Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
5 (a)		365	M1	*fx* with *x* consistent within intervals eg 200 × 1 , 300 × 11 , 400 × 5 , 500 × 0 , 600 × 3, if 200, 3300, 2000, 0, 1800 are seen without working then condone 1 error
Q1			M1	(dep) $\Sigma fx \div \Sigma f$ eg "7300" ÷ 20
			A1	cao
(b)		Comment	C1	for comment about outliers affecting mean

Paper: 1MA1/3H				
Question	**Working**	**Answer**	**Mark**	**Notes**
1 (a)		$160 < h \leq 170$	B1	correct class interval
(b)		Line segments joining the points (135, 4), (145, 11), (155, 24), (165, 22) and (175, 19)	C2 [C1	for fully correct frequency polygon for points plotted correctly at midpoints of intervals OR joining points with line segments at the correct heights and consistent within the intervals (including end values) OR correct frequency polygon with one point incorrect OR correct frequency polygon with first and last point joined] NB: ignore any histogram drawn and any part of frequency polygon outside range of first and last points plotted

Q2

Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
7 **Q3**		72	P1 P1 A1	for showing the process of 30 × 60 (=1800) or 20 × 54 (=1080) (dep P1) for showing the complete process e.g. (“1800” – “1080”) ÷ 10 concluding the answer is 72 (and not 66)

Paper 1MA1: 3H				
Question	**Working**	**Answer**	**Mark**	**Notes**
3 (a)		12	B1	cao
Q4 (b)		Explanation	C1	No with statement about not being mutually exclusive events eg a person could be in both categories

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11 (a)	59, 53, 66	B2 (B1	for Median = 59, LQ = 53, UQ = 66, may be seen in working for one correct)	
(b)	Yes, with reason	C1	for Yes and comment comparing median ages, ft from (a) **Acceptable examples** "59" < 70 All statistics/values are lower for coach A (so they are younger) Median is lower The middle age is lower on coach A **Not acceptable examples** Median is higher Median for coach A is "59" and coach B is 70 The oldest on coach A is 79 and the oldest on coach B is 85 There are people on coach B that are older than on coach A	
Q5				
(c)	No, with reason	C1	for No and comment comparing spreads of ages from ranges or IQRs, ft from (a) **Acceptable examples** 38 < 43 **or** "13" < 19 Greater difference between greatest and least age for coach B Range for coach B is larger than coach A The range of ages is wider on coach B than on coach A The range is 5 greater on coach B There is a smaller difference between the lower and upper quantiles on coach A than on coach B The IQR is shorter for coach A **Not acceptable examples** Quartiles are less for coach A 53 < 54 **or** 79 < 85 (oe) Range for coach A is 38 and range for coach B is 43 Coach A ranges from 41-79 but coach B ranges from 42-85	Working A: Range = 38, IQR = "13" B: Range = 43, IQR = 19

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
3 (a)	$40 < h \leq 50$	B1	accept 40 – 50 oe	
(b)	polygon drawn	B2	for fully correct polygon with points plotted at the midpoints	Joining must be with line segments
Q6	(15,7), (25,13) (35,14), (45,12) (55,16), (65,18)	(B1	for points plotted correctly but not joined by straight lines **or** joining points at correct heights consistently within intervals including plotting at end values **or** correct frequency polygon with one point incorrect **or** correct frequency polygon with first and last points joined directly)	for example, at 10, 20, 30,…or at 20, 30, 40,… Ignore any histogram drawn and any part of frequency polygon outside range of first and last points plotted

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
7 **Q7**	20 or 24 or 168	B1	for identification of the range of the girls (20) **or** the range (24) **or** the median (168) of the boys	
	Comparison	C2	for a correct comparison of medians **and** a correct comparison of ranges supported by correct figures eg the median height for girls (165) is less than the median height for boys (168) and the range for girls (20) is less than the range for boys (24) At least one comparison must be in context referring to height or quoting cm.	Simply quoting values for median, range is insufficient; they must be compared.
		(C1	for a correct comparison of medians **or** a correct comparison of ranges that could ft their incorrect figure(s))	Context not necessary for C1

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
7 **Q8**	16.5	M1 M1 A1	for method to find total of ages of boys, eg 18 × 16.2 (= 291.6) or total of ages of girls, eg 27 × 16.7 (= 450.9) or total of ages of boys and girls, eg 742.5 for complete method, eg $\frac{"291.6"+"450.9"}{45}$ (= $\frac{742.5}{45}$) cao	May use an equivalent method with number of boys and girls used in the ratio 2 : 3 $\frac{16.2+16.7}{2}$ scores 0 marks

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
4 (a)	5	M1	"2" ÷ 40 × 100	"2" comes from their reading of the height of the 20 to 24 column
		A1	cao	
(b)	9.5 shown	M1	for frequencies of 11, 8, 13, 6 and 2 (allow one error) **or** for midpoints 2, 7, 12, 17 and 22	May be seen on chart
Q9		M1	for finding at least 4 products *fx* consistently within interval (including end points)	
		M1	for Σ"*fx*" ÷ ("11" + "8" + "13" + "6" + "2") **or** (11×2 + 8×7 + 13×12 + 6×17 + 2×22) ÷ 40 **or** Σ"*fx*" (=380) **and** 9.5 × ("11" + "8" + "13" + "6" + "2") (=380)	Evidence of two different calculations that should lead to 380 are required for this mark
		C1	for correct figures showing the answer or accurate figures to compare from correct working eg 380 from two calculations	

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
6 **Q10**	No (supported)	P1 P1 C1	for process to find total weight of the 4 red bricks, eg. 5 × 4 (= 20) **or** for process to find total weight of the 5 blue bricks eg. 9 × 5 (= 45) for process to find total weight of all 10 bricks, eg. "20" + "45" + 6 (= 71) No with correct supporting evidence **Acceptable examples** No, it is 7.1 She is wrong, it is 0.1 more No, (the total weight is) 71 not 70 **Not acceptable examples** Yes …. No, it is 71	May be seen next to statements 20 must be clearly referenced to the red bricks. 5 + 9 + 6 = 20 gets no marks Candidates working in grams will need to give 7100 and 7000 for example as comparable figures

<table>
<tr><th colspan="4">Paper: 1MA1/3H</th></tr>
<tr><th>Question</th><th>Answer</th><th>Mark</th><th>Mark scheme</th><th>Additional guidance</th></tr>
<tr>
<td>4

Q11</td>
<td>18.6</td>
<td>M1

M1

A1</td>
<td>for finding 4 products within intervals (including end points)

for Σ“fx” ÷ (1+ 2 + 7 + 8)
or (7.5×1 +12.5×2 + 17.5×7 +22.5×8) ÷ (1+ 2 + 7 + 8)
or (“7.5” + “25” + “122.5” + “180”) ÷ “18”
or “335” ÷ “18”

for 18.6(111…)</td>
<td>
<table>
<tr><th>Min fx</th><th>Max fx</th></tr>
<tr><td>5</td><td>10</td></tr>
<tr><td>20</td><td>30</td></tr>
<tr><td>105</td><td>140</td></tr>
<tr><td>160</td><td>200</td></tr>
</table>

Σ“fx” must come from 4 products fx within intervals (including end points)
</td>
</tr>
</table>

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
8 **Q12**	158	P1 P1 A1	for a first step in the process eg 50 × 167.6 (= 8380) or 20 × 182 (= 3640) for a complete process eg (50 × 167.6 – 20 × 182) ÷ 30 or $\frac{8380-3640}{30}$ or 4740 ÷ 30 cao	

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<tr><th>Question</th><th>Answer</th><th>Mark</th><th>Mark scheme</th><th>Additional guidance</th></tr>
<tr><td>8

Q13</td><td>19</td><td>M1</td><td>for a method to find 5 products within intervals (including end points)</td><td><table><tr><th>Min fx</th><th>Max fx</th></tr><tr><td>0</td><td>80</td></tr><tr><td>100</td><td>200</td></tr><tr><td>140</td><td>210</td></tr><tr><td>60</td><td>80</td></tr><tr><td>120</td><td>150</td></tr></table></td></tr>
<tr><td></td><td></td><td>M1</td><td>for Σ“fx” ÷ (8 + 10 + 7 + 2 + 3)
or (5×8 + 15×10 + 25×7 + 35×2 + 45×3) ÷ (8 + 10 + 7 + 2 + 3)
or (“40” + “150” + “175” + “70” + “135”) ÷ “30”
or “570” ÷ “30”</td><td>Σ“fx” must come from 5 products fx within intervals (including end points)</td></tr>
<tr><td></td><td></td><td>A1</td><td>cao</td><td></td></tr>
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