Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
17 (a)	1.5, 6, 10.2, 7.2, 1.2	Histogram drawn	C1	for 2 correct bars of different widths or at least 3 correct frequency densities.
			C1	for all bars in correct proportions or 4 correct bars with axes scaled and labelled.
Q1			C1	for fully correct histogram with axes scaled and labelled.
(b)		$\frac{123}{150}$	M1	for a method to find number of students in interval, eg $30 + 51 + 36 + \frac{1}{3} \times 18$ (= 123) or $150 - 15 - \frac{2}{3} \times 18$ (= 123)
			A1	for $\frac{123}{150}$ oe or 0.82 or 82%

Paper: 1MA1/2H				
Question	**Working**	**Answer**	**Mark**	**Notes**
13 **Q2**		7	P1 P1 A1	for correct process to find any frequency, eg. "1.1" × 10 (= 11) or "2.8" × 10 (= 28) or "2.3" × 20 (= 46) or "1.4" × 20 (= 28) or "1.4" × 10 (= 14) or "0.7" × 30 (= 21) or for a correct process to find the total area and an area of any block, eg. using 1 cm^2 = 1 unit of area to get 53.6 and one of 4.4, 11.2, 18.4, 11.2, 5.6, 8.4 (dep P1) for complete process to find 20% of ("1.4" × 10 + "0.7" × 30), eg. $\frac{20}{100} \times "35"$ or $\frac{"5.6"+"8.4"}{"53.6"} \times 134 \times \frac{20}{100}$ cao

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 (a)	4, 6, 5, 4	M1	for a correct method to find at least 2 frequencies from bars of different widths, eg 10 × 0.4 (=4), 10 × 0.6 (=6), 5 × 1 (=5), 20 × 0.2 (=4)	
Q3		A1	cao	
(b)	10	M1	for $\frac{23+1}{4}$ (=6) **or** $\frac{23}{4}$ (=5.75) could ft from their table in (a)	
		A1	for 10 or 9.375	Be aware of 10 coming from incorrect working ft does not apply to the A1

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
Q4 21	210	M1	for method to find total frequency, 60 × 2 (= 120) + 30 × 5 (= 150) + 30 × 9 (= 270) + 15 × 6 (= 90) + 45 × 2 (= 90) or 720 **OR** for method to find the total area, 4 + 5 + 9 + 3 + 3 (= 24 cm^2)	Accept one error in total for the award of the method marks 24 must be from adding areas of bars not heights of bars
		M1	for finding the number of onions less than 60g or greater than 120 g = 120 + 90 + 90 (= 300), **OR** for finding the number of onions between 60g and 120g = 150 + 270 (= 420) **OR** for finding the area under the graph less than 60 or greater than 120 = 4 + 3 + 3 (= 10 cm^2) **OR** for finding the area under the graph between 60 and 120 = 5 + 9 (= 14 cm^2)	14 must be from adding areas of bars not heights of bars
		M1	(dep M2) for $1 - \frac{"300"}{"720"} (= \frac{7}{12})$ oe OR for $\frac{"420"}{"720"} (= \frac{7}{12})$ oe OR for $\frac{"14"}{"24"} (= \frac{7}{12})$ oe	Accept 58.3...%
		A1	cao	

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 **Q5**	7.645	P1	for process to use area to find at least one frequency, eg for first frequency $(7.2 - 6.4) \times 10$ (= 8) or $(7.2 - 6.4) \times 5$ (= 4) or $4 \times 5 \times 5$ (= 100)	Frequencies could be written on the graph
		P1	for process to find all frequencies, eg 8, 20, 40, 12 or multiples eg 4, 10, 20, 6 or 100, 250, 500, 150	Marks are for correct processes, one or more frequencies may be incorrect
		P1	(dep P2) for process to estimate mean, eg $((6.8 \times [8]) + (7.4 \times [20]) + (7.8 \times [40]) + (8.1 \times [12])) \div ([8] + [20] + [40] + [12])$	
		A1	for 7.645 (accept 7.65)	Award full marks if a correct answer is seen in working and is then incorrectly rounded.

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 **Q6**	30	P1	for process to find one correct frequency, eg. 0.8 × 5 (= 4) or 1.6 × 10 (= 16) or 2.2 × 10 (= 22) or 1.2 × 15 (= 18) **or** to find one correct area eg 5 × 8 (=40) or 10 × 16 (=160) or 10 × 22 (=220) or 15 × 12 (=180)	Accept equivalent methods proportional to those shown.
		P1	for process to find total number of people, eg. "4" + "16" + "22" + "18" (= 60) **or** for process to find total area eg "40" + "160" + "220" + "180" (= 600)	Condone 1 error in reading from the graph for 2nd and 3rd P marks
		P1	for process to find 20% of the total number of people, eg. "60" × 0.2 oe (= 12) **or** for process to find 20% of the total area "600" × 0.2 oe (=120)	
		A1	cao	NB: correct answer without supportive working gets 0 marks

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 (a) **Q7**	Histogram drawn	B3 (B2 (B1	for fully correct histogram eg relative heights 6, 3, 4, 2, 2 for 4 correct blocks **or** all 5 frequency ÷ class interval **and** 1 correct block) for at least 2 correct blocks of different widths **or** for frequency ÷ class interval for at least 3 frequencies)	
(b)	66 to 71	M1 A1	indication of the median in the third interval **or** proportional method shown ft answer between 66 and 71	Just stating the interval is sufficient for this mark May be implied by the number on the answer line Median is at (approx.) 68.75 by a proportional method

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
18 **Q8**	Bar of height 3.2	M1	method to find any frequency eg 1.2 × 2.5 (= 3) or 2 × 2.5 (= 5) or 2.8 × 5 (= 14) or 0.8 × 12.5 (= 10) **or** method to use areas eg 12 × 5 (=60) or 20 × 5 (=100) or 28 × 10 (=280) or 8 × 25 (=200)	Accept equivalent methods proportional to those shown
		M1	complete method to find total frequency for the four intervals eg "3" + "5" + "14" + "10" (=32) **or** "60" + "100" + "280" + "200" (=640)	
		C1	cao	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
14 **Q9**	Histogram drawn	B3 (B2 (B1	for fully correct histogram, eg relative heights 1, 5, 6, 1.5 for 3 correct bars **or** for frequency ÷ class interval for at least 3 frequencies and 2 correct bars of different widths) for 2 correct bars of different widths **or** for frequency ÷ class interval for at least 3 frequencies)	Frequency densities are 1, 5, 6, 1.5

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
17 (a)	histogram drawn	B3	for fully correct histogram, eg. relative heights 90, 96, 44, 8, 6	
		(B2	for 4 correct bars **or** for frequency ÷ class interval for all 5 frequencies and 2 correct bars of different widths)	
Q10		(B1	for 2 correct bars of different widths or for frequency ÷ class interval for at least 3 frequencies)	
(b)	$0.4n$	M1	for finding ratio of heights or widths of bars, eg 5 : 1 or $\frac{1}{5}$, 1 : 2 or $\frac{n}{5}$ oe or $2n$ oe as answer or compares areas of bars, eg 6 and 2.4 or 3 and 1.2 or 150 and 60	Evidence for this mark may be seen on the diagram Any 2 numbers in the ratio 2.5 : 1 score M1
		A1	for $0.4n$ oe	