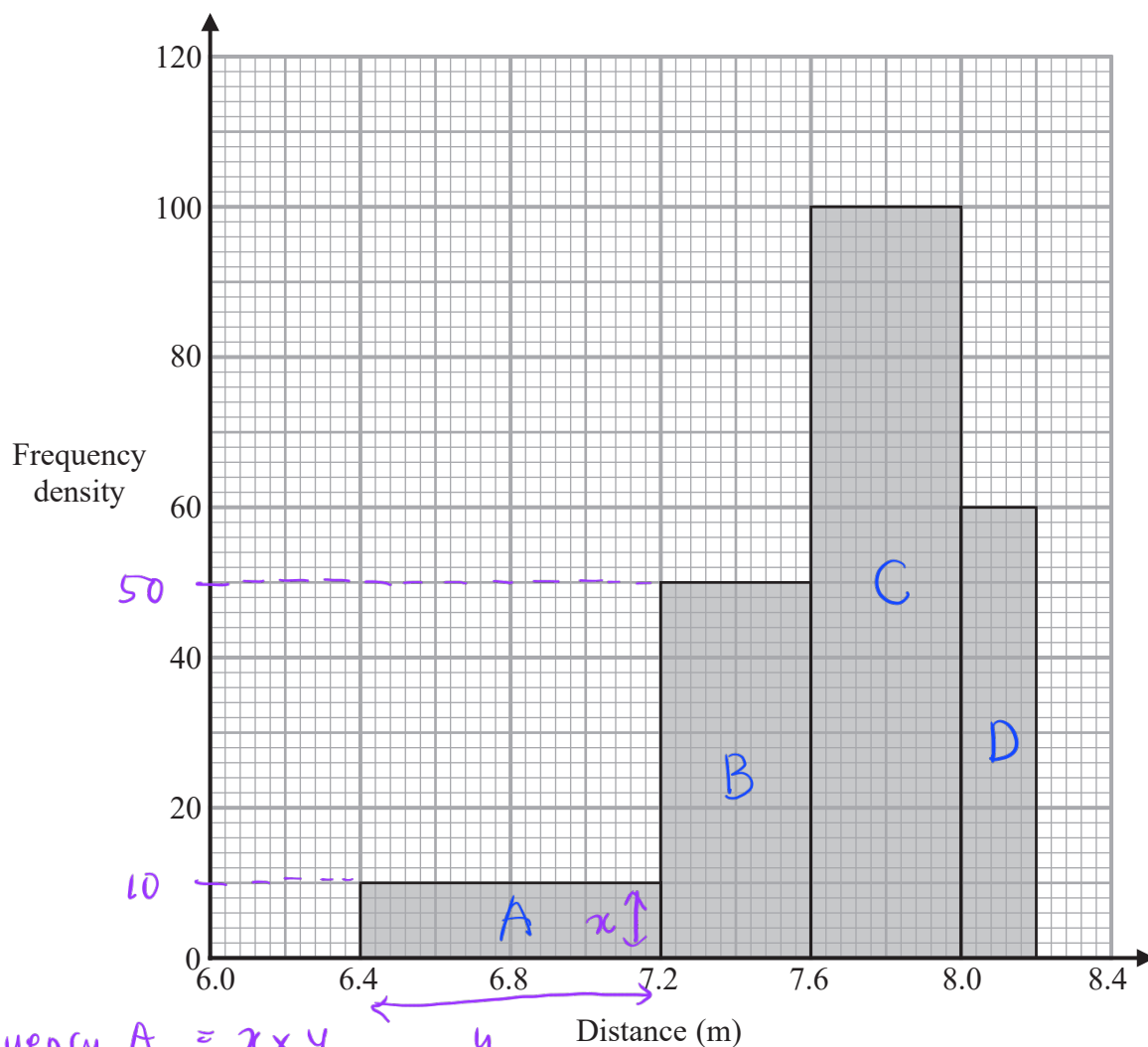


- 1 The histogram gives information about the distances 80 competitors jumped in a long jump competition.



$$\text{Frequency A} = x \times y$$

Calculate an estimate for the mean distance.

$$\text{Frequency A} = (7.2 - 6.4)(10) = 8 \quad (1)$$

$$\text{Frequency B} = (7.6 - 7.2)(50) = 20$$

$$\text{Frequency C} = (8.0 - 7.6)(100) = 40$$

$$\text{Frequency D} = (8.2 - 8.0)(60) = 12 \quad (1)$$

$$\text{Mean distance} = \frac{(8 \times 6.8) + (20 \times 7.4) + (40 \times 7.8) + (12 \times 8.1)}{80} \quad (1)$$

mean distance =

$$\frac{\sum (\text{midpoint} \times \text{Frequency})}{\text{Total frequency}}$$

$$= \frac{611.6}{80} = 7.645 \quad (1)$$

..... m

(Total for Question 1 is 4 marks)

- 2 The table gives information about the distances, in miles, that some Year 10 students live from school.

Distance (d miles)	Frequency
$0 < d \leq 1.0$	90
$1.0 < d \leq 1.5$	48
$1.5 < d \leq 2.0$	22
$2.0 < d \leq 3.0$	8
$3.0 < d \leq 5.0$	12

c.w.

f.d. ①

190

0.5

48

0.5

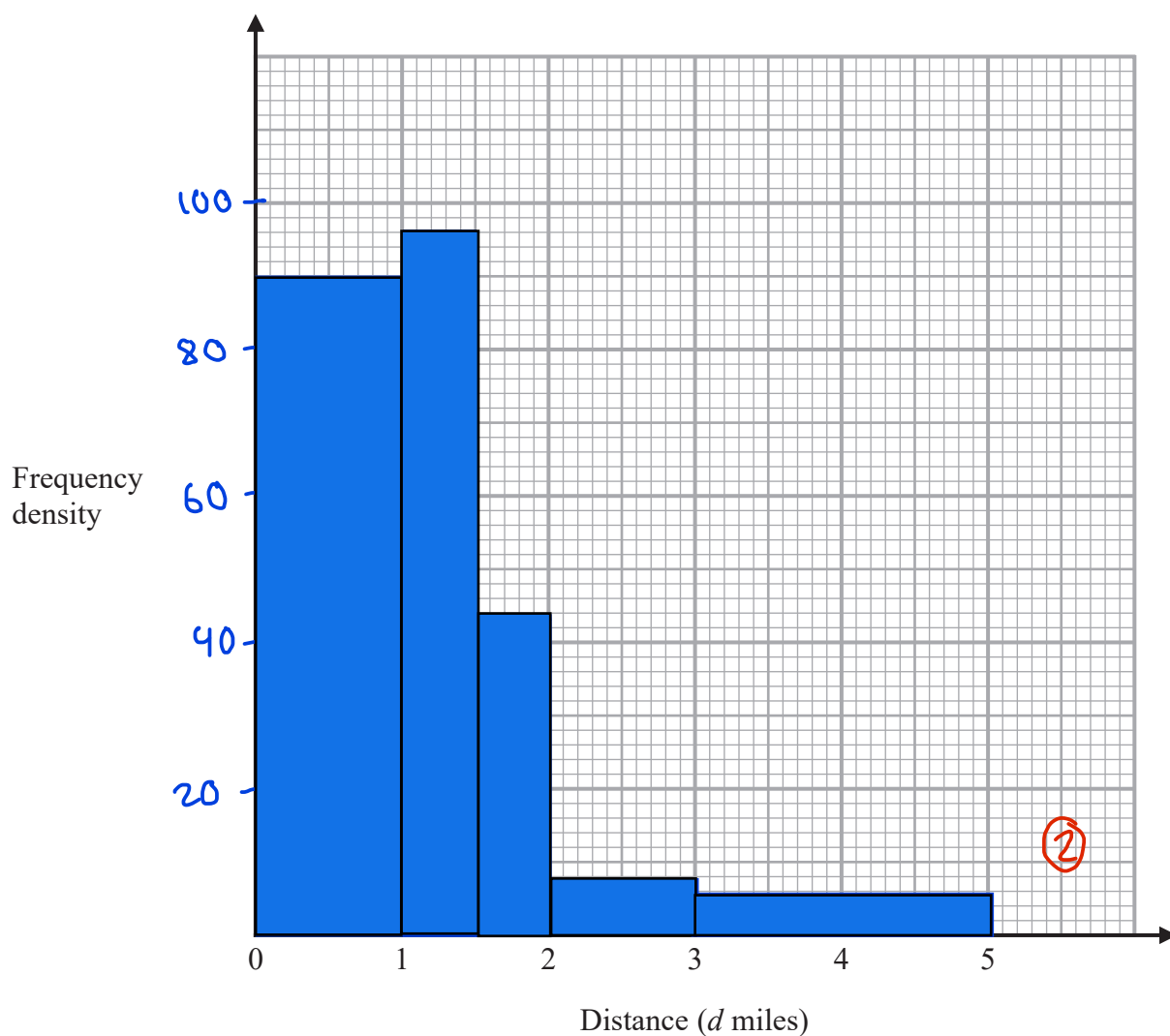
44

1826

$$\text{Frequency} = \text{f.d.} \times \text{c.w.}$$

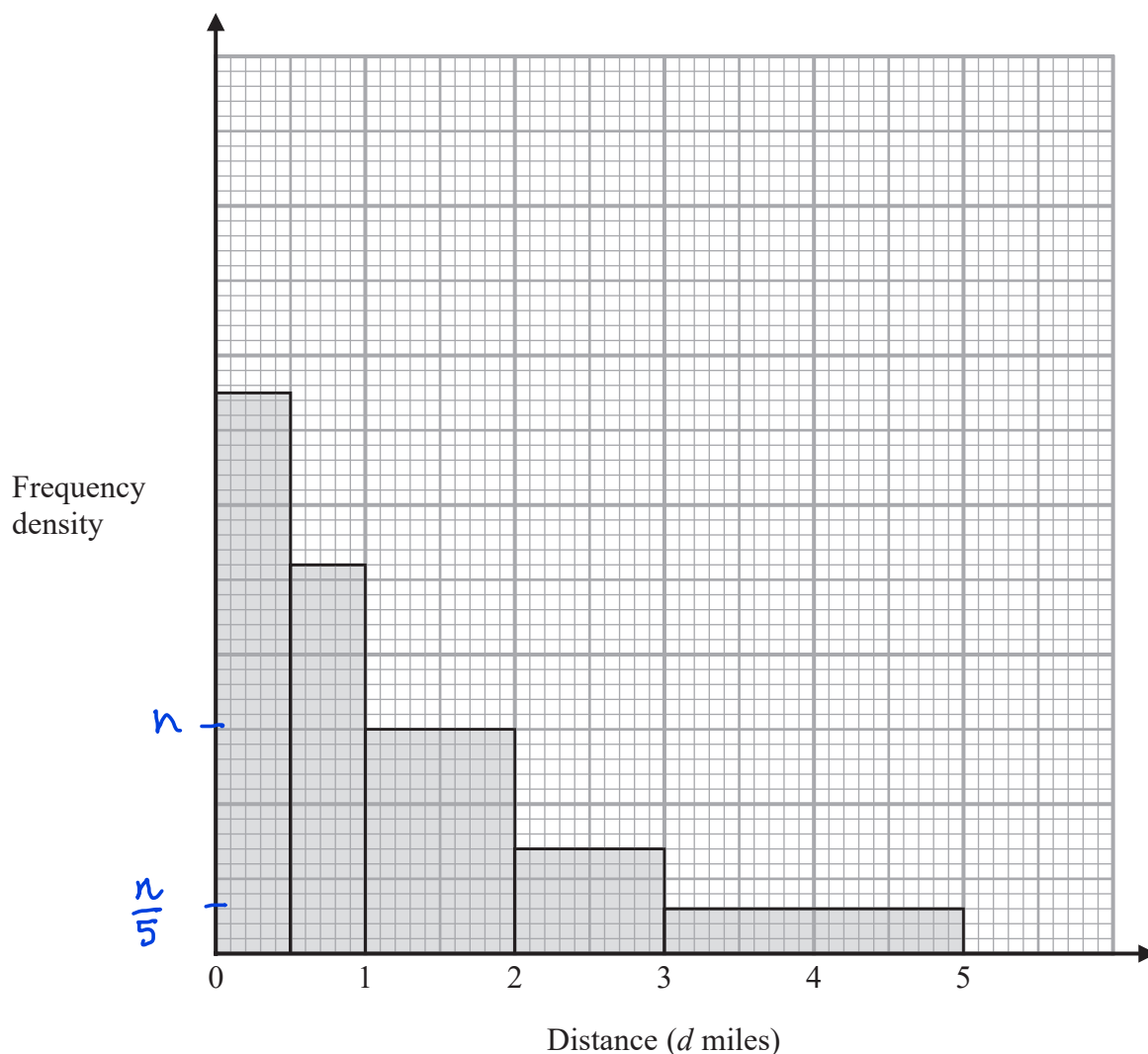
$$\Rightarrow \text{f.d.} = \frac{\text{frequency}}{\text{cw}}$$

- (a) On the grid, draw a histogram for this information.



(3)

The histogram below shows information about the distances, in miles, that some Year 11 students live from school.



The number of Year 11 students who live between 1 and 2 miles from school is n .

- (b) Find an expression, in terms of n , for the number of Year 11 students who live between 3 and 5 miles from school.

1 - 2 mile group:
has class width 1
has frequency n
 \Rightarrow freq. density = $\frac{n}{1} = n$

3 - 5 mile group:
has class width 2

find freq. density of 3-5 group:

n : 15 squares
 $n/5$: 3 squares $\downarrow \div 5$ ①

\therefore freq. density = $\frac{n}{5}$

frequency = $\frac{n}{5} \times 2 = 0.4n$

0.4n ①

(2)

(Total for Question 2 is 5 marks)

3 The table shows information about the weights, in grams, of some potatoes.

class width

20

10

10

20

Weight (w grams)	Number of potatoes
$50 < w \leq 70$	20
$70 < w \leq 80$	50
$80 < w \leq 90$	60
$90 < w \leq 110$	30

frequency density

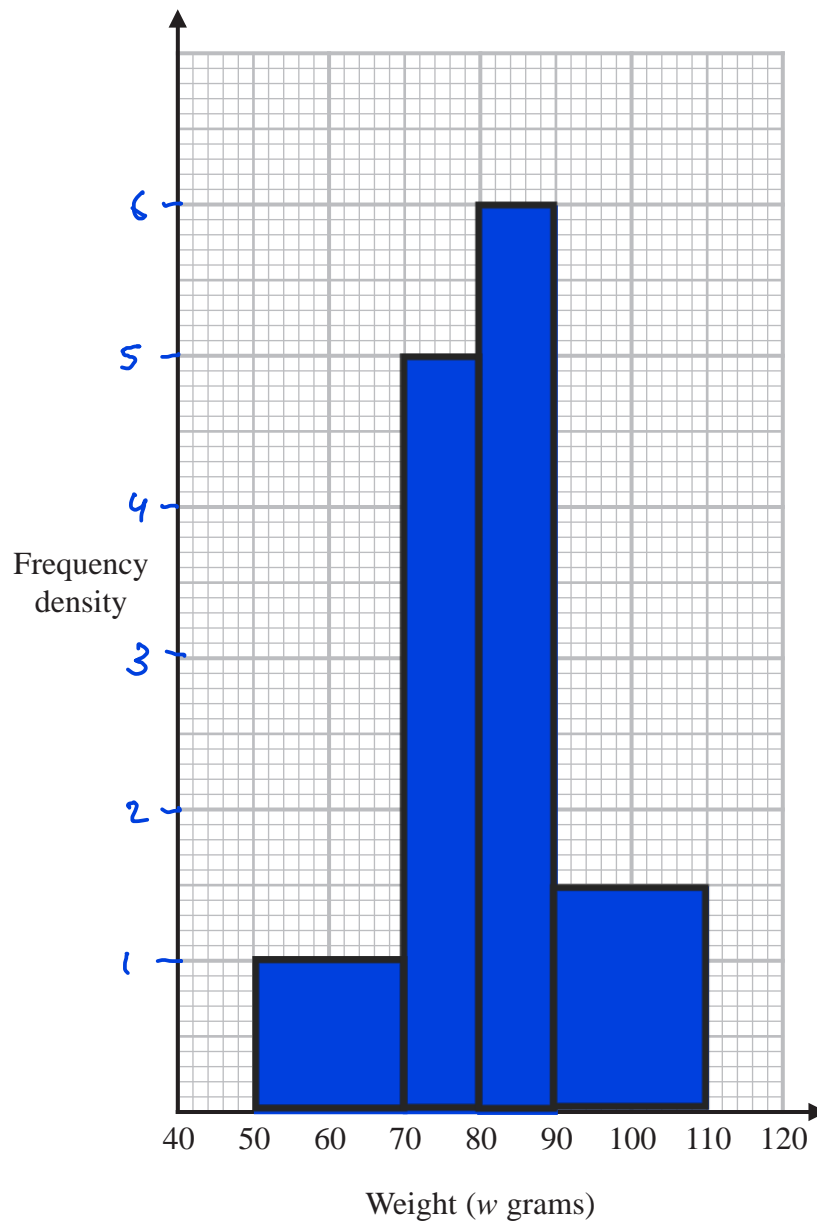
$$20 \div 20 = 1$$

$$50 \div 10 = 5$$

$$60 \div 10 = 6$$

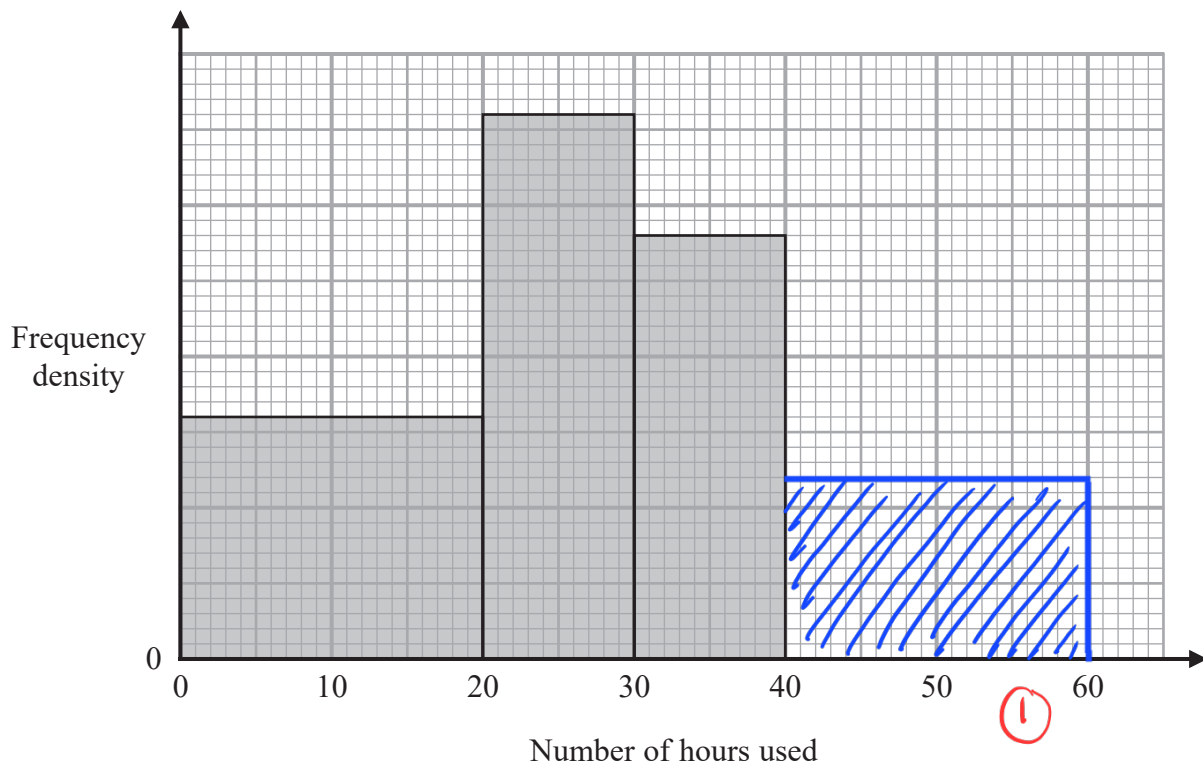
$$30 \div 20 = 1.5$$

On the grid, draw a histogram for this information.



(Total for Question 3 is 3 marks)

- 4 The histogram gives information about the number of hours some students used their phones last week.
The histogram is incomplete.



28 students used their phones for between 30 and 40 hours.
24 students used their phones for between 40 and 60 hours.

- (a) Use this information to complete the histogram.

$$28 \div 10 = 2.8 \quad \text{①} \quad \text{1 small box} = 0.1$$

$$24 \div 20 = 1.2 \quad \text{1.2 is equivalent to 12 small boxes}$$

(2)

No student used their phone for more than 60 hours.

- (b) Work out the total number of students.

$$1.6 \times 20 = 32$$

$$3.6 \times 10 = 36$$

$$\text{Frequency} = \text{Frequency density} \times \text{class interval}$$

$$\text{Total number of students} = 32 + 36 + 28 + 24 \quad \text{①}$$

$$= 120 \quad \text{①}$$

(2)

(Total for Question 4 is 4 marks)