Mark Scheme (Results)

Summer 2024

Pearson Edexcel GCSE (9 – 1)
In Statistics (1ST0) Higher Tier
Paper 2H

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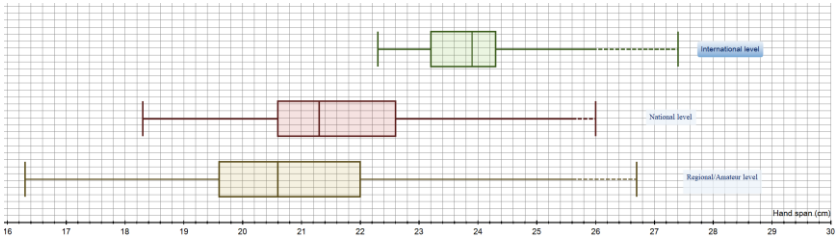
Question number	Answer	Additional guidance	Mark
1(a)	B1 for one of: • it would be faster **or** it would take too long to collect the data himself • data is easily accessible/easier to collect **or** too much data to collect/analyse / not practical to collect himself • it would be cheaper **or** it would be too expensive to collect the data himself	B1 for identifying why it is appropriate to use secondary data. Allow a disadvantage of primary data as long as it is clear that they are referring to primary data. e.g. people might not want to tell Matthew their average income – sensitive question B0 for more accurate or more data.	(1)
(b)	B1 for West Virginia, Arkansas, Mississippi	B1 for identifying the three states with the lowest mean household incomes in any order. If additional states are included B0.	(1)
(c)	B2 for e.g. • the darkest shading is shown on the West coast and East coast, so the conclusion is supported / Matthew is correct • the lowest mean incomes are found in the centre of the map so the conclusion is supported/Matthew is correct. • Colorado is also a high income state and that is in the centre of the country, so the conclusion is not supported / Matthew is incorrect • most of the coastal states have incomes of ≥ 100 (thousands), so the conclusion is supports/Matthew is correct.	B2 for identifying relevant features of the choropleth map with assessment of the appropriateness of the conclusion Allow reference to coasts if East and West are not written. For East coast allow reference to two or more named states on the coast. For West coast allow reference to California and Washington.	(2)

	(B1 for e.g. • the darkest shading is shown on the West coast and East coast with no/incorrect conclusion • Colorado is also a high income state and that is in the centre of the country with no/incorrect conclusion) • most of the coastal states have incomes of ≥ 100 (thousands), with no/incorrect conclusion. SCB1 for comparing the East and West coast and concluding the East coast highest income states.	(B1 for identifying relevant features of the choropleth map with no or incorrect assessment of the appropriateness of the conclusion or for only making reference to one coast with an assessment of the appropriateness of the conclusion.) B0 for repeating the statement in the question with no supporting reason.	

<table>
<tr><th>Question number</th><th>Answer</th><th>Additional guidance</th><th>Mark</th></tr>
<tr><td>2(a)</td><td>B1 continuous</td><td></td><td>(1)</td></tr>
<tr><td>(b)</td><td>M1A1A1
 
</td><td>M1 for box with two whiskers (at least one correct value from 23.2, 23.9 or 27.4)
A1 for correct upper quartile (24.3) or correct least value (22.3)
A1 Fully correct plot

(22.3, 23.2, 23.9, 24.3, 27.4)</td><td>(3)</td></tr>
<tr><td>(c)</td><td>B1ft B1ft B1ft B1ft B1ft

<table>
<tr><th>Comparison</th><th>Interpretation</th></tr>
<tr><td>International greatest <u>median</u>
or
International <u>median</u> > national <u>median</u> > amateur <u>median</u></td><td>e.g. International pianists have the largest/wider (hand spans).
As they increase in standard the hand spans increase.</td></tr>
<tr><td>Amateur has the greatest <u>IQR</u>
or
International <u>IQR</u> < national <u>IQR</u> < amateur <u>IQR</u>
or
Amateur has the greatest <u>range</u>
or
International <u>range</u> < national <u>range</u> < amateur <u>range</u></td><td>e.g. International pianists have are the most consistent</td></tr>
</table></td><td>B1ft Correct comparison of medians
B1ft Correct comparison of spread (IQR or range)
B1ft Correct comparison of skew
B1ft One correct interpretation
B1ft One further correct comparison of spread or interpretation
Allow equivalent/converse statements but underlined words must be seen.
Allow for comparison of just two box plots e.g. national and amateur</td><td>(5)</td></tr>
</table>

	All three have positive skew **or** International negative skew, national and amateur positive skew e.g. All three have more varied (hand spans) above median	May be multiple comments in one statement. Follow through from their box plot. Note: in this question ignore any numerical values in comparisons.	
(d)	B1 for e.g. $\frac{24}{24+65+57+14} \times 20$ or $\frac{strata\ size}{total} \times 20, \frac{1}{8}$ of each strata B1 for one correct rounded value from 3,8,7 or 2 or indicating that they should round the sample size to the nearest whole number. B1 for indicating or describing taking a random sample within each strata e.g. number all of the pianists and use a random number generator to select the appropriate number within the strata.	B1 for description of how to calculate the number to be sampled from each stratum B1 for one correct integer value, ignore subsequent incorrect values. e.g. 3,8,7, 3 or indicating that they need to round the sample size to the nearest whole number. B1 for indicating random sampling within each stratum or for description of how to sample within each stratum	(3)

Question number	Answer	Additional guidance	Mark
3(a)	M1 $\frac{15}{50}$ or $\frac{32}{80}$ M1 $\frac{15}{50} \div \frac{32}{80}$ A1 0.75	M1 for $\frac{15}{50}$ oe or $\frac{32}{80}$ oe M1 for a complete attempt at relative risk A1 for 0.75 oe	(3)
(b)	B1ft e.g. • the risk of failing the skills test having taken course A is (25%) lower than the risk of failing the skills test having taken course B • people who take course B are (25%) more likely to fail than those who took course A.	B1ft for correct interpretation of their relative risk value Must have a relative risk given in part (a). Figures do not need to be seen but if they are they need to be correct for their relative risk given in (a). B0 if no relative risk found in part (a).	(1)

Question number	Answer	Additional guidance	Mark
4(a)	M1 for 4, 5 or 6 points plotted correctly (180, 16), (190, 37), (200, 55), (210, 74), (220, 83), (280, 89) A1 for a fully correct graph SCB1 if 4, 5 or 6 points plotted not at end but consistently within each interval and joined by a curve or line segments provided no gradient is negative.	Do not accept bar chart heights as correct coordinates. Condone lines drawn vertically to correct coordinates Ignore to the left of the first point and to the right of the last point. Accept a smooth curve or line segments.	(2)
(b)	M1 for $80 - 46$ A1ft 34	Follow through their cumulative frequency graph. Accept an answer in the range 31– 37 Follow through an answer using *their* 80 and *their* 46 from a cumulative frequency graph.	(2)

<table>
<tr><th>Question number</th><th>Answer</th><th>Additional guidance</th><th>Mark</th></tr>
<tr><td>5(a)</td><td>B2 for correctly completing the England Rugby Union player weights on the stem and leaf diagram
B1 for a suitable key
<table><tr><th>Welsh</th><th></th><th>England</th></tr><tr><td>8</td><td>7</td><td></td></tr><tr><td>7 6 4 4 4</td><td>8</td><td>2 4 7 8 8</td></tr><tr><td>8 6 5 5 2 1</td><td>9</td><td>0 2 3 4 6 6 6 8</td></tr><tr><td>9 4 0</td><td>10</td><td>7</td></tr><tr><td></td><td>11</td><td>1 2</td></tr></table>Key: 1 | 9 | 0 represents a weight of 91kg for a Welsh Rugby Union Back and a weight of 90kg for an England Rugby Union Back</td><td>B2 for a fully correct back-to-back stem and leaf diagram

OR if B2 not earned
B1 for unordered diagram or ordered diagram with at most 2 errors

AND
B1 for a suitable key for the stem and leaf diagram.
Accept a key given as two parts.
If key given in two parts then this must be complete and there must be reference to Welsh and England or it must be clear how this is interpreted for the two sides. E.g. 8 | 7 represents a weight of 78 in Welsh and 8|2 represents a weight of 82 in England or |8|2 represents 82, 4|8| represents 84.</td><td>(3)</td></tr>
<tr><td>(b)</td><td>B1 92 kg</td><td>B1 for 92</td><td>(1)</td></tr>
<tr><td>(c)</td><td>M1 for $98 - 84$

A1 14</td><td>M1 for $98-k$ or $k - 84$ or for both 98 and 84 identified
or for $99.5 - k$ or $k - 84.5$
or for both 99.5 and 84.5 identified (leads to IQR=15)

A1 accept 14 or 15.</td><td>(2)</td></tr>
</table>

(d)	B1ft for the median weight for the Welsh players is less than the median weight for the England players B1ft for the interquartile range for the Welsh players is greater than the interquartile range for the England players B1ft (dep) so the Welsh players were lighter than the England players **and** had less consistent weights / 1st conclusion is incorrect **and** 2nd conclusion is correct.	B1ft for correct **comparison** of medians. Ft their (b). B1ft for correct **comparison** of interquartile range. Ft their (c). B1ft for assessing the appropriateness of the conclusion Dep on B1B1 scored (question indicates reasons required) Do not award the 3rd B mark if the reasoning is linked with the wrong statistic e.g. linking median with consistency.	(3)
(e)	B1 for e.g. • Not appropriate as readers may not understand what they (median and interquartile range) are • Appropriate if the meaning of the statistics were explained for the target audience	B1 for assessing the appropriateness of the use of median and interquartile range for the article Allow not appropriate as IQR and median do not use all the data or appropriate as median and IQR are not effected by outliers.	(1)
(f)	B1 for e.g. the data is only for the Backs / we have no data for the Forwards/ no data for all the positions/ doesn't include all the players.	B1 for identifying a limitation of using these statistics to compare the two teams. Allow not representative. B0 data is only for two teams. B0 reference the disadvantages of using the median and/or IQR.	(1)

<table>
<tr><th>Question number</th><th>Answer</th><th>Additional guidance</th><th>Mark</th></tr>
<tr><td>6(a)</td><td>M1 ranks for change in area
$1, 4, 2, 14, 12, 6, 11, 9, 3, 10, 7, 13, 5, 15, 8$

M1 for sum of squares of differences of ranks
$\sum d^2 = 196 + 49 + 144 + 49 + 4 + 9 + 25 + 49 + 100 + 81 + 4 + 64 + 49 + 121 = (944)$

M1dep for use of formula
$1 - \frac{6 \times 944}{15(15^2 - 1)}$

A1 for -0.69

B1depft
Negative correlation…
B1depft
…as the forest cover area reduces the amount of surface runoff increases</td><td>M1 for attempt at ranks

M1 for attempting sum of squared differences of ranks with at least 5 non-zero squares correct.

M1dep for complete attempt at formula (allow use of their sum d^2). i.e.
Use of $1 - \frac{6 \times their\ \sum d^2}{15(15^2-1)}$.
Dep on M1M1 scored.
A1 for -0.69 or $-0.685(7\ldots)$
Accept -0.7 with correct working or with -0.69 seen.

B1dep ft for correct identification of type of correlation
B1dep ft for correct interpretation of their SRCC
Dependent on complete attempt to use formula and
$-1 < r_s < 1$
For ft
<table><tr><th>Change in forest cover ranking</th><th>SRCC</th><th>SRCC interpretation</th></tr><tr><td>Smallest number rank 1</td><td>-</td><td>as the forest cover area reduces the amount of surface runoff increases</td></tr><tr><td>Smallest number rank 1</td><td>+</td><td>as the forest cover area increases the amount of surface runoff increases</td></tr></table></td><td>(6)</td></tr>
</table>

	M1 for reversed ranks $15, 12, 14, 2, 4, 10, 5, 7, 13, 6, 9, 3, 11, 1, 8$ M1 for sum of squares of differences of ranks $\sum d^2 = 0 + 1 + 0 + 25 + 36 + 49 + 1 + 25 + 0 + 25 + 0 + 4 + 1 + 9 + 0 \ (= 176)$ M1dep for use of formula $1 - \frac{6 \times 176}{15(15^2 - 1)}$ A1 for 0.69 B1depft Positive correlation… B1depft …as the forest cover area reduces the amount of surface runoff increases	M1 for attempt at ranks M1 for attempting sum of squared differences of ranks with at least 5 non-zero squares correct. M1dep for complete attempt at formula (allow use of their sum d^2). Use of $1 - \frac{6 \times their \ \sum d^2}{15(15^2-1)}$. Dep on M1M1 scored. A1 for 0.69 or 0.685(7...) Accept 0.7 with correct working or with 0.69 seen. B1dep ft for correct identification of type of correlation B1dep ft for correct interpretation of their SRCC Dependent on complete attempt to use formula and $-1<r_s<1$ For ft <table><tr><th>Change in forest cover ranking</th><th>SRCC</th><th>SRCC interpretation</th></tr><tr><td>Largest number rank 1</td><td>+</td><td>as the forest cover area reduces the amount of surface runoff increases</td></tr><tr><td>Largest number rank 1</td><td>-</td><td>as the forest cover area increases the amount of surface runoff increases</td></tr></table> Ignore reference to strength of correlation.	

(b)	B1 for e.g. • The same locations are tested without the drainage solution and then with the drainage solution B1 for e.g. • Different terrain. • Different surface materials e.g. tarmac. • Differences in forest cover area. • Different climate. SCB2 for testing for a year without the drainage solution and for a year with the drainage solution controls for seasons / time of year	B1 for identifying how the plan controls for extraneous variables. B1 for an example of an extraneous variable that is likely to be controlled for.	(2)
(c)	B1 for e.g. • Identify areas which have the same profiles e.g. same amount of rain, similar terrain.	B1 for describing a matched pairs approach where two areas are matched Allow for reference to two areas and matching of a feature. B0 for a description of testing the same area with drainage solution and then testing the same area after drainage solution.	(1)

Question number	Answer	Additional guidance	Mark
7(a)	B2 CPI has increased 8.9% (from 2015 to 2020) (B1 for increase or 8.9%)	B2 for a complete interpretation of the CPI (B1 for increase or 8.9%)	(2)
(b)	M1 for $\frac{111.6}{103.6}(\times 100)$ or $\frac{111.6-103.6}{103.6}(\times 100)$ A1 for 7.7	M1 for an appropriate calculation for the percentage increase, may omit ×100 A1 for 7.7(220...)	(2)
(c)	M1 for $\frac{2\times 115.6+7x}{2+7} = 124.2$ A1 for 126.7	M1 for a correct equation A1 for 126.6(57...) or 126.7	(2)
(d)	B1 for e.g. • coffee, tea and cocoa were more important in the CPI in 2021 than in 2022 • coffee, tea and cocoa importance has reduced • coffee, tea and cocoa will have a lower impact on CPI. • mineral waters, soft drinks and juices importance has stayed the same	B1 for concluding that the importance of coffee, tea and cocoa in the CPI has reduced Condone reference to e.g. just coffee. Reference to people buying less coffee, tea and cocoa is B0.	(1)
(e)	M1 for $\sqrt[5]{1.0256 \times 1.0229 \times 1.0174 \times 1.0099 \times 1.0252}$ A1 for 1.02018... [=2.02%] OR SCB1 for 1.91 or 1.91% B1dep ft for average annual inflation rate was greater for the UK than for Germany (from 2017 to 2021)	Must see working to award M, A marks (arithmetic mean is also 2.02%) A0 for an answer 1.02% B1depft on one previous mark scored.	(3)

Question number	Answer	Additional guidance	Mark
8	B1for each of six correct comments. **Maximum 3 marks for data collection. Maximum 3 marks for processing and presenting data.** **Data collection**: • Suitable sample size as it is large/representative as it includes all the members of the running club. • Runners measuring their own heart rates may lead to errors/inconsistency's/runners may lie about their heart rates/Roxann should measure the heart rates. • Some runners may not take part/forget to add it on the spreadsheet. • Data may need cleaning • Entering results on a spreadsheet means it will be quicker to do calculations • Appropriate for the runners to measure their heart rate when they come to the club. • She should also ask runners to record their gender on the spreadsheet. • (Runners measuring their own heart rates means that there is) no control over extraneous variables e.g. time of day, caffeine consumption	B1 for each correct comment on the appropriateness of the plans for data collection, process and presenting data. Do not accept: number of female and male runners differ. Each bullet point can be awarded once only. Comments about appropriate/not appropriate alone are not sufficient. There needs to be a correct reason.	(6)

	Processing and presenting data: • Separating male and female data is sensible as there may be a difference between the sexes • A histogram would be better than a box plot to (show the shape of the distribution) • A box plot would allow you to see if the data is symmetrically distributed/see the spread of the distribution • A histogram would allow you to see if the distribution is bell shaped • Mean, median and mode would be expected to be equal for normally distributed data • Mean and median would allow her to calculate the skew. • Working out the (mean and) standard deviation would be appropriate for deciding if the distribution is normal. • For normally distributed data approximately 95% of data lies within 2 standard deviations of the mean or 68% of data lies within one standard deviation of the mean or almost all data is within 3 standard deviations of the mean - calculating mean and standard deviation allows for this to be checked		

Question number	Answer	Additional guidance	Mark
9(a)	B2 for use the tibia length to estimate the height of an ancient Egyptian (for both males and females) as the (product moment) correlation (coefficient) is highest/strongest. (B1 for use the tibia length to estimate the height of an ancient Egyptian (for both males and females) OR for indicating using the bone where the correlation (coefficient) is the highest)	B2 for correctly identifying which bone measurement to use to estimate the height of an ancient Egyptian with supporting reason referencing product moment correlation coefficient Allow the PMCC is closest to 1 (B1 for identifying which bone measurement to use to estimate the height of an ancient Egyptian OR for reference to comparing the correlation coefficients to identify the strongest correlation)	(2)
(b)	B1 for e.g. for every additional centimetre of length of the humerus the estimated height increases by 2.594 centimetres	B1 for a correct interpretation in context of the gradient of the regression equation	(1)
(c)	B1B1B1 for each of three correct comparisons of the regression equations B1 for a correct overall comment on the regression equations. • e.g. as all bones lengths increase the height increases B1 for a correct comparison of regression equations between male skeletons and female skeletons e.g. • Estimated female height increases more than male height with each additional centimetre of femur length	B1B1B1 for each of three correct comparisons of regression equations B1 for overall comment on the regression equations. B1 for comparison of regression equations for male skeletons and for female skeletons	(3)

	• Estimated female height increases more than male height with each additional centimetre of tibia length • Estimated female height increases more than male height with each additional centimetre of humerus length • Estimated male height increases more than female height with each additional centimetre of radius length B1 for a correct comparison of all regression equations between male skeletons and female skeletons e.g. • Estimated female height increases more than male height with each additional centimetre of bone length except for the radius B1 for a correct comparison of regression equations between bones e.g. • Estimated female height increases fastest with each additional centimetre of humerus length • Estimated male height increases fastest with each additional centimetre of radius length • Estimated female height increases faster with each additional centimetre of tibia length than with each additional centimetre of femur length	B1 for overall comparison of regression equations between male and female skeletons B1 for comparison of regression equations between bones	
(d)	B2 for e.g. • not appropriate as the y-intercepts relate to a bone length of 0cm which is not realistic • not appropriate as the y-intercepts relate to a bone length of 0cm which would be outside the range of data for any measurements (B1 for identifying that the y-intercepts relate to a bone length of 0cm with no or incorrect comment on appropriateness)	B2 for evaluating the appropriateness of comparing the y-intercepts of the regression equations with reasoning (B1 for correct reasons with no or incorrect evaluation of appropriateness) Do not allow reference to a **height** of 0cm	(2)
(e)	B2 for e.g. • appropriate since the regression equations are based on ancient Egyptian skeletons and the bones are from ancient Egyptians • appropriate provided the bones in the pyramid are from ancient Egyptians (and not from non-Egyptian workers)	B2 for evaluating the appropriateness of using the regression equations with reasoning	(2)

	• appropriate provided the bones in the pyramid are one of femur, tibia, humerus or radius and the length is complete • appropriate provided it is known whether the skeleton is of a male or a female • not be appropriate as we don't know the which time scale/period the bones come from/may have had different standards of living. (B1 for e.g. equations are for ancient Egyptians and bones are from ancient Egyptians)	(B1 for correct reasons with no or incorrect evaluation of appropriateness)	

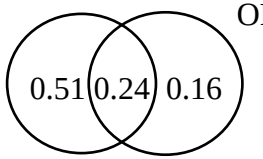
<table>
<tr><th>Question number</th><th>Answer</th><th>Additional guidance</th><th>Mark</th></tr>
<tr><td>10(a)</td><td>M1 $331 \div \frac{104}{264}$ or $\frac{331}{n} = \frac{104}{264}$

A1 840 (humpback whales)</td><td>M1 for a method that would lead to a correct estimate
Allow equivalent methods. Statement of the two fractions alone is not sufficient, these must be appropriately equated oe.
M1 implied by 840.(2…)
A1 cao</td><td>(2)</td></tr>
<tr><td>(b)</td><td>B3<table><tr><td>Statement</td><td>Condition/assumption</td></tr><tr><td>Only valid if..</td><td>...markings can be clearly distinguished/haven’t changed.
...there are no births/deaths/migration
…sampling method was the same each time
...appropriate time between the two samples</td></tr><tr><td>May not be valid/not valid if…</td><td>markings may not be easily seen/may have changed.
... population may have changed due to births/deaths/migration.
…sampling method may have been done at different times
...time between the two samples is too long</td></tr><tr><td>Reliability...</td><td>...is high as sample sizes are large</td></tr></table></td><td>B3 for a statement about validity or reliability with two conditions/assumptions from those listed

(B2 for a statement about validity or reliability with one condition/assumption from those listed OR reference to any two conditions/assumptions without mention of validity or reliability)

(B1 for reference to any one condition/assumption from those listed with no reference to validity or reliability)

Reference to tags or marks coming off or sufficient time is allowed for the Whales to mix back into the population is B0.</td><td>(3)</td></tr>
</table>

Question number	Answer	Additional guidance	Mark	Type
11(a)	B1 $\frac{27}{50}$ oe	B1 oe	(1)	1
(b)	B1 $\frac{12}{32}$ oe	B1 for finding conditional probability from Venn diagram or by use of formula	(1)	
(c)	B1ft for no / Mike is incorrect as $P(A) \neq P(A\|B)$ or $\frac{27}{50} \neq \frac{12}{32}$ or $\frac{27}{50} \times \frac{32}{50} = \frac{216}{625}$ $\frac{216}{625} \neq \frac{12}{50}$	B1ft for assessing the appropriateness of the conclusion (allow ft on the (a) and (b)).	(1)	
(d)	M1 $0.75 + 0.4 - 0.24$ OR  OR $0.51 + 0.24 + 0.16$ A1 0.91 oe	M1 for correct use of general addition law or Venn diagram A1 oe	(2)	2

Modifications to the mark scheme for Modified Large Print (MLP) papers: 1ST0 2H

Only mark scheme amendments are shown where the enlargement or modification of the paper requires a change in the mark scheme.

The following tolerances should be accepted on marking MLP papers, unless otherwise stated below:
Angles: ±5º
Measurements of length: ±5 mm

PAPER: 1ST0_2H			
Question		**Modification**	**Mark scheme notes**
1		Shading amended.	

1	c	Shading amended.	B2 for e.g. • the white shading / no shading is shown on the West coast and East coast, so the conclusion is supported / Matthew is correct • the lowest mean incomes are found in the centre of the map so the conclusion is supported/Matthew is correct. • Colorado is also a high income state and that is in the centre of the country, so the conclusion is not supported / Matthew is incorrect • most of the coastal states have incomes of ≥ 100 (thousands), so the conclusion is supports/Matthew is correct. (B1 for e.g. • the white shading / no shading is shown on the West coast and East coast with no/incorrect conclusion • Colorado is also a high income state and that is in the centre of

PAPER: 1ST0_2H			
Question		**Modification**	**Mark scheme notes**
			the country with no/incorrect conclusion) • most of the coastal states have incomes of ≥ 100 (thousands), with no/incorrect conclusion. SCB1 for comparing the East and West coast and concluding the East coast highest income states.
2		Wording added 'Look at the diagram for Question Q2(a), 2(b) and 2(c) in the Data Booklet. It shows an incomplete box plot diagram.' Wording 'below' removed and replaced with 'in the Data Booklet'. Diagram enlarged. Small squares removed. Axis label moved to the left. Top axis labelled. Lower value for Amateur level changed to 17.1. This is so the modified diagram fits.	As per standard mark scheme.
2	a	Options stacked vertically and left aligned.	As per standard mark scheme.

PAPER: 1ST0_2H			
Question		**Modification**	**Mark scheme notes**
2	b	Wording added ‘below’. Table enlarged. Wording ‘above’ removed and replaced with ‘in the Data Booklet’. Values changed so the box plot can be plotted on the modified diagram. Greatest hand span 27.5 cm Median hand span 24.0 cm Lower quartile 23.0 cm Range 5.5 cm Interquartile range 1.5 cm	M1 for box with two whiskers (at least one correct value from 23.0, 24.0 or 27.5) A1 for correct upper quartile (24.5) or correct least value (22.0) A1 Fully correct plot (22.0, 23.0, 24.0, 24.5, 27.5)
2	d	Wording added ‘Look at the table for Question 2(d) in the Data Booklet.’ Table turned vertically and enlarged.	As per standard mark scheme.
3		Wording added ‘Look at the table for Question 3 in the Data Booklet.’ Table enlarged.	As per standard mark scheme.
4		Wording added ‘below’. Table enlarged and left aligned. Values in the table changed to: $170 \leq x < 180$ 15 $170 \leq x < 190$ 40 $170 \leq x < 200$ 55 $170 \leq x < 210$ 75 $170 \leq x < 220$ 80 $170 \leq x < 260$ 89 Leeway needed.	As per standard mark scheme. Note: values to be plotted will be amended in some MLP versions.

PAPER: 1ST0_2H			
Question		**Modification**	**Mark scheme notes**
4	a	Wording added ‘Look at the diagram for Question 4(a) in the Data Booklet. It shows a grid.’ Wording added ‘on the grid’. Diagram enlarged. Open headed arrows. Axes labels moved to above the vertical axis and left of the horizontal axis. Right axis labelled. Intermediates added on the vertical axis. Graph cropped at 270 on the horizontal axis.	As per standard mark scheme.
5		Wording added ‘Look at the diagram for Question 5(a), 5(b) and 5(c) in the Data Booklet. It shows an incomplete back-to-back stem and leaf diagram.’ Wording ‘Here are the weights’ removed and replaced with ‘The weights are shown below’. Data arranged in four rows of four.	As per standard mark scheme.
5	a	Wording added ‘in the Data Booklet’. Diagram enlarged. Key moved above the diagram.	As per standard mark scheme.
5	d	Wording added ‘below’. Table enlarged with the text and left aligned.	As per standard mark scheme.
6		Wording added ‘Look at the table for Question 6 in the Data Booklet.’ Table enlarged.	As per standard mark scheme.
7		Wording added ‘Look at the table for Question 7(a) and 7(b) in the Data Booklet.’ Table enlarged and turned vertically.	As per standard mark scheme.
7	c	Wording added ‘Look at the table for Question 7(c) in the Data Booklet.’ Table enlarged.	As per standard mark scheme.
7	d	Wording added ‘Look at the table for Question 7(d) in the Data Booklet.’ Table enlarged.	As per standard mark scheme.
7	e	Wording added ‘Look at the table for Question 7(e) in the Data Booklet.’ Table enlarged and turned vertically.	As per standard mark scheme.

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Question		**Modification**	**Mark scheme notes**
8		Wording added ‘Look at the information for Question 8 in the Data Booklet.’ Wording ‘Here is’ removed and replaced with ‘The information in the Data Booklet shows’. Frame removed.	As per standard mark scheme.
9		Wording added ‘Look at the table for Question 9 in the Data Booklet.’ Table enlarged.	As per standard mark scheme.
11		Wording added ‘Look at the diagram for Question 11(a), 11(b) and 11(c) in the Data Booklet. It is a Venn diagram showing’. Wording ‘The Venn diagram shows’ removed. Diagram enlarged. Circles relabelled ‘event A’ and ‘event B’. Numbers moved up.	As per standard mark scheme.
11	d	Information stacked vertically and left aligned.	As per standard mark scheme.

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