Paper: 1MA1/1H				
Question	**Working**	**Answer**	**Mark**	**Notes**
12 (a) **Q1**	161 + 7 154 + 20	Box plot	M1 M1 A1	for method to find UQ (168) **or** highest value (174), may be implied by correct values plotted for showing a box and at least 3 correctly plotted values from 154, 161, 165, 168, 174 for fully correct box plot
(b)	Med IQR Range Y11 165 7 20 Y7 157.5 10.5 24.5	Comparison	C1 C1	(ft) for comparison of the median (ft) for comparison of the spread NB: for award of both marks, at least one comparison must be in context. NB: figures need not be stated, but if they are they must be correct (ft)

Paper 1MA1: 3H				
Question	**Working**	**Answer**	**Mark**	**Notes**
9 (a)		180	M1 A1	for evidence of using the LQ (150) and UQ (330) eg 330 − 150 cao
Q2 (b)	60,180,300,350,650		B2 (B1)	for fully correct box plot for showing a box and at least 3 correctly plotted values
(c)	Medians 250 and 300	Statement	C1	for a correct comparative statement relevant to the question e.g. Yes because the female students have a greater median than the male students

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 (a) **Q3**	Box plot drawn	B3 (B2 (B1	for a fully correct box plot for at least 3 correctly plotted values including box and whiskers/tails) for at least 2 correctly plotted values including box or whiskers/tails or 5 correct values plotted or clearly identified and no box or whiskers/tails)	Condone the lack of a vertical marker at the end of the tails Note that a box must be present, as must "tails"
(b)	60	M1 A1	for a method to find ¾ of 80 eg 20 + 20 + 20 or ¾ × 80 cao	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 **Q4**	Two changes	C1 C1	plot the median at 162, not 161 oe plot the upper quartile at 171, not 172 oe **Acceptable examples** the median has been plotted at 161 / upper quartile at 172 the upper quartile should be 171 (not 172) UQ is wrong as IQR is 17 not 18 **Not acceptable examples** the median / upper quartile have been plotted / drawn wrong the upper quartile has been worked out incorrectly She needs to work out the UQ	

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 (a)	138	M1	for upper quartile = 188 **or** lower quartile = 50 **or** an indication that they are trying UQ – LQ	Could be written on the grid
		A1	cao	
(b)	Yes, with reason	C1	Yes, with reason **Acceptable examples** Yes, because the median is at 2 hour (120 min) Yes, since 50% is at the 2 hour mark Yes, because the middle is at 2 hours **Not acceptable examples** No ….. The median is at the 2 hour mark Yes, because 50% is exactly half way between "188" and "50"	
(c)	statement	C1	**Acceptable examples** The median is lower on Tuesday (higher on Monday) The upper quartile is lower on Tuesday (higher on Monday) There may just have been one person waiting for 210 mins We don't know how many people were waiting for each time **Not acceptable examples** The range is bigger for Tuesday (smaller for Monday) The IQR is smaller for Tuesday (bigger for Monday)	M T Shortest time 20 20 Lower quartile 50 50 Median 120 100 Upper quartile 188 140 Longest time 200 210 Range 180 190 IQR 138 90

Q5

Paper: 1MA1/1H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
9 (a)	box plot drawn	B1	ends of whiskers at 0 and 42 with a box	The box can be of any height. Accept ends that are marked (eg line, cross, dot) or defined by the end of the whiskers if clear.
		B1	median at 10 inside a box	Has to be inside a box; whiskers not required
		B1	for ends of box at 4 and 20	An independent mark that can be awarded for just a box; do not need whiskers for this mark.
(b)	Comparison	C1	for a correct comparison of medians, eg. the median delay time on Mon was greater than the median delay time on Tues. or ft (a)	Simply quoting values for median, range and IQR is insufficient, they must be compared
Q6		C1	for a correct comparison of a measure of spread, eg. the interquartile range (range) of delay times on Mon was greater than the interquartile range (range) of delay times on Tues. or ft (a) For the award of both marks at least one of the comparisons must be in context	Comparisons can relate to the median, and then either the range or the IQR.
(c)	statement	C1	'No' with statement explaining that there might not be any delays between 25 minutes and 30 minutes as in the upper 25% (12 trains) the delays may all be between 17 and 25 or 30 and 33	The 'No' may be implied from their wording, and could be written next to the "?" The statement must mention (or imply) values above the UQ of 17

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
11 (a)	Explanation	C1	eg 'No' the median is 57	
(b)	Comparison	C1	(ft) a correct comparison of medians eg the median weight for Megan was greater than the median weight for Amy	Simply quoting values for median, range and IQR is insufficient, they must be compared
Q7		C1	a correct comparison of a measure of spread eg the interquartile range of weights for Megan was greater than the interquartile range of weights for Amy For the award of both marks at least one of the comparisons must be in the context of the question	Median Range IQR Megan 57 49 26 Amy 42 47 16 Figures given must be correct. Comparisons can relate to the range or the IQR

Paper: 1MA1/3H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
12 **Q8**	Box plot	M1 M1 A1	for correctly identifying one of the LQ (188), median (197) or UQ (209) from the stem leaf for showing a box and at least 3 correctly plotted values from 173, 188, 197, 209, 219 for a fully correct box plot	May be implied by one of these values being correctly plotted.

Paper: 1MA1/2H				
Question	**Answer**	**Mark**	**Mark scheme**	**Additional guidance**
10 (a) **Q9**	Explanation	C1	for explanation, eg **Acceptable examples** The IQR is half the data This is half the data $\frac{3}{4}$ of the data is less than 350(000) $\frac{3}{4}$ of the data is more than 160(000) $\frac{3}{4}$ of the data is lies between 60(000) and 350(000) $\frac{1}{2}$of the data lies between 160(000) and 350(000) **Not acceptable examples** The data lies between 160 and 350 The IQR is 190 (000) IQR = UQ – LQ The upper and lower quartiles represent half the data	Zeros can be present or missing, but must be consistent.
(b)	box plot drawn	B2 (B1	for fully correct box plot for showing a box and at least 3 correctly plotted values)	Box can be of any height. Accept ends that are marked (eg line, cross, dot) or defined by the end of the whiskers if clear
(c)	decision and comparisons	C1 C1	(ft) for correct comparison of medians eg the median for online is greater than the median for the shop, the shop takes less money from sales in general as the median is lower (ft) for a correct comparison of a measure of spread, eg the interquartile (range) of sales for the online store is greater than the IQR for the sales of the shop Comparisons for this mark can relate to the range or the IQR. For the award of both marks at least one comparison must be in the context of the question.	Simply quoting values for median, range and IQR is insufficient, they must be compared Median Range IQR Online 200 360 190 Shop 170 320 180 Also accept figures as 000s as long as consistent. Figures need not be seen but if given they must be correct.