

Drawing Histograms

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **24**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 Frequency density = $\frac{\text{frequency}}{\text{class width}}$

- (a) A class $20 < t \leq 35$ has a frequency of 45
Work out the frequency density for this class.

[1 mark]

Answer _____

- (b) A class $10 < x \leq 30$ has a frequency density of 2.5
Work out the frequency of this class.

[1 mark]

Answer _____

2 Explain why a histogram is used instead of a bar chart when the class widths are unequal.

[1 mark]

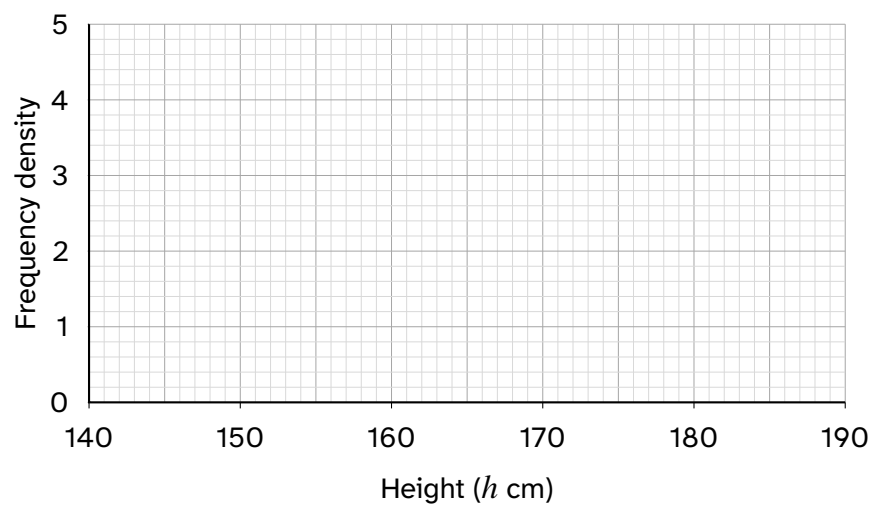
3 The table shows the heights of 76 plants.

(a) Complete the frequency density column.

Height (h cm)	Frequency	Frequency density
$140 < h \leq 150$	12	
$150 < h \leq 155$	18	
$155 < h \leq 160$	22	
$160 < h \leq 170$	16	
$170 < h \leq 190$	8	

[2 marks]

(b) Draw a histogram to show this information.



[3 marks]

4 The table shows information about the lengths of 120 fish caught in a lake.

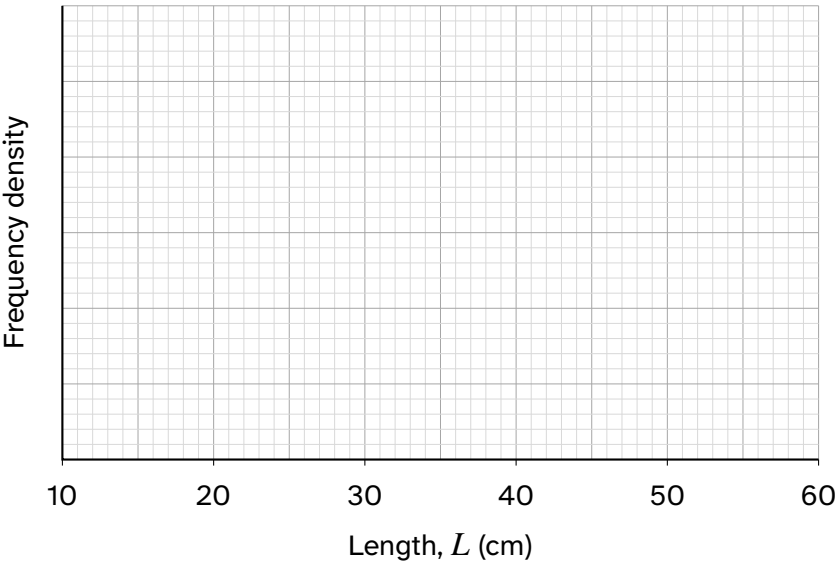
Length, L (cm)	Frequency
$10 \leq L < 20$	12
$20 \leq L < 25$	18
$25 \leq L < 30$	26
$30 \leq L < 40$	36
$40 \leq L < 60$	28

(a) Work out an estimate of the mean length.

[3 marks]

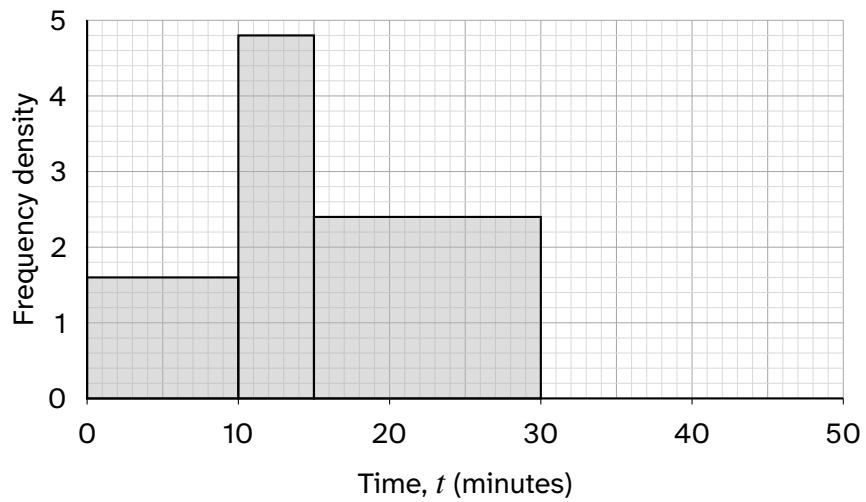
Answer _____ cm

(b) Draw a histogram to represent this information.



[4 marks]

- 5 The histogram shows information about the time, t minutes, some commuters took to travel to work.
 The bar for $30 \leq t < 50$ is missing.
 No commuter took 50 minutes or more.

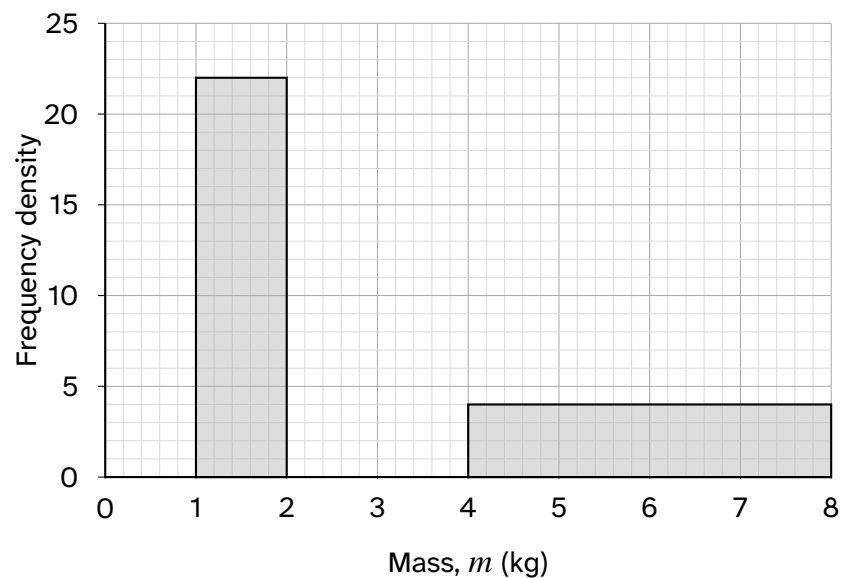


The number of commuters who took from 30 to 50 minutes is $\frac{2}{3}$ of the number who took from 15 to 30 minutes.
 Complete the histogram.

[4 marks]

- 6** The incomplete table and histogram show information about the masses, m kg, of the pumpkins sold at a farm shop one day.
- (a) Use the histogram to complete the table.
Use the table to complete the histogram.

Mass, m (kg)	Frequency
$0 < m \leq 1$	14
$1 < m \leq 2$	
$2 < m \leq 4$	30
$4 < m \leq 8$	



[3 marks]

- (b) Work out an estimate for the number of pumpkins with a mass greater than 3 kg.
[2 marks]

Answer _____