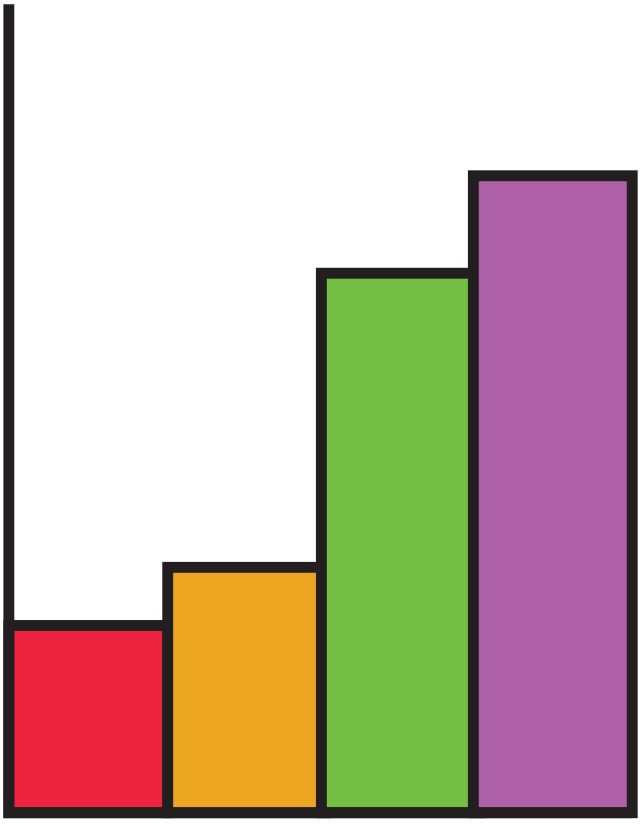
EDEXCEL IGCSE MATHEMATICS

PAPER 1H & 1HR (LINEAR)

GEOMETRY – HISTOGRAMS

QP & MS (2018 – 2025)



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EDEXCEL IGCSE MATHEMATICS MODULAR FOR MAY & OCT 2026

by Sir Muhammad Abdullah Shah

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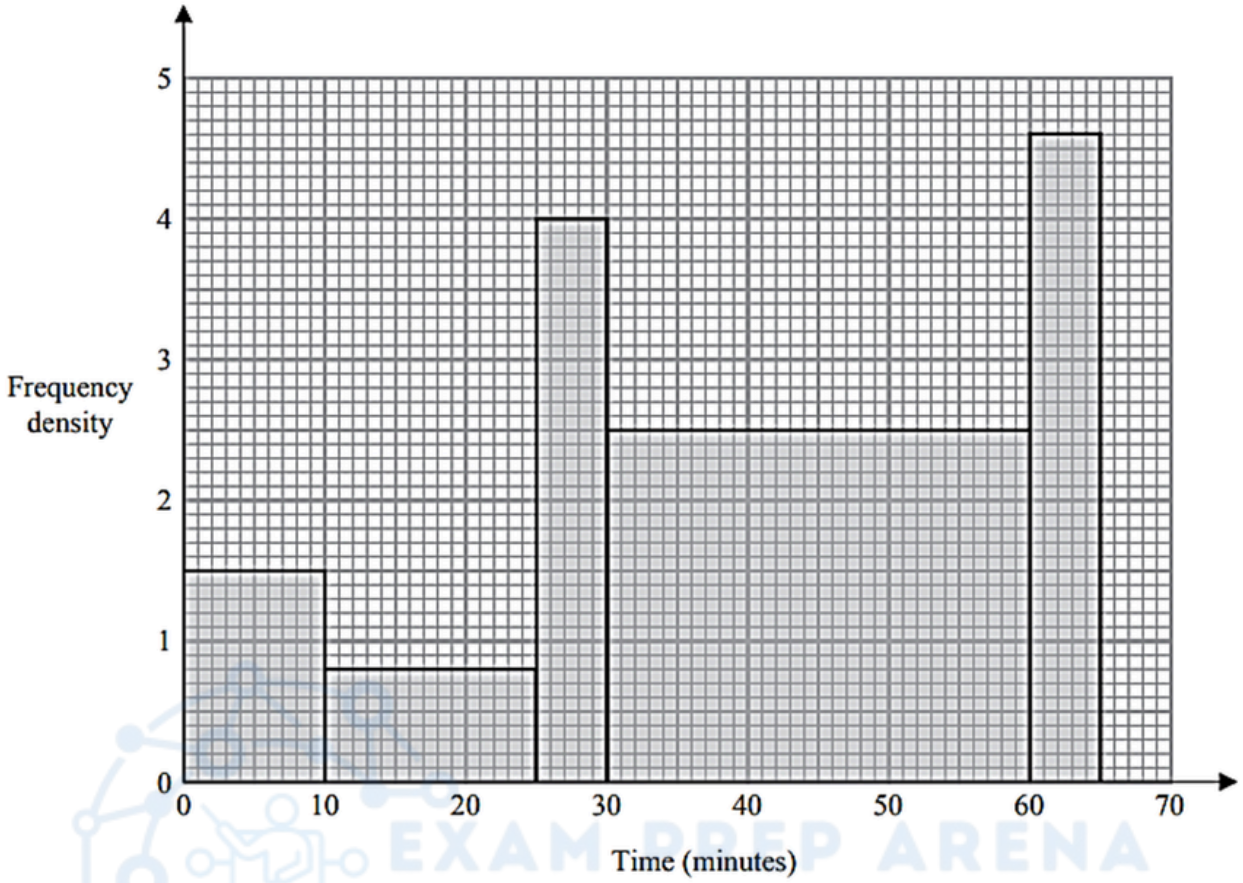
1. Nov 2024 1H/Q18

The histogram shows information about the times some students took to complete a puzzle.



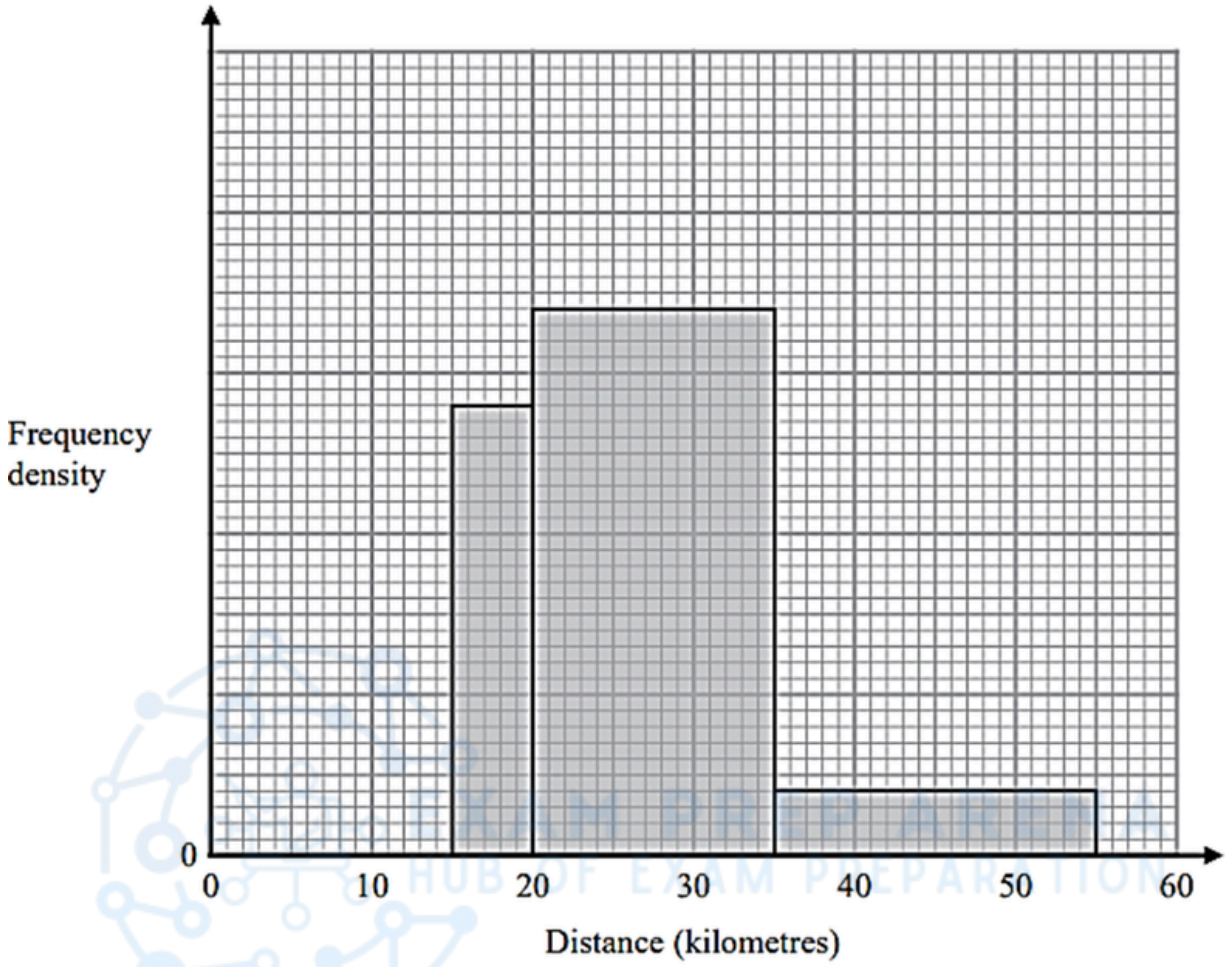
Work out an estimate for the fraction of these students who took between 20 minutes and 60 minutes to complete the puzzle.

.....

(Total for Question 18 is 4 marks)

2. June 2024 1H/Q22

The incomplete histogram shows some information about the distances, in kilometres, that 100 adults ran last week.



All of the adults ran at least 5 kilometres.
None of the adults ran more than 55 kilometres.
14 adults ran between 15 kilometres and 20 kilometres.

Complete the histogram.

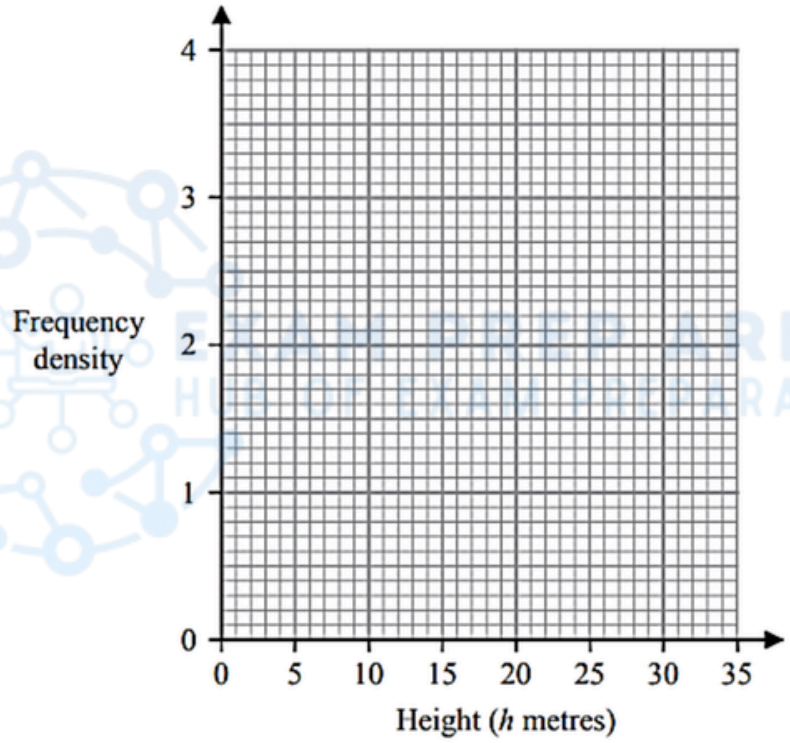
(Total for Question 22 is 3 marks)

3. June 2024 1HR/Q16

The table gives information about the heights, in metres, of the trees in a park.

Height (h metres)	Frequency
$0 < h \leqslant 2$	5
$2 < h \leqslant 5$	12
$5 < h \leqslant 10$	18
$10 < h \leqslant 20$	14
$20 < h \leqslant 35$	9

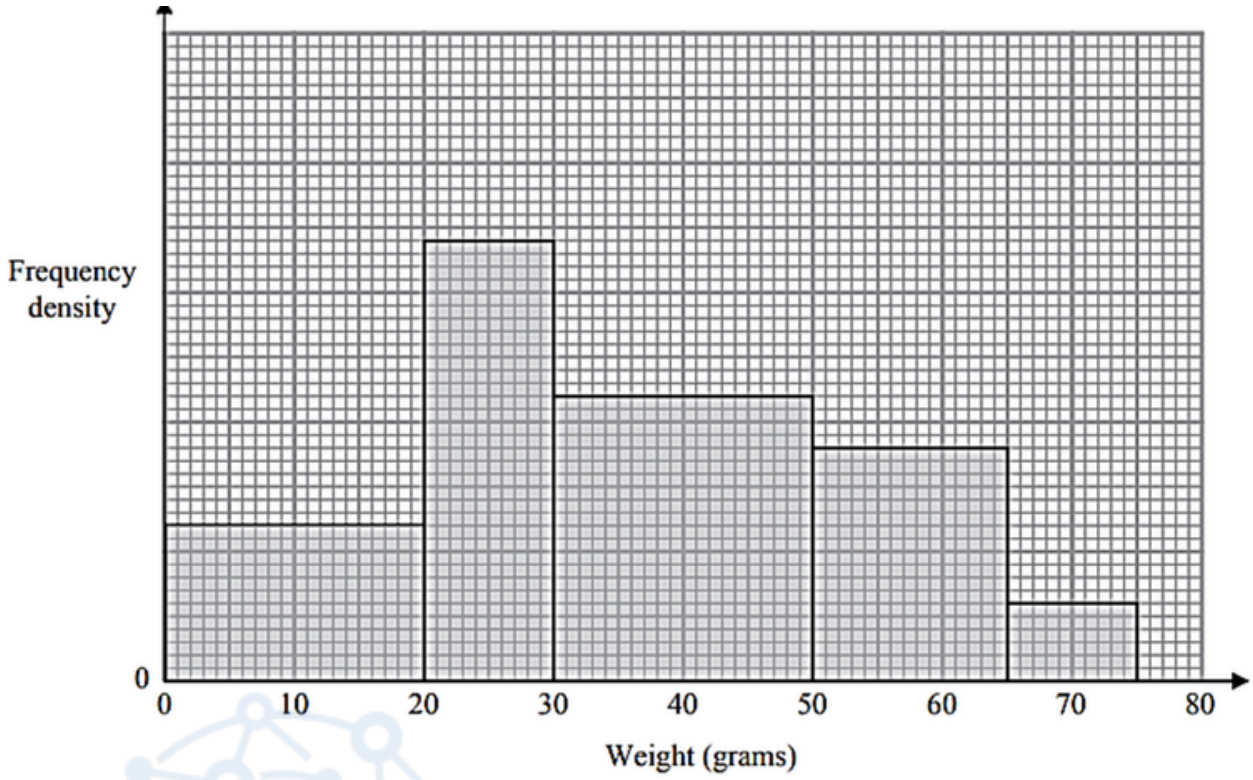
On the grid, draw a histogram for this information.



(Total for Question 16 is 3 marks)

4. Nov 2023 1H/Q 17

The histogram gives information about the weights, in grams, of some oranges in a box.



24 of these oranges weigh less than 20 grams.

Medium oranges weigh between 35 grams and 55 grams.

Work out an estimate for the number of medium oranges in the box.

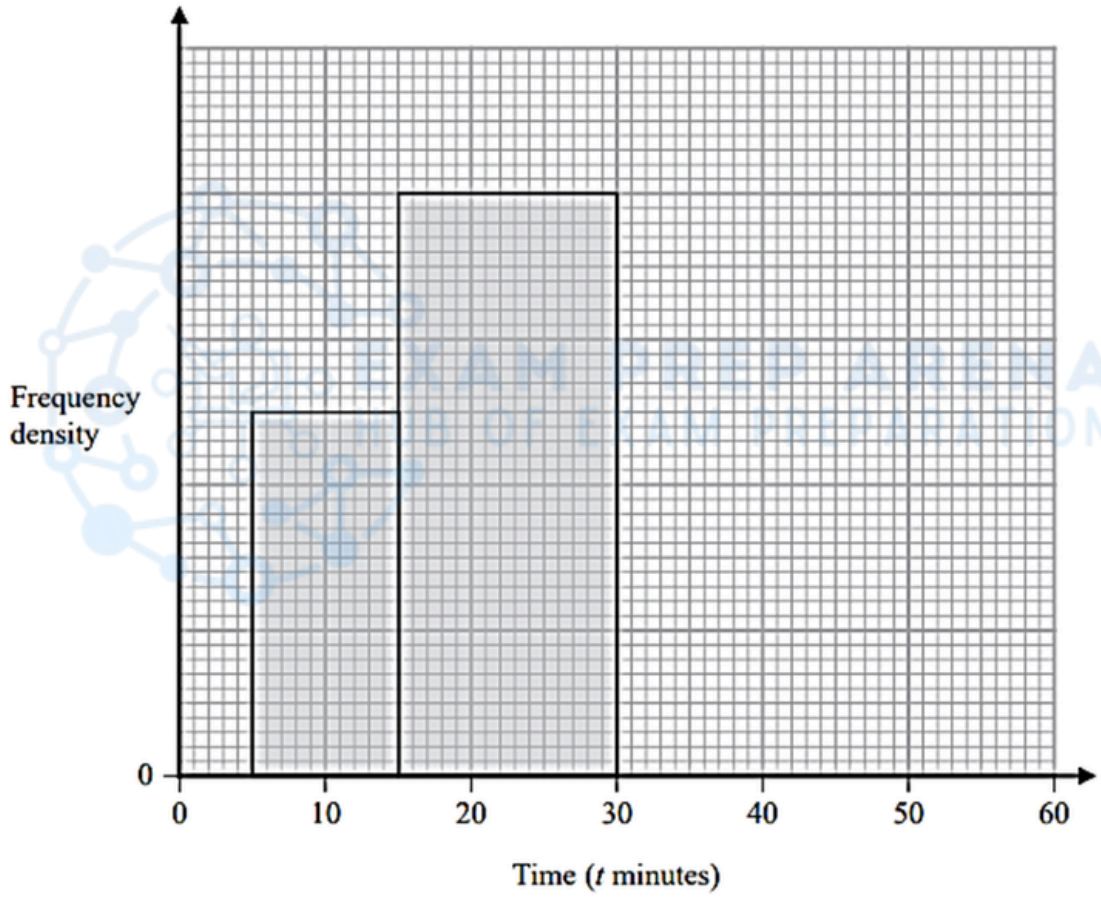
.....

(Total for Question 17 is 3 marks)

5. June 2023 1H/Q 18

The incomplete table and incomplete histogram give information about the times, in minutes, that 140 people waited at a station for a train.

Time (t minutes)	Frequency
$0 < t \leqslant 5$	23
$5 < t \leqslant 15$	
$15 < t \leqslant 30$	
$30 < t \leqslant 40$	18
$40 < t \leqslant 60$	14

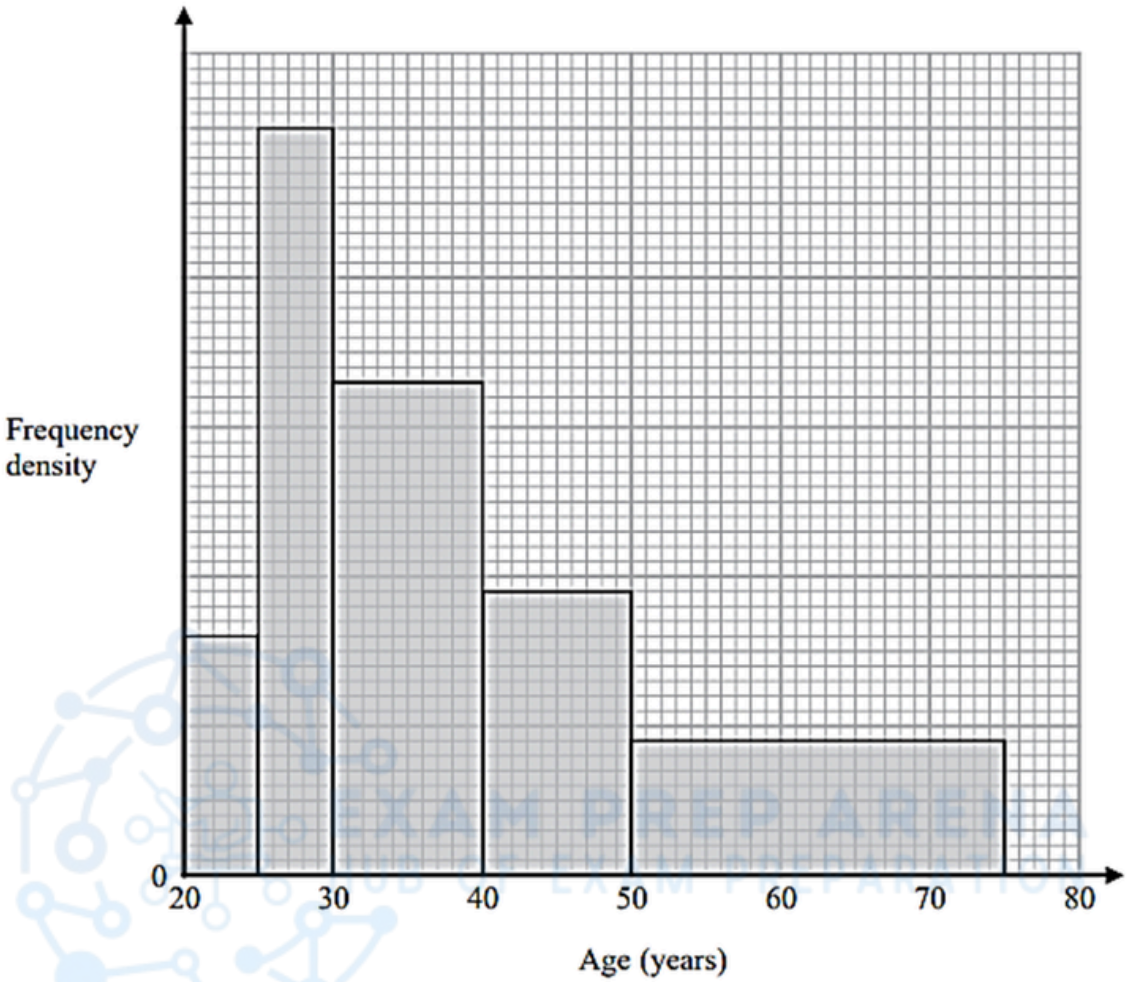


Complete the table and the histogram.

(Total for Question 18 is 4 marks)

6. June 2023 1HR/Q 22

Some people attend a concert.
The histogram shows information about the ages of these people.



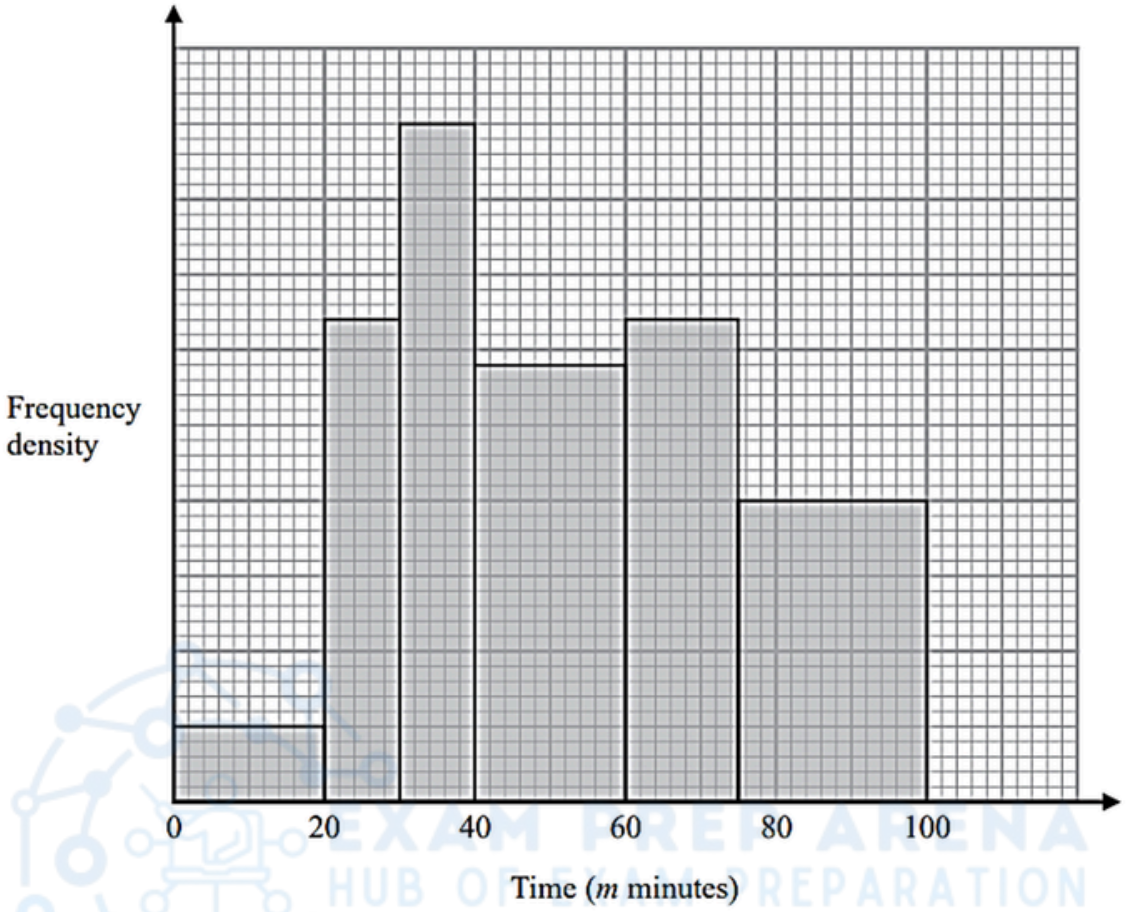
Work out an estimate for the percentage of these people who are aged more than 55 years.
Give your answer correct to one decimal place.

.....%

(Total for Question 22 is 4 marks)

7. June 2022 1H/Q 21

The histogram shows information about the total time, m minutes, taken by each child in a school to walk to school every day for one week.



There are no children for whom $m > 100$
There are 10 children for whom $m \leqslant 20$

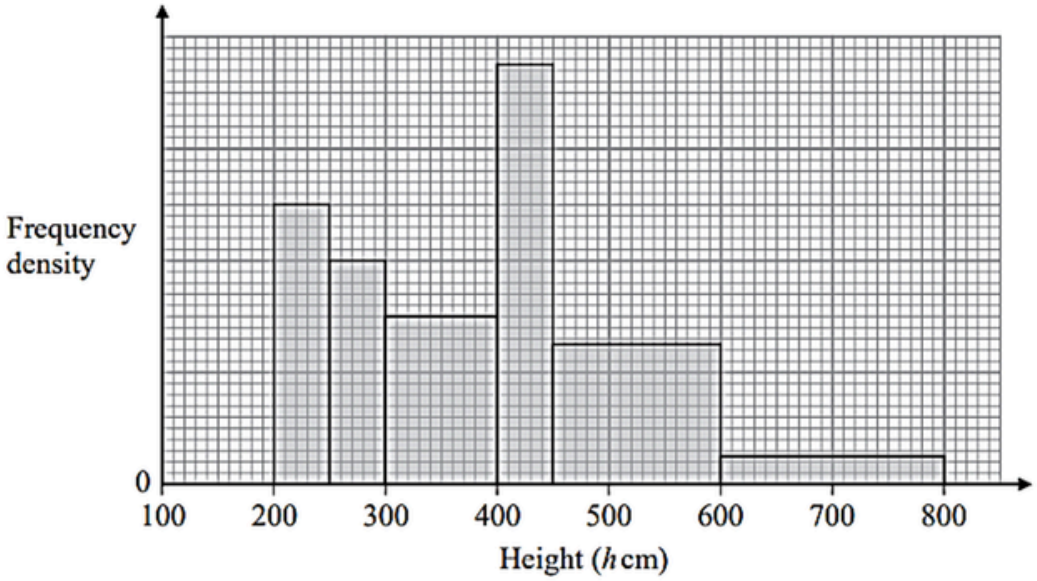
Work out an estimate for the number of children for whom $50 < m \leqslant 80$

.....

(Total for Question 21 is 3 marks)

8. June 2022 1HR/Q 19

The histogram gives information about the height, h cm, of each tree in part of a forest.



There are no trees for which $h \leqslant 200$ and for which $h > 800$

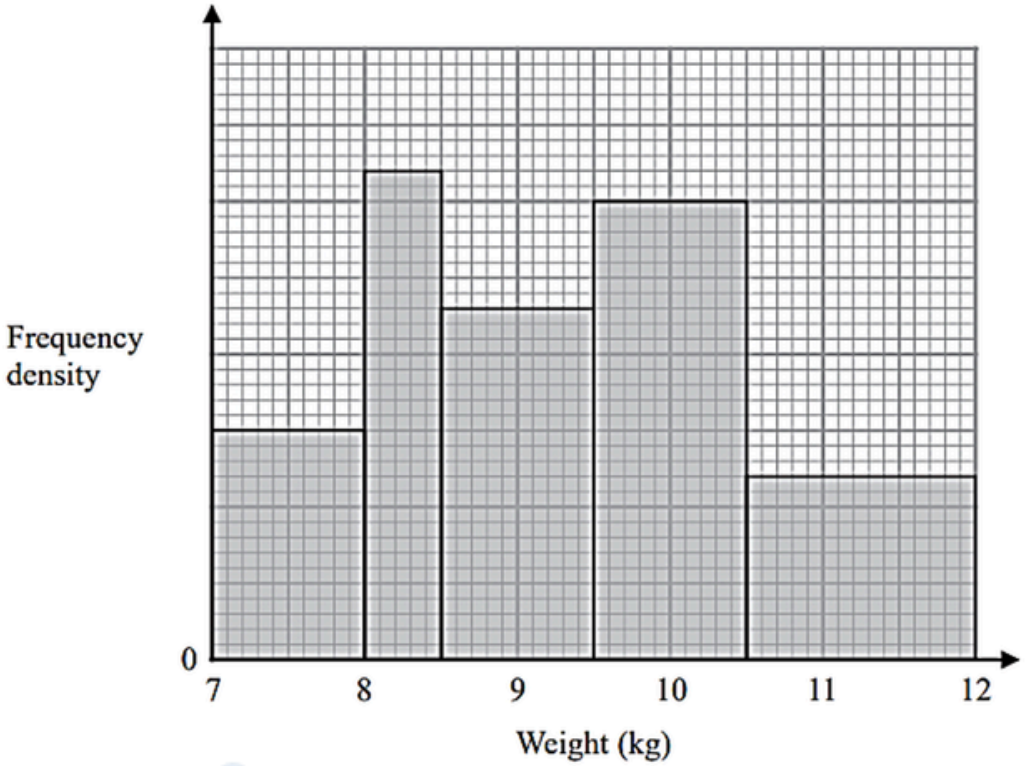
The number of trees for which $300 < h \leqslant 400$ is 8 fewer than the number of trees for which $400 < h \leqslant 500$

Work out an estimate for the number of trees in this part of the forest that have a height greater than 500 cm.

.....

(Total for Question 19 is 3 marks)

9. Jan 2022 1HR/Q 21



The histogram gives information about the weights, in kg, of all the watermelons in a field.

There are 16 watermelons with a weight between 8 kg and 8.5 kg

Work out the total number of watermelons in the field.

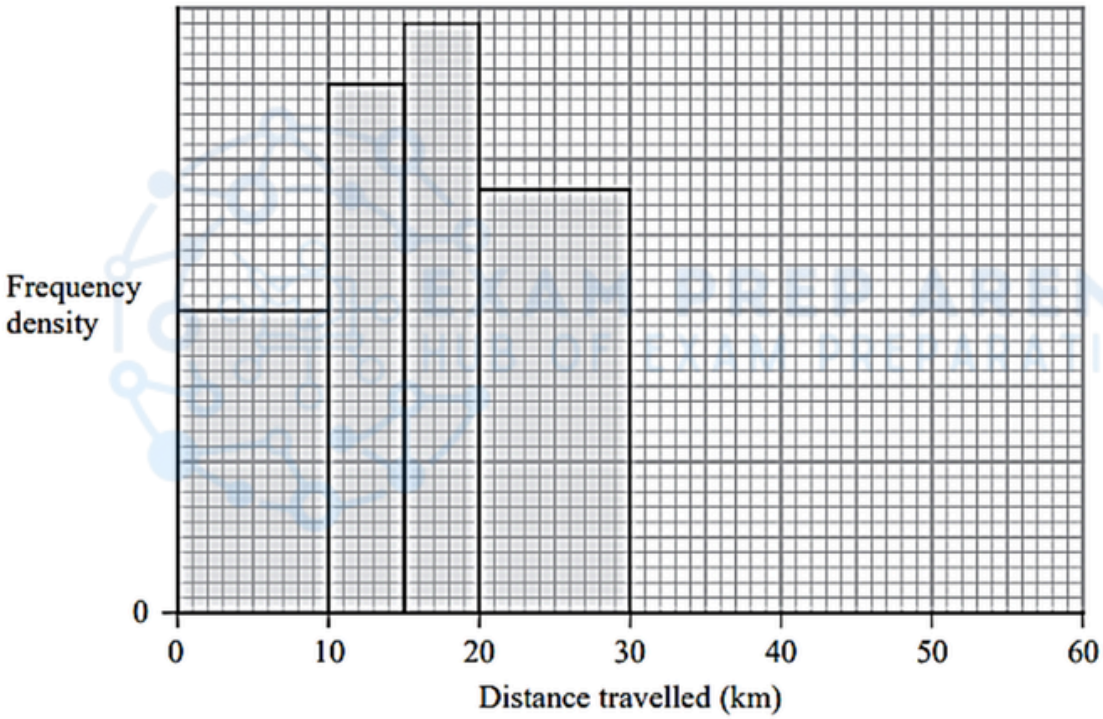
.....

(Total for Question 21 is 3 marks)

10. May 2021 1H/Q 18

The table and histogram give information about the distance travelled, in order to get to work, by each person working in a large store.

Distance (d km)	Frequency
$0 \leqslant d < 10$	40
$10 \leqslant d < 15$	
$15 \leqslant d < 20$	
$20 \leqslant d < 30$	
$30 \leqslant d < 60$	30



Using the information in the table and in the histogram,

(a) complete the table,

(2)

(b) complete the histogram.

(1)

One of the people working in the store is chosen at random.

(c) Work out an estimate for the probability that the distance travelled by this person, in order to get to work, was greater than 25 km.

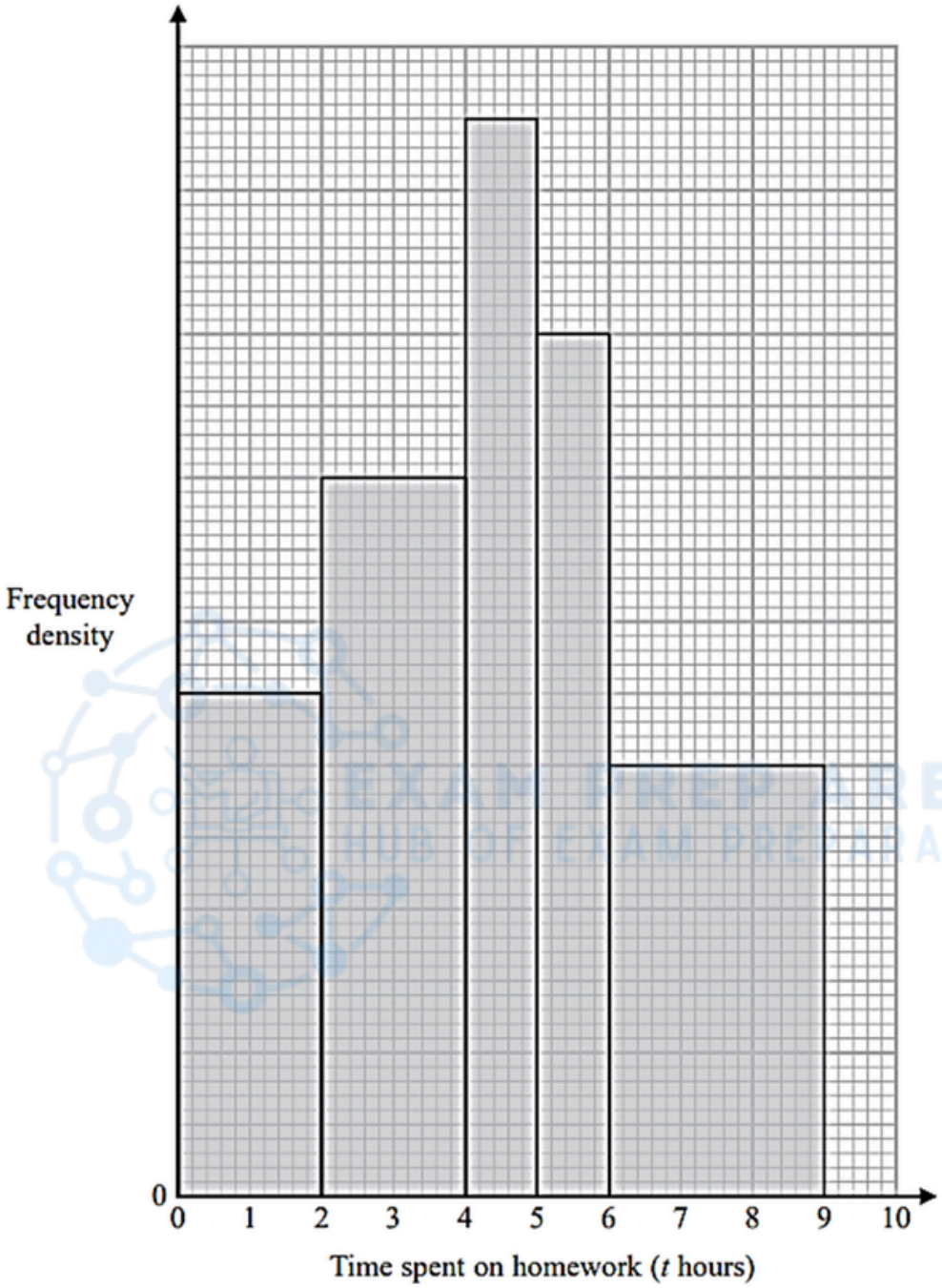
.....

(2)

(Total for Question 18 is 5 marks)

11. Jan 2021 1HR/Q 18

The histogram and the table give some information about the amounts of time, in hours, that Year 11 students at Bergdesh Academy spent, in total, on their homework last week. No student in Year 11 spent longer than 9 hours on their homework.



Time spent on homework (t hours)	Frequency
$0 < t \leqslant 2$	28
$2 < t \leqslant 4$	
$4 < t \leqslant 5$	
$5 < t \leqslant 6$	
$6 < t \leqslant 9$	

Using the information in the histogram and in the table, work out an estimate for the mean amount of time the Year 11 students spent on their homework last week.
Give your answer in hours correct to 3 significant figures.

..... hours

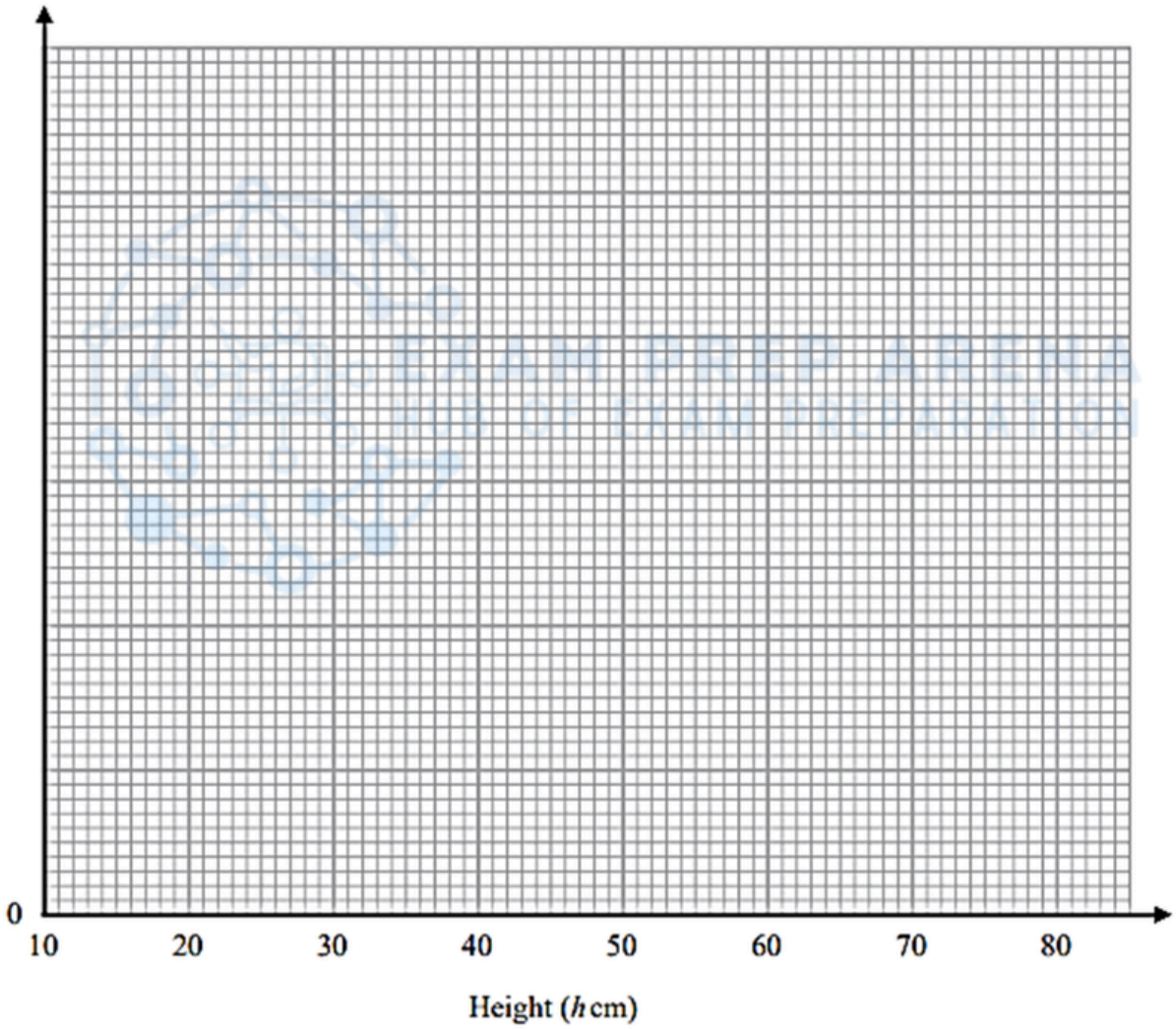
(Total for Question 18 is 5 marks)

12. Nov 2020 1H/Q 18

The table gives information about the heights, in centimetres, of some plants.

Height (h cm)	Frequency
$10 < h \leqslant 20$	35
$20 < h \leqslant 35$	45
$35 < h \leqslant 50$	75
$50 < h \leqslant 70$	40
$70 < h \leqslant 80$	8

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



(3)

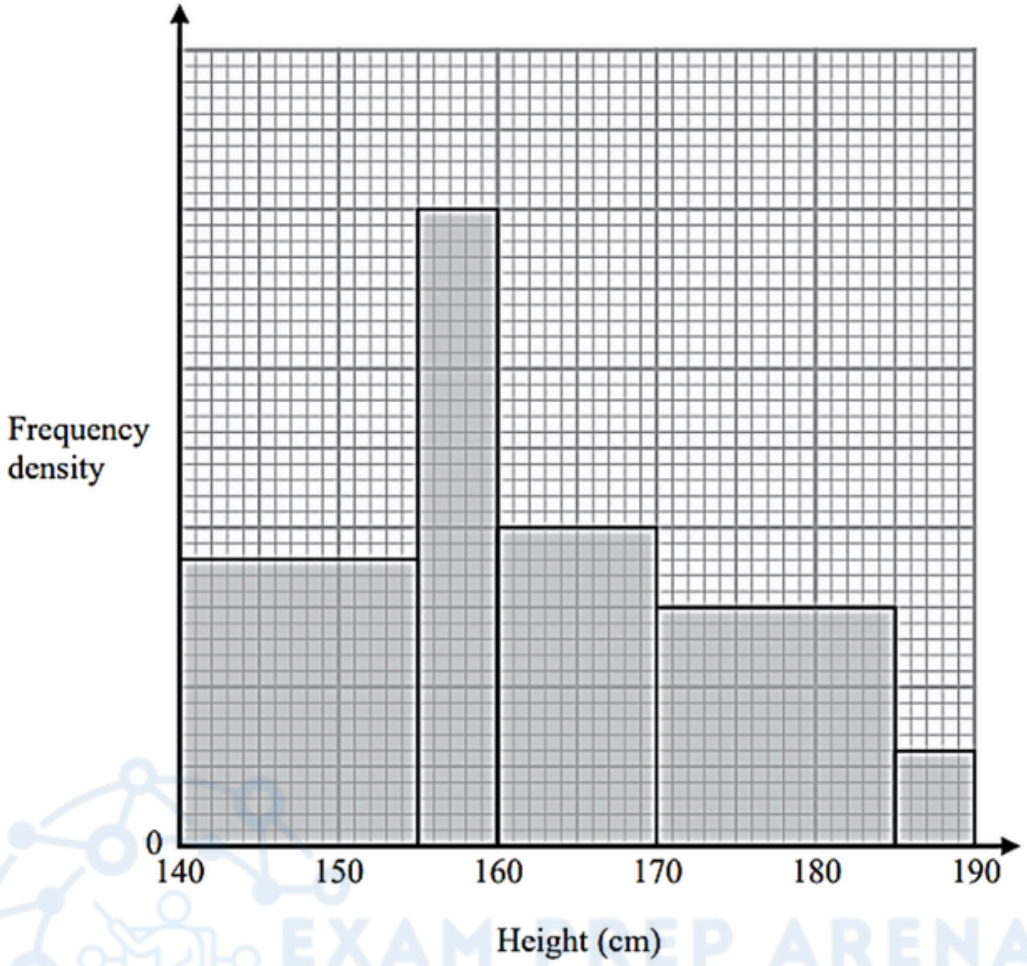
(b) Work out an estimate for the number of these plants with a height greater than 40 cm.

.....

(2)

(Total for Question 18 is 5 marks)

13. Jan 2020 1HR/Q 19



The histogram gives information about the heights of all the Year 11 students at a school.

There are 160 students in Year 11 with a height between 155 cm and 170 cm.

Work out the total number of students in Year 11 at the school.

.....

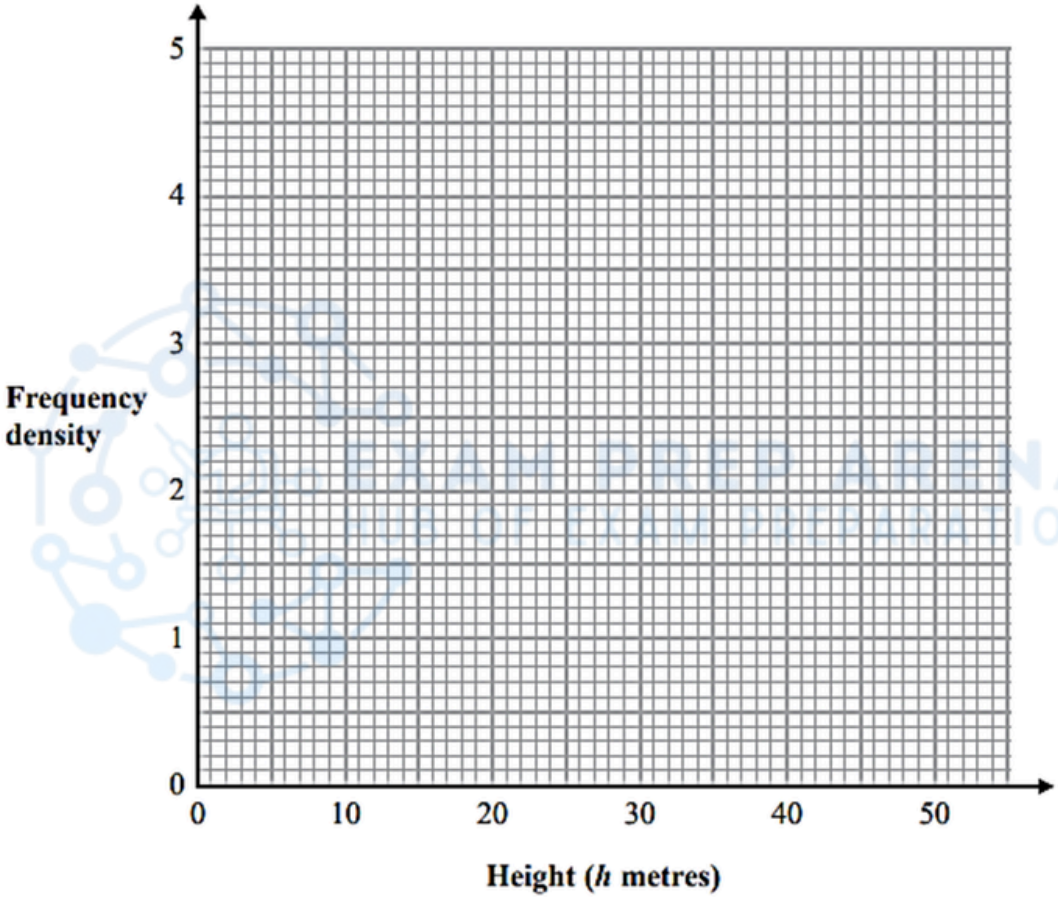
(Total for Question 19 is 4 marks)

14. June 2019 1H/Q 19

The table gives information about the heights of some trees.

Height (h metres)	Frequency
$0 < h \leqslant 20$	15
$20 < h \leqslant 35$	48
$35 < h \leqslant 40$	21
$40 < h \leqslant 50$	16

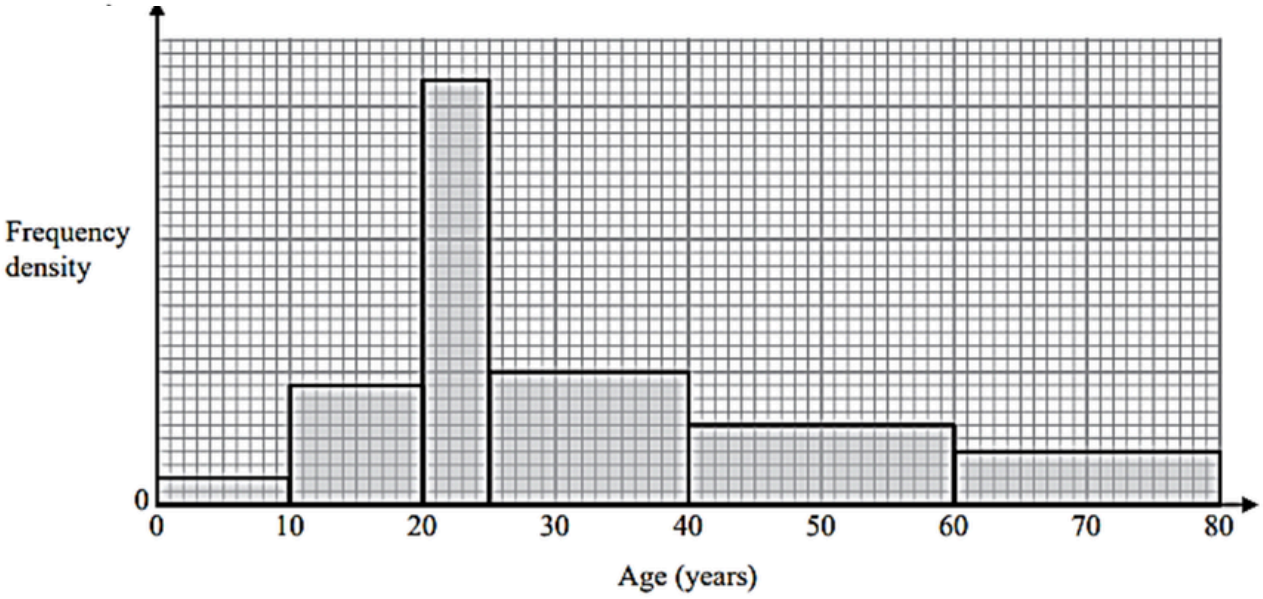
On the grid, draw a histogram for this information.



(Total for Question 19 is 3 marks)

15. June 2019 1HR/Q 17

The histogram shows information about the ages of all the passengers travelling on a plane.
No one on the plane is older than 80 years.



24 passengers on the plane are aged between 40 years and 60 years.

(a) Work out the total number of passengers on the plane.

.....

(3)

A passenger on the plane is picked at random.

(b) Work out an estimate for the probability that this person is older than 55 years.

.....

(2)

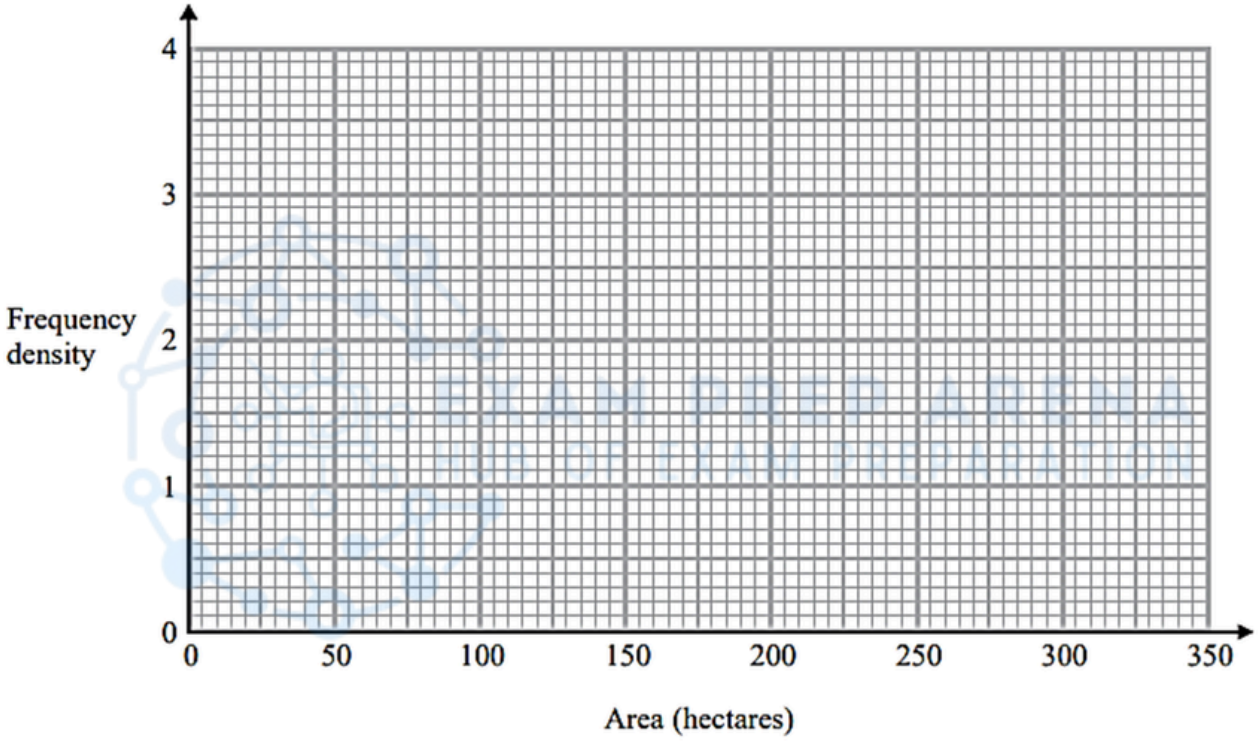
(Total for Question 17 is 5 marks)

16. June 2018 1HR/Q 17

The table gives information about the areas, in hectares, of some farms in Spain.

Area (A hectares)	Frequency
$0 < A \leqslant 20$	40
$20 < A \leqslant 50$	90
$50 < A \leqslant 100$	140
$100 < A \leqslant 300$	140
$300 < A \leqslant 350$	40

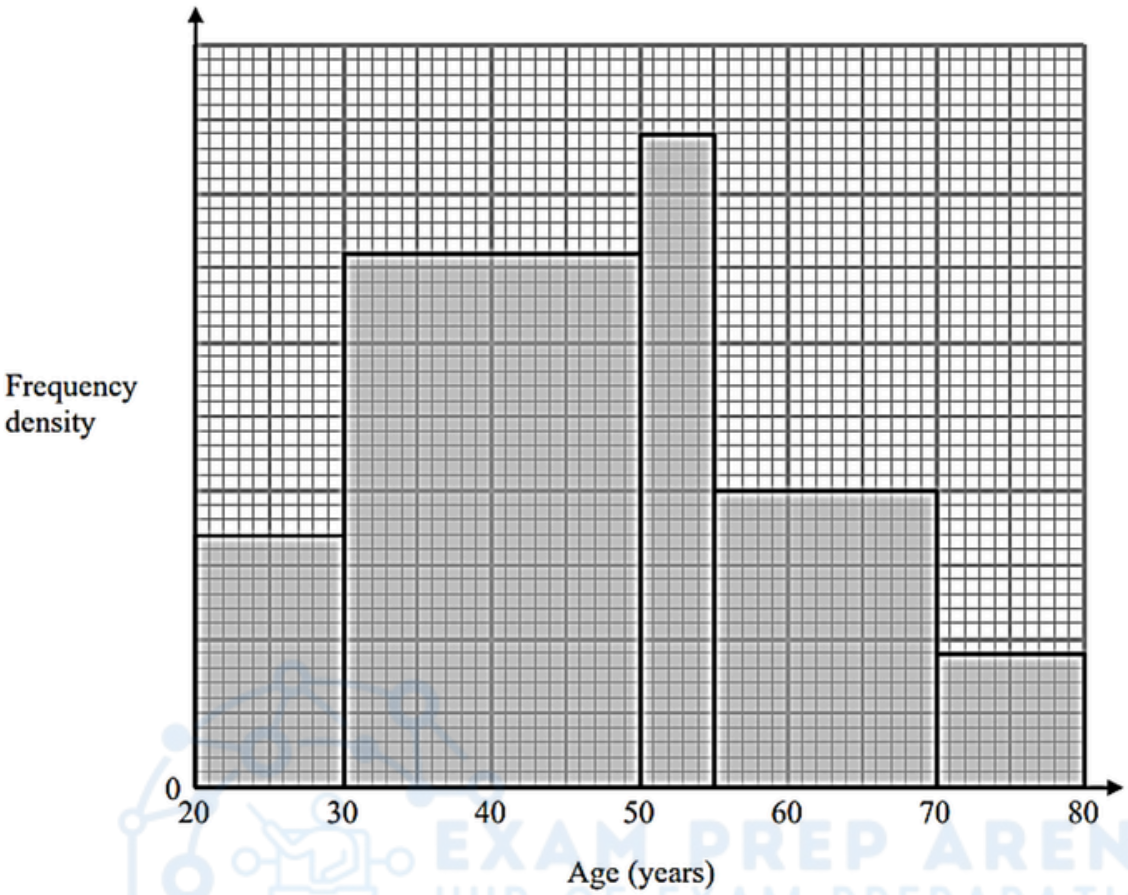
On the grid, draw a histogram for this information.



(Total for Question 17 is 3 marks)

17. Specimen 1H/Q 19

150 people took part in a survey.
The histogram shows information about the ages of these people.



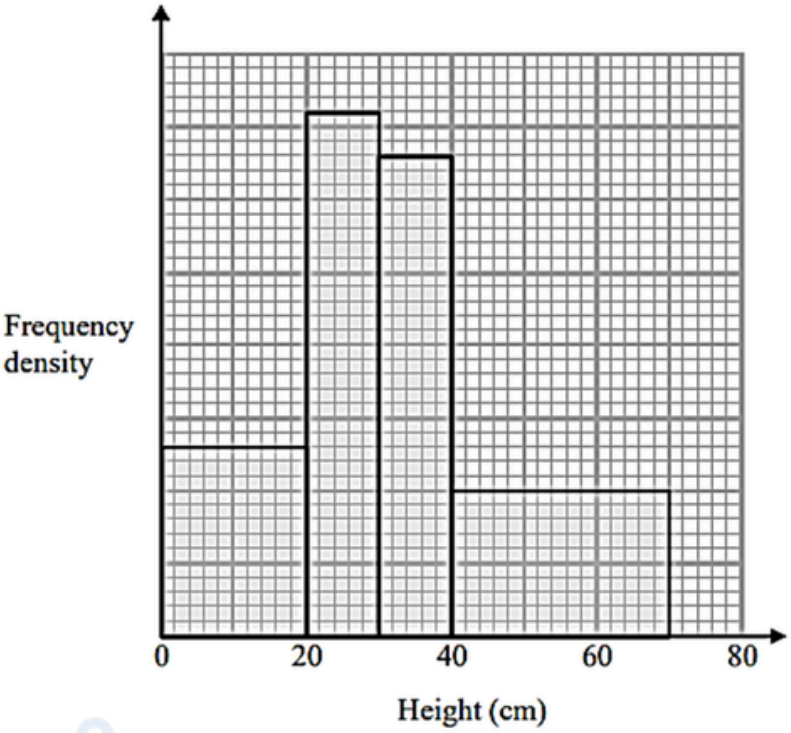
Work out how many of these 150 people are aged between 50 years and 55 years.

.....

(Total for Question 19 is 4 marks)

18. Sample 2018 1H/Q 14

The histogram shows information about the heights of some tomato plants.



26 plants have a height of less than 20 cm.

Work out the total number of plants.

.....

(Total for Question 14 is 3 marks)

MARKING SCHEME

1. Nov 2024 1H/Q18

18	eg two from 1.5×10 (= 15) or 0.8×15 (= 12) or 4×5 (= 20) or 2.5×30 (= 75) or 4.6×5 (= 23) or eg two from 15 or 12 or 20 or 75 or 23 **or** eg two from 150 or 120 or 200 or 750 or 230 or eg two from 6 or 4.8 or 8 or 30 or 9.2		4	M1 for at least two correct frequencies **or** for counting squares or blocks
	eg $1.5 \times 10 + 0.8 \times 15 + 4 \times 5 + 2.5 \times 30 + 4.6 \times 5$ (= 145) or 15 + 12 + 20 + 75 + 23 (= 145) **or** 150 + 120 + 200 + 750 + 230 (= 1450) 6 + 4.8 + 8 + 30 + 9.2 (= 58) **or** $\frac{1}{3} \times$"12"+"20"+"75"(= 99) 4 + 20 + 75 (= 99)			M1 for a method to find the number of students in each time interval with an intention to add Allow one error **or** for a method to find the total number of squares or blocks oe with an intention to add Allow one error **or** for a correct method to find the frequency between 20 and 60 minutes eg 4 + 20 + 75 M2 for a value of 99 for 20 – 60 minute interval
	eg $\frac{0.8\times5+"20"+"75"}{"15"+"12"+"20"+"75"+"23"}$ or $\frac{\frac{1}{3}\times"12"+"20"+"75"}{"145"}$ **or** $\frac{\frac{1}{3}\times"120"+"200"+"750"}{"1450"}$ or $\frac{\frac{1}{3}\times"4.8"+"8"+"30"}{"58"}\left(=\frac{39.6}{58}\right)$			M1 for a complete method Allow the one error in the previous M mark to follow through
	Correct answer scores full marks (unless from obvious incorrect working)	$\frac{99}{145}$		A1 oe but must be a fraction
				Total 4 marks

2. June 2024 1H/Q22

22	eg 14 ÷ 5 (= 2.8) or a correct value on the FD scale or 10 small squares =1 adult oe or 1 large square = 2.5 adults oe or 51 **and** 8 assigned to correct bars (distances)		3	M1 for finding the frequency density **or** for finding the number of adults for squares **or** use of counting squares or blocks
	eg 14 + (15 × "3.4") + (20 × "0.4") (= 73) oe or 100 – [14 + (15 × "3.4") + (20 × "0.4")] (= 27) oe 14 + 51 + 8 (= 73) oe or 100 – [14 + 51 + 8] (= 27) oe or (140 + 510 + 80) × 0.1 (= 73) oe or [1000 – (140 + 510 + 80)] × 0.1 (= 27) oe or (140 + 510 + 80) (= 730) oe or [1000 – (140 + 510 + 80)] (= 270) oe or (5.6 + 20.4 + 3.2) × 2.5 (= 73) oe or [40 – (5.6 + 20.4 + 3.2)] × 2.5 (= 27) oe			M1 for a method to find the area of the bars given or for a method to find the missing area
	Working not required, so correct answer scores full marks (unless from obvious incorrect working)	Correct height of bar at 2.7 and correct width		A1 for correct bar(s) with frequency of 27 SC B2 for a bar of height 2.7 from 0 – 15 SC B2 for a bar of height 1.8 from 0 – 15
				Total 3 marks

3. June 2024 1HR/Q16

16	$5 \div 2$ (= 2.5) oe $12 \div 3$ (= 4) $18 \div 5$ (= 3.6) oe $14 \div 10$ (= 1.4) oe $9 \div 15$ (= 0.6) oe		3	M1	for 3 correct frequency densities or 3 correct bars
				M1	for 4 correct frequency densities or 4 correct bars
	Correct answer scores full marks (unless from obvious incorrect working)	completely correct histogram		A1	completely correct histogram use overlay **SC**: award B2 for all 5 bars of correct width with heights in the correct ratio (eg drawn at 1.25, 2, 1.8, 0.7, 0.3)
					Total 3 marks

4. Nov 2023 1H/Q 17

17	$24 \div 20$ (= 1.2) or a correct value on the FD scale or 10 small squares = 1 orange or 25 small squares (1 large square) = $24 \div 9.6$ = 2.5 oranges oe **or** 9 or 18 or 27 correctly assigned **or** $\frac{3x}{4} + \frac{y}{3}$ where x is their frequency of 3rd bar and y is their frequency of 4th bar		3	M1 for use of area to represent frequency **or** one correct frequency from the $\frac{1}{3}$ of 4th bar (9) or $\frac{2}{3}$ of 4th bar (18) or The 4th bar (27) [NOT 3rd bar = 44] or A method to show the student is finding $\frac{3}{4}$ of 3rd bar + $\frac{1}{3}$ of 4th bar (frequencies to be seen on diagram or identified in working)
	eg $(15 \times 2.2) + (5 \times 1.8)$ oe or $33 + 9$ or $44 + 27 - 11 - 18$ or $(330 + 90) \div 10$ oe or $(13.2 + 3.6) \times 2.5$ oe			M1 for a complete method
	Working not required, so correct answer scores full marks (unless from obvious incorrect working)	42		A1
				Total 3 marks

5. June 2023 1H/Q 18

18	140 – (23 + 18 + 14) (= 85) **and** state the area of the 2 given bars, eg 34 (1 cm) squares or 8.5 large squares or 850 small squares oe **OR** 23 ÷ 5 (= 4.6 oe) **or** 18 ÷ 10 (= 1.8 oe) **or** 14 ÷ 20 (= 0.7 oe)		4	M1
	Use of frequency density for the given bars eg "85" ÷ 34 = 2.5 [(1 cm) square = 2.5 people] or "85" ÷ 8.5 = 10 [1 large square = 10 people] or "85" ÷ 850 = 0.1 [1 small square = 0.1 people] or 10 small squares = 1 person **OR** 23 ÷ 5 (= 4.6 oe) **and** 18 ÷ 10 (= 1.8 oe) **and** 14 ÷ 20 (= 0.7 oe)			M1 **or** 2 correct values in the table **or** 2 or 3 correct bars
	Correct answer scores full marks (unless from obvious incorrect working)	$5 < t \leq 15$ has frequency 25 $15 < t \leq 30$ has frequency 60 Bars of 4.6, 1.8, 0.7 correctly drawn to scale		A2 (A1 for **4** of $5 < t \leq 15$ has frequency 25 $15 < t \leq 30$ has frequency 60 bar of 4.6, bar of 1.8, bar of 0.7)
				Total 4 marks

6. June 2023 1HR/Q 22

22	e.g. 20 × 9 (= 180) or 20 × 0.9 (= 18) or 20 × 1.8 (= 36) or (4 × 25) + (4 × 20) (= 180) oe or 4 × 0.9 (= 3.6) or 4 × 1.8 (7.2)		4	M1 for a method to find the area of the 55 - 75 bar
	e.g. 5 × 16 + 5 × 50 + 10 × 33 + 10 × 19 + 25 × 9 (= 1075) or 5 × 1.6 + 5 × 5 + 10 × 3.3 + 10 × 1.9 + 25 × 0.9 (= 107.5) or 5 × 3.2 + 5 × 10 + 10 × 6.6 + 10 × 3.8 + 25 × 1.8 (= 215) or (3×25 + 5) + (10×25) + (12×25 + 2×15) + (6×25 + 2×20) + (5×25 + 5×20) (= 1075) or 1 × 1.6 + 1 × 5 + 2 × 3.3 + 2 × 1.9 + 5 × 0.9 (= 21.5) or 1 × 3.2 + 1 × 10 + 2 × 6.6 + 2 × 3.8 + 5 × 1.8 (= 43)			M1 for a method to find the total area **Using 5 bars** (products or areas) eg 80 + 250 + 330 + 190 + 225 or 16 + 50 + 66 + 38 + 45 allow one error or omission **Using 6 bars** (products or areas) eg 80 + 250 + 330 + 190 + 45 + "180" or 16 + 50 + 66 + 38 + 9 + "36" allow one error or omission
	e.g. $\frac{180}{1075}(\times 100)$ or $\frac{18}{107.5}(\times 100)$ or $\frac{36}{215}(\times 100)$ or $\frac{3.6}{21.5}(\times 100)$ or $\frac{7.2}{43}(\times 100)$ or 0.167(441…) (× 100)			M1 for a method to find a fraction aged 55+ or percentage aged 55+ using all **correct** values only
	Correct answer scores full marks (unless from obvious incorrect working)	16.7		A1 awrt 16.7
				Total 4 marks

7. June 2022 1H/Q 21

21	10 ÷ 20 (= 0.5) or a correct value on the FD scale and no errors or 25 small squares = 5 children or 5 small squares = 1 child oe or 1 small square = 0.2 children oe or 29 oe or 48 oe or 10 (associated with 75-80 bar)		3	M1
	(10 × 2.9) + (15 × 3.2) + (5 × 2) or 29 + 48 + 10 or (5.8 + 9.6 + 2) × 5 oe or (145 + 240 + 50) × 0.2 oe			M1for a fully correct method
		87		A1
				Total 3 marks

7. June 2022 1H/Q 21

21	10 ÷ 20 (= 0.5) or a correct value on the FD scale and no errors or 25 small squares = 5 children or 5 small squares = 1 child oe or 1 small square = 0.2 children oe or 29 oe or 48 oe or 10 (associated with 75-80 bar)		3	M1
	(10 × 2.9) + (15 × 3.2) + (5 × 2) or 29 + 48 + 10 or (5.8 + 9.6 + 2) × 5 oe or (145 + 240 + 50) × 0.2 oe			M1for a fully correct method
		87		A1
				Total 3 marks

8. June 2022 1HR/Q 19

19	eg (7.5+2.5) − 6 = 4 large squares represents 8 trees **or** 5 × 37.5 + 5 × 12.5 – 10 × 15 = 100 small squares represents 8 trees 200 – 250 = 10 250 – 300 = 8 300 – 400 = 12 400 – 450 = 15 450 – 600 = 15 (or 450 – 500 = 5 or 500 – 600 = 10) 600 – 800 = 4		3	M1	oe eg 1 large square represents 2 trees **or** 12.5 small squares represents 1 tree **or** a frequency density axis scale where one large square vertically is FD of 0.04 with no contradictions **or** a correct frequency for any bar (could be seen on the diagram)
	5 × 2 + 2 × 2 **or** $\frac{10\times12.5+20\times2.5}{100}\times8$ oe **or** 100 × 0.1 + 200 × 0.02			M1	for a correct method to find the total number of trees greater than 500 cm.
		14		A1	
					Total 3 marks

9. Jan 2022 1HR/Q 21

21	16 ÷ 0.5 (= 32) or a correct value on the FD scale or 10 small squares =1 watermelon oe 25 small squares (1 large square) =16 ÷ 6.4 = 2.5 watermelon oe			M1 for use of area to represent frequency or one correct frequency from the 4 remaining bars
	15 × 1 + 16 + 23 × 1 + 30 × 1 + 12 × 1.5 **or** 15 + 16 + 23 + 30 + 18 **or** 16 + 0.1 × (15 × 10 + 23 × 10 + 30 × 10 + 12 × 15) oe **or** (150 + 160 + 230 +300 +180) × 0.1 oe **or** (6 + 6.4 + 9.2 + 12 + 7.2) × 2.5 oe			M1 (dep on M1) for a fully correct method, allow one error in products or number of squares but must be the sum of 5 parts
		102		A1
				Total 3 marks

10. May 2021 1H/Q 18

18	(a)	eg height of first bar labelled as FD 4 **or** one 1 cm by 1 cm square = 5 people **or** 1 line of 5 small squares = 1 person **or** one 2cm by 2 cm square = 20 people etc		2	M1	for the use of frequency density – ie that area is proportional to frequency – with either a correct frequency density unambiguously labelled on axis **or** for an area representing a correct number of people **or** 2 correct frequencies completed
		Working not required, so correct answer scores full marks (unless from obvious incorrect working)	35, 39, 56		A1	All 3 correct
	(b)		Correct bar	1	B1	Width from 30 – 60 and height 1 cm
	(c)	0.5 × "56" + 30 (= 58) **or** 40 + "35" + "39" + "56" + 30 (= 200)		2	M1ft	follow through **their** stated value for $20 \leq d < 30$ for total greater than 25 or ft **their** 3 values in the table for total
		Working not required, so correct answer scores full marks (unless from obvious incorrect working)	$\frac{58}{200}$		A1ft	ft dep on a completed table oe eg $\frac{29}{100}$ **or** 0.29 **or** 29%
						Total 5 marks

11. Jan 2021 1HR/Q 18

18	E.g. 28 ÷ 2 (= 14) **or** 1cm^2 = 2 students		5	M1	for method to find the frequency density for the first bar **or** any correct value on the fd axis **or** can be implied by a correct frequency (30 or 24 or 36)
	2 × 20 (= 40) 1 × 30 (= 30) 1 × 24 (= 24) 3 × 12 (= 36) **or** 40, 30, 24, 36			M1	for method to find the missing frequencies (at least 3 correct)
	1 × 28 + 3 × '40' + 4.5 × '30' + 5.5 × '24' + 7.5 × '36' (= 685) or 28 + 120 + 135 + 132 + 270 (= 685)			M1	(indep ft) for a method to find the total (mid value × frequency) for at least **4** products using **their** values in the table (need not be evaluated) Allow consistent use of end points for at least **4** products which must be added
	'685' ÷ (28 + '40' + '30' + '24' + '36') (= 4.335...) or '685' ÷ 158 (= 4.335...)			M1	(dep on previous M1)
		4.34		A1	accept 4.33 - 4.34
					Total 5 marks

12. Nov 2020 1H/Q 18

18 (a)	35 ÷ 10 (=3.5), 45 ÷ 15 (=3), 75 ÷ 15 (=5), 40 ÷ 20 (=2), (8 ÷ 10) = 0.8		3	M1	for any two correct fd **or** two correct bars drawn of different widths
	35 ÷ 10 (=3.5) **and** 45 ÷ 15 (=3) **and** 75 ÷ 15 (=5) **and** 40 ÷ 20 (=2) **and** (8 ÷ 10) = 0.8			M1	for all correct fd **or** at least 3 correct bars drawn
				A1	for a fully correct histogram with 'frequency density' (or fd) and scale on the axis labelled or appropriate key (SC: B2 for all five bars drawn of correct width with heights in the correct ratio) (SC: B1 for three bars drawn of correct width with heights in the correct ratio)
(b)	10 × 5 + 40 + 8 or $\frac{2}{3}$ × 75 + 40 + 8		2	M1	ft from their histogram in (a) for a correct method
		98		A1	
					Total 5 marks

13. Jan 2020 1HR/Q 19

19	eg $5 \times 2x + 10 \times x = 160$ **OR** $160 \div 2$ (= 80) [freq of one bar] **OR** $40 \times 5 + 20 \times 10$ (= 400) [total no. of sml squares] **OR** $160 \div 16$ (= 10) [students per $1cm^2$] **OR** $1cm^2 = 10$ students **OR** **e.g.** 5 small squares = 2 students oe			M1	for setting up an appropriate equation **OR** finding the area of the 2nd or 3rd bar **OR** finding the total number of small squares **OR** for finding the number of students per $1cm^2$ **or** $1cm^2 = 10$ students **OR** other appropriate scale e.g. 5 small squares = 2 students
	'x' = 8 **OR** 8 or 16 seen in the correct position on the vertical scale **OR** $160 \div$ "400" (= 0.4 oe)			M1	for finding frequency density **OR** method to find the frequency of the 1st, 4th or 5th bar (1st is 108, 4th is 90, 5th is 12)
	"7.2" × 15 + 160 + "6" × 15 + "2.4" × 5 **OR** 160 + "0.4" × (18 × 15 + 15 × 15 + 5 × 6)			M1	(dep on at least M1) for a complete method to find the total frequency (allow one error or one repeat but no omission)
		370	4	A1	
					Total 4 marks

14. June 2019 1H/Q 19

19		15 ÷ 20 (=0.75) 48 ÷ 15 (=3.2) 21 ÷ 5 (=4.2) 16 ÷ 10 (=1.6)	correct histogram	3	B3	For a fully correct histogram [If not B3 then B2 for 3 correct frequency densities (can be implied by heights) or 3 correct bars drawn If not B2 then B1 for 2 correctly calculated frequency densities (can be implied by heights) or 2 correct bars drawn.]
						Total 3 marks

15. June 2019 1HR/Q 17

17	(a)	e.g. one correct value on the vertical scale e.g. 1 at 1 cm high **or** 1 cm^2 = 5 passengers **or** 5 small squares = 1 passenger **or** (FD =) 24 ÷ 20 (= 1.2)		3	M1	For a correct scale on the vertical axis **or** a 1 cm × 1 cm square = 5 passengers **or** other correct scale **or** one correct product or frequency (other than the 24) **or** (FD =) 24 ÷ 20 (= 1.2)
		10×0.4 (= 4) 10×1.8 (= 18) 5×6.4 (= 32) 15×2 (= 30) 20×0.8 (= 16)			M1	At least 3 correct products or frequencies (other than the 24) stated (could be seen on diagram)
			124		A1	
	(b)	e.g. 0.25 × 24 + 20 × 0.8 (= 22) **or** "1.2" × 5 + 20 × 0.8 (= 22)		2	M1	ft from (a)
			$\frac{"22"}{"124"}$		A1ft	oe (0.17(741...))
						Total 5 marks

16. June 2018 1HR/Q 17

17	FDs are 2, 3, 2.8, 0.7, 0.8	Correct histogram	3	M1	for any two correct FD calculations (can be implied by at least two correct bars)
				M1	for any three correct FDs (can be implied by at least three correct bars)
				A1	fully correct histogram
				(SC: B2 for all five bars of correct width with heights in the correct ratio)	
				(SC:B1 for three bars of correct width with heights in the correct ratio)	
				Total 3 marks	

17. Specimen 1H/Q 19

19	e.g. 8.8×5 (=44)			M1	for finding area of 50 – 55 bar
	e.g. 3.4×10 (=34) + 7.2×20 (=144) + 8.8×5 (=44) + 4×15 (=60) + 1.8×10 (=18) (=300)			M1	for method to find total area (condone two errors)
	$\frac{"44"}{"300"} \times 150$			M1	(dep on M2) for complete method
		22	4	A1	
				Total 4 marks	

18. Sample 2018 1H/Q 14

14	26÷20 (=1.3) **or** 3.6×10 or 3.3×10 or 1×30 **or** 36 or 33 or 30 **or** $\frac{26}{130}\left(=\frac{1}{5}\right)$ $26 + 3.6\times10 + 3.3\times10 + 1\times30$ **or** $26 + 36 + 33 + 30$ **or** $625\times\frac{1}{5}$ **or** $(130+180+165+150)\times\frac{1}{5}$			AO3	M1	Any one frequency density (without contradiction) or, e.g. $1cm^2 = 5$ **or** clear association of area with frequency
		125	3		M1	Any fully correct complete method; condone one error in bar width or bar height
					A1	