



Pearson

Mark Scheme (Results)

Summer 2017

Pearson Edexcel GCSE
In Statistics (2ST01)
Higher Paper 1H

5ST1H

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NOTES ON MARKING PRINCIPLES

- 1 All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- 2 Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- 3 All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- 4 Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- 5 Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- 6 Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

i) *ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear*

Comprehension and meaning is clear by using correct notation and labeling conventions.

ii) *select and use a form and style of writing appropriate to purpose and to complex subject matter*

Reasoning, explanation or argument is correct and appropriately structured to convey mathematical reasoning.

iii) *organise information clearly and coherently, using specialist vocabulary when appropriate.*

The mathematical methods and processes used are coherently and clearly organised and the appropriate mathematical vocabulary used.

7 **With working**

If there is a wrong answer indicated on the answer line always check the working in the body of the script (and on any diagrams), and award any marks appropriate from the mark scheme.

If working is crossed out and still legible, then it should be given any appropriate marks, as long as it has not been replaced by alternative work.

If it is clear from the working that the "correct" answer has been obtained from incorrect working, award 0 marks. Send the response to review, and discuss each of these situations with your Team Leader.

If there is no answer on the answer line then check the working for an obvious answer.

Any case of suspected misread loses A (and B) marks on that part, but can gain the M marks. Discuss each of these situations with your Team Leader.

If there is a choice of methods shown, then no marks should be awarded, unless the answer on the answer line makes clear the method that has been used.

8 Follow through marks

Follow through marks which involve a single stage calculation can be awarded without working since you can check the answer yourself, but if ambiguous do not award.

Follow through marks which involve more than one stage of calculation can only be awarded on sight of the relevant working, even if it appears obvious that there is only one way you could get the answer given.

9 Ignoring subsequent work

It is appropriate to ignore subsequent work when the additional work does not change the answer in a way that is inappropriate for the question: e.g. incorrect canceling of a fraction that would otherwise be correct

It is not appropriate to ignore subsequent work when the additional work essentially makes the answer incorrect e.g. algebra.

Transcription errors occur when candidates present a correct answer in working, and write it incorrectly on the answer line; mark the correct answer.

10 Probability

Probability answers must be given as fractions, percentages or decimals. If a candidate gives a decimal equivalent to a probability, this should be written to at least 2 decimal places (unless tenths).

Incorrect notation should lose the accuracy marks, but be awarded any implied method marks.

If a probability answer is given on the answer line using both incorrect and correct notation, award the marks.

If a probability fraction is given then cancelled incorrectly, ignore the incorrectly cancelled answer.

11 Linear equations

Full marks can be gained if the solution alone is given on the answer line, or otherwise unambiguously indicated in working (without contradiction elsewhere). Where the correct solution only is shown substituted, but not identified as the solution, the accuracy mark is lost but any method marks can be awarded.

12 Parts of questions

Unless allowed by the mark scheme, the marks allocated to one part of the question CANNOT be awarded in another.

13 Range of answers

Unless otherwise stated, when an answer is given as a range, e.g [3.5 – 4.2] then this is inclusive of the end points and includes all numbers within the range.

Guidance on the use of codes within this mark scheme

M1 – method mark

A1 – accuracy mark (dependent on method mark)

B1 – working mark

C1 – communication mark

QWC – quality of written communication

awrt – answer which rounds to

oe – or equivalent

cao – correct answer only

ft – follow through

sc – special case

dep – dependent (on a previous mark or conclusion)

indep – independent

isw – ignore subsequent working

Question	Scheme	Marks
1		
(a)	(£) 470 (billion)	B1 (1)
(b)(i)	A single straight line drawn between (2006, 220 000) and (2006, 270 000) and (2013, 410 000) and (2013, 460 000).	B1
(ii)	Upwards	B1 (2)
(c)	It involves extrapolation/the trend may not continue.	B1 (1)
Notes		
(b)(ii)	Allow equivalent description (e.g. goes up / increasing). Ignore any figures. Condone 'positive (trend)' for B1 'positive correlation' or 'positive skew' seen is B0	
(c)	Any suitable comment which indicates that 2016 is beyond/outside the data set <u>or</u> that the (upward) trend may not continue 'There is no data after 2014' B1 Do not allow comments referring to fluctuations/points going up and down 'There could be a big fall in 2016' B0 'There is no data for that year' B0 'The trend line doesn't go that far/it will be off the graph' B0	
[4]		

Question	Scheme	Marks
<p>2 (a)(i)</p> <p>(ii)</p> <p>(b)</p> <p>*(c)</p>	<p>30 (accept 29)</p> <p>95 – 87 = 8</p> <p>For a suitable reason from:</p> <ul style="list-style-type: none"> • Only people from the USA were included in the survey (o.e.) • Percentages may be different in UK and USA (o.e.) • Data is out of date (from 2012) • Small sample size <p>... so it is not sensible (to use the results for the prediction)</p> <p>Median is 39 (for tablet owners) Median for tablets owners is higher/tablet owners are older (on average) IQR is (51.5 – 28 =) 23.5 (years) ... so similar variation in ages / IQR is (slightly) higher</p>	<p>B1</p> <p>M1</p> <p>A1</p> <p>(3)</p> <p>B1</p> <p>dB1</p> <p>(2)</p> <p>B1</p> <p>B1ft</p> <p>B1</p> <p>B1ft</p> <p>(4)</p> <p>[9]</p>
Notes		
<p>(a)(ii)</p> <p>(b)</p> <p>*(c)</p>	<p>M1 for subtraction of two figures between 80 and 100 (not inclusive) which may be seen on their graph e.g. 87 – 95 on its own is M0 but condone 87 – 95 = 8 for M1A1 A1 for 7, 8 or 9</p> <p>1st B1 for a suitable reason why it may not be sensible 2nd B1 dependent on first B1 for correct conclusion</p> <p>SC: For a complete argument that it is sensible to use the results e.g. ‘People from USA and UK have similar social/economic background so could be sensible’ B1B0.</p> <p>*(c) QWC: Must use correct statistical terms.</p> <p>1st B1 for median identified as 39 (allow ±0.5) or difference of 3 2nd B1 for correct comparison. Allow ft on their median if stated. 3rd B1 for IQR found as 23.5 (allow answers in the range [22.5 - 24.5]) 4th B1 dependent on a figure stated for IQR, for correct comparison. Allow ft on their IQR.</p> <p>More than one mark can be scored in a single comment, e.g. ‘median is 3 years older’ scores 1st B1, 2nd B1 and e.g. ‘both IQRs are 23’ scores 3rd B1, 4th B1 SC: ‘both IQRs are the same’ scores 3rd B1, 4th B1</p> <p>(For 2nd and 4th B1 assume comment is about tablet owners if not stated.)</p>	

Question	Scheme	Marks
3 (a)(i)	20 (%)	B1
	(ii) 58 – 20 = 38 (%)	M1 A1 (3)
	(b) For drawing a composite (stacked) chart in correct order, lines at 16 then 54 then 68 and correct shading. (Tolerance of ½ line vertically)	M1 A2 (3)
	(c) E.g. 35-54 year olds answered correctly more than 16-34. 16-34 year olds answered too high more than 35-54.	B2
		(2)
		[8]
Notes		
(a)(ii)	M1 for 58 – ‘20’ <u>or</u> a – 20 (a correct ft answer with no working in (a)(ii) scores M1A0) SC: Use of 16 – 34 composite bar chart leading to 28 scores M1A0	
(b)	M1 for drawing a composite (i.e. stacked) chart, 4 blocks in correct order (condone not reaching 100 for the M mark) A2 for getting all correct with correct shading (Condone opposite diagonal shading for the Correct/2 nd block) OR A1 for at least 2 out of 3 lines drawn correctly (from 16, 54, 68) SC: If M0, all correct lines within tolerance is B2 (ignore shading).	
(c)	B2 for any 2 correct comparisons OR B1 for any 1 correct comparison Ignore extraneous non-contradictory comments. Condone ‘about the same percentage answered too low for each age group’. Condone reference to numbers rather than percentages.	

Question	Scheme	Marks
4	(a) A list/register/database/electoral roll (of all voters in Great Britain)	B1 (1)
	(b) For any one suitable advantage from: <ul style="list-style-type: none"> • (Gets results) quicker • Higher response rate • No missing data • Questions can be explained 	B1 (1)
	(c) For any one suitable source of bias from: <ul style="list-style-type: none"> • Not everyone may be included (not everyone may have/answer a telephone) • Sampling frame/telephone directory may not be up to date • Interviewer bias/may feel pressured (to give answers that aren't truthful), not anonymous • Not random 	B1 (1)
	(d) $61+7+5+4+3(=80)$ $\frac{80}{100} \times 1000$ $= 800$	M1 A1 (2)
Notes		
(a)	Must have list/register/database/electoral roll (oe) Partial lists e.g. 'list of all voters in London' score B0	
(b)	Any suitable advantage from one of the four categories. Ignore extraneous non-contradictory responses. Accept converse statements about postal questionnaires. 'Can ask follow-up questions' is B0 'Cheaper' is B0 'Easier' is B0 'Gets more honest answers' is B0	
(c)	Any suitable source of bias from one of the four categories.	
(d)	M1 the addition of correct figures from table, i.e. $61 + 7 + 5 + 4 + 3$ <u>or</u> for 80(%) seen	
[5]		

Question	Scheme	Marks
<p>5 (a)</p> <p>*(b)</p> <p>*(c)</p> <p>(d)</p>	<p>Any relevant hypothesis relating to height and time/speed</p> <p>The <u>age</u> of the athlete since it is quantitative (oe).</p> <p>The <u>time</u> taken (to run 100 metres) since it is <u>continuous</u>.</p> <p>Median</p>	<p>B1 (1)</p> <p>B2 (2)</p> <p>B2 (2)</p> <p>B1 (1)</p> <p>[6]</p>
Notes		
	<p>(a) Must be a statement (not a question). B2 for identifying <u>age</u> and quantitative (allow numerical oe)</p> <p>*(b) (B1 for identifying <u>age</u> with any supporting reason)</p> <p>*(c) For B2 allow e.g. ‘<u>age</u> since the others are qualitative’ B2 for identifying <u>time</u> and continuous (B1 for identifying <u>time</u> with any supporting reason)</p> <p>For B2 allow e.g. ‘<u>time</u> since the others are <u>discrete</u>’</p>	

Question	Scheme	Marks
<p>6 (a) 51</p> <p>(b)(i) The lowest score (writing test) has the highest weighting.</p> <p>(ii) $\frac{55 \times 30 + 41 \times 45 + 57 \times 25}{30 + 45 + 25} = 49.2$</p> <p>(c) $50 - (1 + 3 + 6) = 40$</p> <p>(d) $\sqrt{\frac{217850}{50} - \left(\frac{3250}{50}\right)^2} = 11.489\dots$</p> <p>(e) The standard deviation uses <u>all</u> pieces of data or or The standard deviation is used since the data are <u>symmetric/not skewed</u>.</p>		<p>B1 (1)</p> <p>B1</p> <p>M1 A1cao (3)</p> <p>M1 A1 (2)</p> <p>M1 A1 (2)</p> <p>B1 (1)</p> <p>[9]</p>
Notes		
	<p>(b)(i) For indicating that the lowest test score (i.e. the writing test) has the highest weighting. (Or the highest test score/speaking test has the lowest weighting).</p> <p>(ii) M1 for full attempt at weighted mean with 3 products (at least 2 correct products, may be implied by 2 out of 1650, 1845 and 1425) in the numerator and sum of weightings in the denominator (working may be seen by the table) A1 for 49.2</p> <p>(c) M1 for either $50 - (1 + 3 + k)$ or for $k + 18 + 12 + 3 + 1$ where $0 < k < 12$ (May be implied by an answer in the range $34 < x < 46$)</p> <p>(d) M1 for substitution into correct formula with square root (allow $\sqrt{132}$ or $2\sqrt{33}$ for M1) A1 for awrt 11.5</p> <p>(e) Allow converse if interquartile range is stated (e.g. IQR is used when the data is skewed)</p>	

Question	Scheme	Marks
7	(a) The price of an annual season rail ticket is <u>increasing each year</u> . The <u>rate/% of increase is decreasing</u> over the years.	B1 B1 (2)
	(b) 3032×1.09 $= (\pounds)3304.88$	M1 A1 (2)
	(c) $(3032 \times) 1.09 \times 1.06 \times 1.04 \times 1.03 \times 1.02$ Therefore there has been a 26% increase (which is more than 25%).	M1 A1 (2)
Notes		
	(a) 1 st B1 for indicating that prices are increasing/rising (Must refer to increasing in every year) 2 nd B1 for a correct description of the rate of growth / % (allow amount)	
	(b) M1 for any correct equivalent calculation (e.g. $3032 \times 109 \div 100$) A1 for answers in the range $[(\pounds)3304 - (\pounds)3305]$	
	(c) M1 for multiplication of $(k \times) 1.09 \times 1.06 \times 1.04 \times 1.03 \times 1.02$ oe A1 for a correct solution with 26(.2...) % or 3790 and 3827(.65) or 1.25 and 1.26(2...) or 758 and 795(.65)	

Question	Scheme	Marks
8	(a) The median is $(\pounds)240\ 000$ (so more than half the houses cost more than $(\pounds)200\ 000$)	B1 (1)
	(b) $2.9 - 1.8 = (1.1)$ $2.9 + 1.1 \times 1.5 (= 4.55)$ $500\ 000 > 455\ 000$, so it is an outlier.	M1 M1 A1 (3) [4]
Notes		
	(a) For either the median is 240 000 <u>or</u> the median is more than 200 000 <u>or</u> for stating that half of the houses cost more than 240 000 (Allow 2.4 for 240 000 and 2 for 200 000)	
	(b) 1 st M1 for $2.9 - 1.8$ (290 000 – 180 000) or IQR = 1.1 (110 000) 2 nd M1 for $2.9 + 1.5 \times$ their IQR (or $290\ 000 + 1.5 \times$ their IQR) A1 dependent on both M1 marks for a correct comparison of 500 000 and 455 000 <u>or</u> $5 > 4.55$ <u>or</u> for concluding that 500 000 is an outlier	

Question	Scheme	Marks
<p>9 (a)</p> <p>(b)</p> <p>(c)(i)</p> <p>(ii)</p> <p>*(d)</p> <p>(e)</p>	<p>Any supporting reason why he may have to collect the data himself. E.g. The data may not already exist. (There is no secondary data available).</p> <p>Any sensible problem with small sample size. e.g. may not be representative may be biased results may not be reliable results may not be accurate</p> <p>Cluster</p> <p>Stratified</p> <p>Method 2 is....</p> <ul style="list-style-type: none"> • More representative • Random/allows all members of population equal chance of selection • Not/less biased • More reliable <p>At least 3 quantitative response boxes which</p> <p>1) do not overlap 2) are exhaustive 3) include units</p>	<p>B1</p> <p>(1)</p> <p>B1</p> <p>(1)</p> <p>B1</p> <p>B1</p> <p>(2)</p> <p>B2</p> <p>(2)</p> <p>B2</p> <p>(2)</p> <p>[8]</p>
Notes		
	<p>(a) ‘No one has done the survey before’ B1 ‘The data required is specific to his investigation’ B1 ‘It’s more reliable/accurate/up to date’ B0</p> <p>(b) Any one problem identified (ignore extraneous non-contradictory responses)</p> <p>(d) B2 for any 2 reasons (B1 for any one reason)</p> <p>Just repeating wording in method 2 on its own is B0 e.g. selecting residents in proportion B0</p> <p>(e) Must have at least 3 response boxes B2 for all 3 criteria (B1 for at least 1 criteria) Condone a useable table for response boxes</p> <p>Note: For exhaustive allow e.g. 0 – 1, 2 – 3, 4+ Allow correct use of inequalities</p>	

Question	Scheme							Marks
10 (a)(i)	Country			r_1	r_2	d	d^2	M1
	Norway	10.8	100 800	1	1	0	0	
	Sweden	10.4	60 400	2	2	0	0	
	Italy	6.3	35 900	3	4	-1	1	
	Croatia	6.1	13 600	4	6	-2	4	
	France	6.0	42 500	5	3	2	4	
	Greece	5.5	21 900	6	5	1	1	
	Bulgaria	2.3	7 500	7	7	0	0	
							$\sum d^2 = 10$	
(ii)	$1 - \frac{6 \times 10}{7(7^2 - 1)} = 0.82(142\dots)$							M1 A1 (4)
(b)	Positive							B1ft (1)
(c)	No effect (rankings will remain the same).							B1 (1)
(d)	Cannot be used (to support Daniel's belief) since correlation does not mean causation.							B1 (1) [7]
Notes								
(a)(i)	M1 for attempt at ranking GDP (at least 4 correct) (Allow fully correct reverse rankings for M1) A1 for fully correct rankings, squared differences summed and no errors seen.							
(ii)	M1 for correct substitution into formula (including $1 - \dots$) (Allow substitution of their $\sum d^2$ for M1) A1 for awrt 0.82							
(b)	Must agree with the sign of their (a)(ii) (Ignore comments on strength) If $ \text{their (a)(ii)} > 1$ or there is no answer to (a)(ii) then score B0 here. Condone a correct interpretation of the correlation.							
(c)	No effect/will not change							
(d)	Both: <u>cannot</u> be used and supporting reason e.g. correlation \neq causation or there may be other factors which cause an increase							

Question	Scheme	Marks
11 (a)(i)	$\frac{16}{30}$	B1
(ii)	$\frac{19}{30}$	B1
(iii)	$\frac{10+6+5}{30} = \frac{21}{30}$	M1 A1 (4)
(b)	$\frac{6}{30} \times \frac{5}{29} = \frac{30}{870} \left(= \frac{1}{29} \right)$	M1 A1 (2)
(c)	$P(\text{Temp} > 29 \text{rain}) = \frac{6}{11} (= 0.54(54\dots))$ $P(\text{Temp} > 29 \text{does not rain}) = \frac{10}{19} (= 0.52(63\dots))$	B1
	$\frac{6}{11} > \frac{10}{19}$ so when it rains, there is a (slightly) higher chance of the temperature being above 29°C /Greg's thought is incorrect. Or $\frac{6}{11} (= 0.5454\dots) \approx \frac{10}{19} (= 0.5263\dots)$ so rain has no/little effect on the temperature being above 29°C/Greg's thought is incorrect.	B1
		(2)
		[8]

Notes

(a)(i)	Allow equivalent fraction, awrt 0.53 or awrt 53%
(a)(ii)	Allow equivalent fraction, awrt 0.63 or awrt 63%
(a)(iii)	M1 for either $\frac{10+6+5}{30}$ or $\frac{16}{30} + \frac{11}{30} - \frac{6}{30}$ A1 allow equivalent fraction, 0.7 or 70%
(b)	M1 for $\frac{k}{30} \times \frac{(k-1)}{29}$ with $0 < k < 30$ A1 allow equivalent fraction, awrt 0.03 or awrt 3%
	SC: $\frac{6}{30} \times \frac{6}{30}$ scores M1A0
(c)	1 st B1 for either conditional probability (allow rounded or truncated) $P(\text{Temp} > 29 \text{rain}) = \frac{6}{11}$ or $P(\text{Temp} > 29 \text{does not rain}) = \frac{10}{19}$ Watch out for $\frac{16}{30} = 0.53$ which is not a conditional probability and scores B0 2 nd B1 both conditional probabilities and correct conclusion

Question	Scheme	Marks
12. (a)	$18 \div 2 \times 45$ $= 405$	M1 A1 (2)
(b)	To allow the tagged geese to mix with the rest of the population.	B1 (1)
(c)	It would be unreliable to use this sample since.... <ul style="list-style-type: none"> The population will have changed (births/deaths/flown away) The tags may have fallen off 	B1 B1 (2) [5]

Notes		
(a)	M1 for any correct method e.g. $\frac{2}{18} = \frac{45}{N}$ or $2:18 = 45:N$	
(b)	Idea of mixing or allows for all geese to have same chance of selection (random) Allow comments which explain why waiting more than 1 day would be inappropriate	
(c)	1 st B1 for it would be unreliable plus any reason 2 nd B1 for a suitable supporting reason	

Question	Scheme	Marks
13. (a)	Another sample should be taken (immediately)	B1 (1)
(b)(i)	5.2	B1
(ii)	Point plotted at (7, 5.2)	B1ft
(iii)	The machine should be shut down/reset.	B1ft (3) [4]

Notes		
(ii)	Allow ½ square tolerance Follow through their answer to (b)(i) but must be plotted above the 7	
(iii)	Must have an answer to part (b)(i) or (b)(ii) Must ft their answer to (b)(ii). If no answer to (b)(ii), must ft their (b)(i) If their answer to (b)(ii) lies between 4 and 5 allow ‘take another sample’ or ‘shut down/reset the machine’ If their answer to (b)(ii) < 4, then e.g. ‘no further action is required’/‘allow machine to continue’	

Question	Scheme	Marks
14 (a)(i)	$p = 0.7$ oe	B1
(a)(ii)	'0.7' ² = 0.49 oe	M1 A1 (3)
(b)	$10(0.7)^3(0.3)^2$ or $5(0.7)^4(0.3)$ or $(0.7)^5$ or $10(0.7)^2(0.3)^3$ or $5(0.7)(0.3)^4$ or $(0.3)^5$ $10(0.7)^3(0.3)^2 + 5(0.7)^4(0.3) + (0.7)^5$ (0.3087 + 0.36015 + 0.16807 =) 0.83692	M1 M1 A1 (3)
(c)	$P(X = 4) = 0.36(015)$ $P(X = 3) = 0.30(87)$ $P(X = 5) = 0.16(807)$ $P(X = 4)$ or 0.36(015) identified as the greatest probability (so 4 is the most likely number of red marbles)	M1 A1 (2)
(d)	The binomial distribution cannot be used since... the probability of success (on each trial) is not constant.	B1 B1 (2) [10]
Notes		
(a)(ii)	M1 for 'their (a)(i)' ²	
(b)	M1 for at least one binomial probability using $p + q = 1$ M1 for using $P(X = 3) + P(X = 4) + P(X = 5)$ oe with $p + q = 1$ (M1M1 is implied by 0.30(87) + 0.36(015) + 0.16(807) oe) A1 for awrt 0.84	
(c)	M1 for comparing $P(X = 4)$ with $P(X = 3)$ or $P(X = 5)$ <u>or</u> listing $P(X = 3)$, $P(X = 4)$ and $P(X = 5)$ (allow expected value = 0.7×5 for M1) A1 for 4 from correct working and comparison of probabilities	
(d)	1 st B1 for cannot be used with a supporting reason 2 nd B1 for a correct statistical reason e.g. no longer have fixed probability of success e.g. trials are not independent	

Question	Scheme	Marks
<p>15.(a)</p> <p>(b)</p> <p>(c)</p>	$\frac{14.1 - 14.5}{0.6} = -0.66(6\dots)$ <p>The gymnast did better on the balance beam, since the standardised score is higher.</p> $\frac{15.3 - 14.5}{0.6} = (1.333\dots)$ <p>Normal distribution has 95% of data within ± 2 standard deviations. Since no data is more than 1.3 standard deviations above the mean, it would <u>not</u> be <u>suitable</u> to use a normal distribution to model these data.</p>	<p>M1</p> <p>A1 (2)</p> <p>B1ft B1ft (2)</p> <p>M1</p> <p>M1</p> <p>A1 (3)</p> <p>[7]</p>
Notes		
<p>(a)</p> <p>(b)</p> <p>(c)</p>	<p>M1 for using $\frac{\pm(X - \mu)}{\sigma}$</p> <p>A1 for awrt -0.7 allow $-2/3$ or $-0.\dot{6}$ for A1</p> <p>1st B1 for better on the balance beam 2nd B1 for standardised score on balance beam is higher or standardised score is positive for the balance beam and negative for the vault or scored above mean on balance beam and below mean on vault If their (a) > 0.5, then ft vault for both B1 marks.</p> <p>1st M1 for calculating the standardised score for 15.3 or calculating $14.5 + 2 \times 0.6 (=15.7)$ 2nd M1 for use of 95% within ± 2 standard deviations of mean/virtually all data within ± 3 standard deviations of mean 3rd A1 dependent upon both M marks for correct conclusion, it is <u>not suitable</u>, with correct figures.</p>	

Modifications to the mark scheme for Modified Large Print (MLP) papers.

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: $\pm 5^\circ$

Measurements of length: ± 5 mm

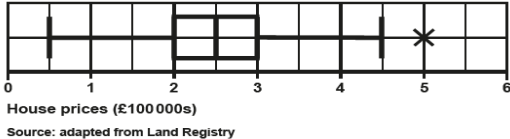
PAPER: 5ST1H_01

Question		Modification	Notes
1		Diagram enlarged. The point at 2014 has been moved to 475. Right vertical axis has been labelled. Crosses have been changed to solid dots. Axes labels have been moved to the left of the horizontal axis and above the vertical axis. Source has been left aligned. Wording added 'adapted from' after 'Source:' [Leeway will be needed for plotting trend line]	Standard mark scheme
2	(a)(ii)	Diagram enlarged. Line has moved to 65 goes through 90. Right vertical axis has been labelled. Axes labels have been moved to the left of the horizontal axis and above the vertical axis. Source has been left aligned. Numbers '60 and 70' changed to '55 and 65'.	Apply standard mark scheme, ... answers 7, 8, 9 still provide acceptable tolerance

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Question	Modification	Notes
(c)	Leeway will be needed for answering the questions	Apply standard mark scheme, except: 1 st B1: Median is 38 (for tablet owners) or difference is 2 (accept ±1 tolerance on these) 2 nd B1: no change 3 rd B1: IQR is (52 – 28 =) 24 (years) (accept ±1 on quartiles so answers in range [22 – 26]) 4 th B1: no change 2 marks in 1 and SC examples stand.

Question(b)	Modification	Notes
<p>3</p> <p>(b)</p>	<p>Diagram enlarged. Key moved above and to the left of the diagram. On the 35-54 category, correct has been moved up to 60%. Too low has been changed to dotted shading. Right vertical axis has been labelled. Axes labels have been moved to the left of the horizontal axis and above the vertical n axis. Wording added 'adapted from' after 'Source:'</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p>Key:</p> <p> Don't know</p> <p> Too high</p> <p> Correct</p> <p> Too low</p> </div> <div style="text-align: center;"> <p>Question 3</p> <p>Percentage</p> <p>Age group</p> <p>Source: adapted from Ofcom Residential Postal Tracker</p> </div> <div style="margin-left: 20px;"> <p>Percentage on the table changed to: 15, 40, 10 and 35.</p> </div> </div>	<p>Apply standard mark scheme, except:</p> <p>(a)(ii) $60 - 20$</p> <p style="text-align: right;">= 40 (%)</p> <p>Notes for (a)(ii):</p> <p>M1 for 60 - '20' <u>or</u> $a - 20$</p> <p>SC stands unchanged</p> <p>(b) lines should be at 15 then 55 then 65 (accept $\pm 1/2$ gap tolerance)</p> <p>(c) stands as it is, but figures to ignore may differ</p>

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Question(b)	Modification	Notes
4	(d) First table of the example question has been removed. Second table has been put in the diagram book with the wording added above 'On a scale of 1 to 10 being 1 certain not to vote, 10 being certain to vote	Standard mark scheme
6	(c) Last column extended to allow for working	Standard mark scheme
7	Table has been turned to vertical format and left aligned	Standard mark scheme
8	Diagram enlarged. Points on the boxplot moved to: 0.5, 2, 2.5, 3 and 4.5 Horizontal axis has been moved to the left. Wording added 'adapted from' after 'Source' 	(a) The median is £250 000 (b) 1 st M1 for $3 - 2 (= 1)$ 2 nd M1 for $3 + 1 \times 1.5 (= 4.5)$ A1 for $5 > 4.5$ (Allow equivalent statements in £000s)
10	Braille only: answer spaces labelled from (m) to (z) and the last column has been removed for braille candidates	Standard mark scheme
11	Diagram enlarged. Number 9 has been moved to the top left of the rectangle in line with the other numbers. Labels 'Temperature above 29°' and 'Rain' have been moved above the circles. Source has been left aligned	Standard mark scheme

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Question		Modification	Notes
13		Diagram enlarged. Axes labels have been moved to the left of the horizontal axis and above the vertical axis. Crosses have been changed to solid dots. [Leeway will be needed for plotting the point]	Standard mark scheme

