Mark Scheme (Results)

Summer 2022

Pearson Edexcel GCE
In Statistics (9ST0)
Paper 02: Statistical Inference

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Summer 2022
Question Paper Log Number 69433
Publications Code 9ST0_02_2206_MS

General Marking Guidance

Total marks

The total number of marks for the paper is 80.

Mark types

The Edexcel Statistics mark schemes use the following types of marks:

- **M** **Method** marks,
  awarded for 'knowing a method and attempting to apply it',
  unless otherwise indicated.
- **A** **Accuracy** marks can only be awarded if the relevant method (M) marks have been earned.
- **B** **Unconditional accuracy** marks are independent of M marks
- **E** **Explanation** marks

NOTE: Marks should not be subdivided.

Abbreviations

These are some of the marking abbreviations that will appear in the mark schemes.

- ft follow through
- PI possibly implied
- cao correct answer only
- cso correct solution only
  (There must be no errors in this part of the question)
- awrt answers which round to
- awfw answers which fall within (a given range)
- SC special case
- nms no method shown
- oe or equivalent
- dep dependent (on a given mark or objective)
- dp decimal places
- sf significant figures
- ∗ The answer is printed on the paper

Further notes

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied **positively**. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is **no ceiling** on achievement. All marks on the mark scheme should be used appropriately.
- 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.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- All A marks are 'correct answer only' (cao), unless shown, for example, as A1ft to indicate that previous wrong working is to be followed through.
- All M marks are 'possibly implied' (PI) unless specifically stated otherwise in the 'Notes' column.
- After a **misread**, the subsequent A marks affected are treated as A1ft, but manifestly absurd answers should never be awarded A marks.
- **Crossed out** work should be marked UNLESS the candidate has replaced it with an alternative response.
- If **two solutions** are given, each should be marked, and the resultant mark should be the mean of the two marks, rounded down to the nearest integer if needed.

Qu	Scheme	Marks	AO	Notes
1(a)	[Assuming distributions are the same shape]			
	(Ranked for magnitude of errors)			
	H_0: no difference in (population) medians H_1: difference in (population) medians	B1	1.3	oe in words (samples from identical populations) or using $\eta_C = \eta_M$
		M1	2.1a	Clear attempt at ranks
	Rank (Comp) 11 4 5 8 3 1 2 7 9 **Rank (Math)** 6 13 12 10 14 15 16 17.5 17.5			
		M1	1.3	Attempt at totalling their ranks **or** at least 9 correct ranks.
		A1	1.3	All ranks correct (ignore ties) **or** either total correct.
	$T_C = 11 + 4 + \cdots + 9 = 50$ $T_M = 6 + 13 + \cdots + 17.5 = 121$			
	$U_C = 50 - \frac{1}{2}(9 \times 10) = 5$ $U_M = 121 - \frac{1}{2}(9 \times 10) = 76$	M1	1.3	Attempt at U_C or U_M, using their totals and their n
	ts = 5 (or 76)	A1	1.3	**or** 76
	[For 2-tail test, $\alpha = 0.05$] cv = 18 (or 63)	B1	1.3	**or** 63
	"5" $<$ "18" so reject H_0	M1	2.1b	**or** $76 > 63$ Comparison of their ts and their cv (dep use of WRS) in **same tail**.
	There is significant evidence (at the 5% sig. level) that… …the median prediction **error** for the computer model is **different** from the	E1dep	2.1a	dep on ts & cv both correct Must be in context (at least difference and

Qu	Scheme	Marks	AO	Notes
	median prediction **error** for the mathematical model.			error/model) and conclusion not definite. **or** …that the computer simulation is more accurate.
	(Ranked using given data)			
	H_0: no difference in population medians H_1: difference in population medians	B1	1.3	oe in words (samples from identical populations) or using $\eta_C = \eta_M$
		(M1)		Clear attempt at ranks
	<table><tr><td>**Rank (Comp)**</td><td>1</td><td>4</td><td>3</td><td>2</td><td>5</td><td>6</td><td>7</td><td>9</td><td>10</td></tr><tr><td>**Rank (Math)**</td><td>8</td><td>13</td><td>12</td><td>11</td><td>14</td><td>15</td><td>16</td><td>17.5</td><td>17.5</td></tr></table>			
		(M1)		Attempt at totalling their ranks **or** at least 9 correct ranks.
		(A1)		All ranks correct (ignore ties) or either total correct.
	$T_C = 1 + 4 + \cdots + 10 = 47$ $T_M = 8 + 10 + \cdots + 17.5 = 124$			
	$U_C = 47 - \frac{1}{2}(9 \times 10) = 2$ $U_M = 124 - \frac{1}{2}(9 \times 10) = 79$	(M1)		Attempt at U_C or U_M, using their totals and their n
	ts = 2 (or 79)	(A1)		**or** 79
	[For 2-tail test, $\alpha = 0.05$] cv = 18 (or 63)	(B1)		**or** 63
	"2" $<$ "18" so reject H_0	(M1)		**or** $79 > 63$ Comparison of their ts and their cv (dep use of WRS) in **same tail**

Qu	Scheme	Marks	AO	Notes
	There is significant evidence (at the 5% sig. level) that… …the median prediction **error** for the computer model is **different** from the median prediction **error** for the mathematical model.	(E1dep)		**or** …that the computer simulation is more accurate. Must be in context (at least difference and error/model) and conclusion not definite dep on ts & cv both correct
1(b)	[The *t*-test would be unsuitable as…]			
	…the distribution of percentage errors cannot be assumed to be normal …			**or** distribution of percentage errors is skew
	…and the sample may be too small for the Central Limit Theorem (or CLT) to apply.			Need some reference to CLT
	(Population) variances may not be equal.			
		E1, E1	3.1a, 3.1a	E1 for each comment (Max E2) context not required.

Qu	Scheme	Marks	AO	Notes
1(c)	I agree…	E1dep	3.1a	dep on reasonable effort at explanation
	…because any differences between the cables used for each model would be accounted for.			oe
	…reduces experimental error			oe
	…so that any difference found is due to the model rather than the cable.			
		E1	3.1a	For explanation
	I disagree…	(E1dep)		dep on reasonable effort at explanation
	…because the cables used for each test could become damaged which could have an effect on the following results. **or** …that the computer simulation is more accurate.	(E1)		oe
1(d)	Analyse with **paired**…	E1	3.1a	
	…**Wilcoxon signed-**rank test.	E1	3.1a	**or** sign test
	Total	**15**		

Qu	Scheme	Marks	AO	Notes
2(a)	H_0: $p = 0.2$ H_1: $p < 0.2$	B1	1.3	**Accept** π **Do not accept** $\hat{p}$ Condone H_0: $p_I = p_{UK}$ H_1: $p_I < p_{UK}$ oe well explained in words
	[X = number of students sleeping for less than 5 hours the previous night]			
	$X \sim B(40, 0.2)$	M1	1.3	PI Clear use of binomial distribution with n=40 and any p
	$P(X \leq 6) = 0.2859$	A1	1.3	0.285~0.286 **or** CR: X≤ 3 with p=0.028
	"0.2859" > 0.05 so do not reject H_0	M1	2.1b	PI Comparison of 'their *p*-value' with 0.05 **or** 6 > 3 (CR)
	There is no significant evidence… …that the **proportion** is **smaller** in the **UK** than in India.	A1dep	2.1a	**or** …to support Hamish's suspicion. Must be in context and conclusion not definite dep M1A1M1
SC: Use of normal approx. max 3/5 B1M1A0M1A0 Hypotheses, model, comparison of ts with (-)1.645 or *p-value*=0.429 with 0.05				

2(b)	**Possible comments (not exhaustive)**			
	Only students at Hamish's university used.			
	Only responses for one night.			Might have been a party/exam time so not independent.
	Small sample [so low power test].			
	Students are self-reporting.			
	They might not know how long they slept.			oe
		E1, E1	3.1a, 3.1a	E1 for each sensible comment (Max E2)
2(c)	**Exact binomial method** H_0: $p = 0.626$ H_1: $p \neq 0.626$	B1	1.3	For both Accept π for p Condone H_0: $p_I = p_{UK}$ H_1: $p_I \neq p_{UK}$ oe well defined in words
	[X = Number of poor sleepers]			
	$X \sim B(105, 0.626)$	M1	1.3	Use of binomial with either $n = 105$ or p=0.626
	$P(X \geq 84)$	M1	1.3	**or** P(X≥ 76) = 0.0226 *or* 0.0227
	$= 0.000\ 09302$	A1	1.3	awrt 9.30×10^{-5} **or** 0.99996 or 0.99997 **or** CR: X≥ 76, (X≤ 55)
	< 0.025 so reject H_0	M1	2.1b	PI Comparison with 0.025 **or** 84 > 76
	There is significant evidence of a **difference** between the **proportion**	E1dep	2.1a	In context, not definite. dep all 4 previous marks.

	of poor sleepers in the UK and in India.			
	Normal approximation method 1			
	H_0: $p = 0.626$ H_1: $p \neq 0.626$	(B1)		For both Accept π for p Condone H_0: $p_I = p_{UK}$ H_1: $p_I \neq p_{UK}$ oe well defined in words
	$z = \dfrac{0.80 - 0.626}{\sqrt{\dfrac{0.626 \times 0.374}{105}}}$	(M1)		PI Use of 0.626 **or** use of 84 and 65.73 condone use of 83.5
		(M1)		PI Dividing by their appropriate standard deviation.
	$= 3.68(49)$	(A1)		awfw 3.5~3.7 **or** CR: $\bar{X} \geq 75$ (implies previous M1M1 too)
	"3.68" > 1.96 so reject H_0	(M1)		PI Comparison of 'their' ts with 1.96 **or** p=0.00011 < 0.025 oe **or** $\hat{p}$ > 0.7185 required **or** $\bar{x}$ > 75.45 required
	There is significant evidence of a **difference** between the **proportion** of poor sleepers in the UK and in India.	(E1dep)		In context, not too definite dep all 4 previous marks.
SC Two proportions test B1M1M0A0M1E0 3/6 max 3rd M1 for their ts comparison with 1.96				

2(d)	$[\bar{x} = 6.48, s = 1.71, n = 105]$			
	$6.48 \pm (1.96) \times \frac{1.71}{\sqrt{105}}$	M1	1.3	PI Use of $\sqrt{105}$ or 0.1669
		B1	1.3	PI Using $z = 1.96$ **or** $t_{104} = 1.98(3)$
	CI is (6.15, 6.81)	A1	1.3	awfw 6.14~6.15
2(e)	This CI for the UK (6.15, 6.81) is completely within the 95% CI for India which is (6.07, 6.83)…	M1ft	2.1b	For correct comparison for both ends could be seen on a number line ft their CI for the UK as long as consistent
	…so there is no significant evidence of a difference in the mean PSQI scores for students in India and the UK.	E1dep	2.1a	oe In context, not too definite. dep previous M1 and correct CI in (d)
	Total	**18**		

Qu	Scheme	Marks	AO	Notes
3(a)	$p < 0.0001$ suggests there is (strong) evidence of a **difference** between the of pictures of **people** being active on **Instagram** and on **Flickr**	E1	2.1b	Evidence of difference.
		E1	2.1a	Completely correct in context.
3(b)	$d = 1.49$ suggests a **large effect** between difference in proportion of pictures of people posing on Instagram and that on Flickr (proportion of pictures of people posing is greater on Instagram.)	E1	1.3	Large effect or big difference
	d = -0.44 suggests a **medium** or **small effect** between difference in proportion of pictures of reptiles on Instagram and that on Flickr (proportion of pictures of reptiles on Flickr is greater).	E1	1.3	Medium/small effect or small difference Do not allow for very small
		E1	2.1a	Context correct for at least one.
3(c)	**Possible comments (not exhaustive)**			
	Instagram and Flickr have different proportions of pictures posted in these categories.			
	All the differences are 'large', except for in the Reptile category.			Reptiles posted least
	There is a higher proportion of human-based photos on Instagram.			**or** Clear difference between the platforms for animal and human based photographs.
	There is a higher proportion of animal-based photos on Flickr.			
	There is a higher proportion of arthropod photos on Flickr.			
		E1, E1	2.1b, 2.1b	E1 for each sensible comment (max E2)
		E1dep	1.3	Use of non-technical language for non-specialist audience dependent upon a sensible comment.

Qu	Scheme	Marks	AO	Notes
	Total	**8**		

Qu	Scheme	Marks	AO	Notes
4(a)	H_0: No difference in means between varieties H_1: At least two means differ (between varieties) H_0: No difference in means between fertiliser concentration H_1: At least two means differ (between fertiliser concentration)	B1	1.3	oe At least one correct pair Accept equivalent in symbols, provided two sets of hypotheses (or hypotheses combined) e.g. H_0: $\mu_{i,j} = \mu$ for all i,j H_1: $\mu_{i,j} \neq \mu$ for some i,j H_0: $\mu_A = \mu_C = \mu_D = \mu_M$ H_1: At least two means differ H_0: $\mu_{10} = \mu_{20} = \mu_{30}$ H_1: At least two means differ May also be seen combined, e.g. H_0: No difference in means between varieties **and** no difference in means between fertiliser concentration H_1: At least two means differ between varieties **or** at least two means differ between fertiliser concentration
	Total SS $= 395.14 - \frac{68.8^2}{12}$ $= 395.14 - 394.45$ $= 0.6867$	M1	1.3	PI by correct table SS Total awrt 0.687
	Variety SS = $\frac{17^2+16.7^2+16.9^2+18.2^2}{3} - 394.45$ = 0.46	M1	1.3	PI (At least) one of these seen **Condone** small slip awrt 0.11
	Fertiliser SS = $\frac{22.4^2+23.3^2+23.1^2}{4} - 394.45$ = 0.1117			
	Error SS= $0.6867 - 0.46 - 0.1117$ = 0.115	M1ft	1.3	PI ft their SS values not negative

Qu	Scheme	Marks	AO	Notes
	<table><tr><th></th><th>ss</th><th>df</th><th>ms</th></tr><tr><td>Variety</td><td>0.460</td><td>3</td><td>0.153</td></tr><tr><td>Fertiliser</td><td>0.112</td><td>2</td><td>0.056</td></tr><tr><td>Error</td><td>0.115</td><td>6</td><td>0.019</td></tr><tr><td>Total</td><td>0.687</td><td>11</td><td></td></tr></table>			Correct table awrt (ignoring total) Scores M1M1M1B1M1
		B1	1.3	PI df correct (3,2,6)
		M1ft	1.3	PI MS=SS/df for variety or fertiliser
	To compare variety, $F = \frac{their\ MSv}{their\ MSe} = 7.984$ To compare fertiliser concentration, $F = \frac{their\ MSf}{their\ MSe} = 2.913$	M1	1.3	PI At least one of (variety or fertiliser) their MS/Error MS not if negative
		A1	1.3	awfw F=7.8~8.6 (or p = 0.0161) **or** awfw F=2.8~3.2 (or p = 0.1306)
	Critical value $F_6^3(0.05) = 4.757$ Critical value $F_6^2(0.05) = 5.143$	B1	1.3	For either awrt 4.76 **or** awrt 5.14
	"8"> "4.757" so reject H_0 for varieties. "2.913" < "5.143" so do not reject H_0 for fertiliser concentration.	M1	2.1b	PI Correct comparisons 'their ts' with either correct cv Either needed. **or** comparing *p*-values with 0.05
	Thus there is significant evidence of a **difference** between mean oat yields for the **varieties** of oat seed … …but there is **no** significant evidence of a **difference** between the mean oat	E1dep	2.1a	For **both** conclusions in context, not too definite. dep previous 3 marks

<table>
<tr><th>Qu</th><th>Scheme</th><th>Marks</th><th>AO</th><th>Notes</th></tr>
<tr><td></td><td>yields for the different fertiliser concentrations.</td><td></td><td></td><td></td></tr>
<tr><td rowspan="4">4(b)</td><td>(Oat yield is approximately) normally distributed (for each variety/fertiliser concentration combination).</td><td></td><td></td><td></td></tr>
<tr><td>(Oat yield has approximately) equal variances (for each variety/fertiliser concentration combination).</td><td></td><td></td><td></td></tr>
<tr><td>No interaction between oat variety and concentration of fertiliser.</td><td></td><td></td><td></td></tr>
<tr><td></td><td>E1, E1</td><td>3.1a,
3.1a</td><td>E1 for each assumption
Max E1 if no context</td></tr>
<tr><td rowspan="3">4(c)</td><td><table><tr><th></th><th>Total</th><th>Mean</th></tr><tr><td>Aspen</td><td>17</td><td>5.67</td></tr><tr><td>Canyon</td><td>16.7</td><td>5.57</td></tr><tr><td>Delfin</td><td>16.9</td><td>5.63</td></tr><tr><td>Merlin</td><td>18.2</td><td>6.07</td></tr></table></td><td></td><td></td><td></td></tr>
<tr><td>It appears Merlin would be the best variety to maximise yield because it has the greatest mean yield, 6.07 (or total 18.2)</td><td>E1</td><td>2.1b</td><td>Merlin suggested</td></tr>
<tr><td>There is no significant difference in concentration of fertiliser so no advice on which to use.</td><td>E1</td><td>2.1b</td><td>Correct fertiliser comment</td></tr>
<tr><td colspan="2">Total</td><td>15</td><td></td><td></td></tr>
</table>

Qu	Scheme	Marks	AO	Notes
5(a)	N = No laughter F = Fake laughter R = Real laughter			
	H_0: $\mu_F - \mu_N = 0$ H_1: $\mu_F - \mu_N > 0$	B1	1.3	oe At least one pair correct
	H_0: $\mu_R - \mu_N = 0$ H_1: $\mu_R - \mu_N > 0$			H_0:$\mu_d = 0$ H_1: $\mu_d > 0$
	[5% one-tailed with $\nu = 9$] cv = 1.83(3)	B1	1.3	cao **or** p-values: awrt 0.043 **and** awrt 0.0033
	$1.93 > 1.83$ or $3.51 > 1.83$ so reject both H_0	M1	2.1b	PI Correct comparison of at least one test value with their critical t-value. Signs consistent. **or** Correct comparison of at least one p-value with 0.05
	The data does support Sinead's belief.	E1dep	2.1a	oe referring to funniness of jokes with laughter. Not too strong and in context. dep B1M1

Qu	Scheme	Marks	AO	Notes
5(b)	H_0: $\mu_R - \mu_F = 0$ H_1: $\mu_R - \mu_F \neq 0$	B1	1.3	oe **Accept** μ_d
	Differences: -0.9, 1.3, -0.4, 1.9, 0.3, 0.7, 0.6, 0.5, 0.8, 1.0	B1	1.2	PI Attempt at differences **or** negative
	mean $= (-)0.58$ $s = 0.798(3)$	B1	1.2	PI Both correct **Condone** $s = 0.757(4)$
	ts: $t = \frac{(-)0.58}{\frac{0.798}{\sqrt{10}}}$	M1ft	1.3	PI Numerator may be –ve **or** $\frac{\bar{d}}{\frac{0.798}{\sqrt{10}}}$
	$= 2.297$	A1	1.3	awrt (±)2.30 **or** $\frac{\bar{d}}{\frac{0.798}{\sqrt{10}}} = 2.262$
	[two-tailed, $\nu = 9$]			
	cv $= 2.262$	B1	1.3	**or** cv $= -2.26$ **or** p-value $= 0.0236$ **or** p-value $= 0.0472$ **or** $\bar{d} = \pm 0.571$
	"2.297" > "2.262" so reject H_0	M1	2.1b	PI Comparison their ts with the correct cv. **or** $0.0236 < 0.025$ **or** $0.0472 < 0.05$ **or** $0.58 > 0.571$

Qu	Scheme	Marks	AO	Notes
	There is significant evidence of a **difference** between '**Fake** laughter' and '**Real** laughter' in terms of the perceived funniness of jokes. (It appears jokes are thought to be funnier with 'Real laughter' than with 'Fake laughter').	E1dep	2.1a	Correct conclusion in context. Dep previous 4 marks.
SC: Use of two independent samples B1B0B0M1A0B1M1A0 Max4/8 M1 ts=awrt(-)1.3 B1 cv=$\pm$2.101 M1 comparing their 1.3 with 2.10				
	Total	**12**		

<table>
<tr><td>6(a)</td><td>H_0: no association (between whether it was their first experience and the likelihood they would use the company again)
H_1: an association (between whether it was their first experience and the likelihood they would use the company again)</td><td>B1</td><td>1.3</td><td>oe
Both correct</td></tr>
<tr><td></td><td colspan="4">Expected frequencies
<table><tr><th></th><th></th><th>First experience</th><th></th><th></th></tr><tr><th></th><th></th><th>Yes</th><th>No</th><th>Totals</th></tr><tr><th rowspan="3">Use again likelihood</th><th>Definitely yes</th><td>14.9</td><td>6.1</td><th>21</th></tr><tr><th>Probably yes</th><td>14.2</td><td>5.8</td><th>20</th></tr><tr><th>No</th><td>14.9</td><td>6.1</td><th>21</th></tr><tr><th></th><th>Totals</th><th>44</th><th>18</th><th>62</th></tr></table></td></tr>
<tr><td></td><td></td><td>M1</td><td>1.3</td><td>PI
At least one expected value correct to 1 dp</td></tr>
<tr><td></td><td>Contribution to χ^2 :<table><tr><td>2.34</td><td>5.72 (or 5.71)</td></tr><tr><td>1.02</td><td>2.50 (or 2.49)</td></tr><tr><td>0.30</td><td>0.72</td></tr></table></td><td>M1ft</td><td>1.3</td><td>PI
Attempt at $\frac{(O-E)^2}{E}$
(at least one correct contribution seen to 1dp)</td></tr>
<tr><td></td><td>ts: $\chi^2 = \frac{(9-14.90)^2}{14.90} + \cdots + \frac{(4-6.10)^2}{6.10}$</td><td>M1ft</td><td>1.3</td><td>Intention to sum
PI</td></tr>
<tr><td></td><td>ts = 12.6</td><td>A1</td><td>1.3</td><td>awfw 12.4~12.8</td></tr>
<tr><td></td><td>[χ_2^2 at 5% level]
cv = 5.99</td><td>B1</td><td>1.3</td><td>or p-value
awrt 0.0018 ~ 0.0019
Condone 7.38</td></tr>
<tr><td></td><td>“12.6” > 5.99
so reject H_0</td><td>M1</td><td>2.1b</td><td>PI
compare their ts with 5.99
or 0.00185 < 0.05</td></tr>
<tr><td></td><td>There is significant evidence of an association between whether it was their first experience and whether they would use the company again.</td><td>E1dep</td><td>2.1a</td><td>In context
dep ts and cv correct</td></tr>
</table>

6(b)	The joint category "definitely use the company again" and "not first experience" make the biggest contribution to χ^2 at 5.72 (or 5.71)	E1	2.1a	Condone mention of other contributions, but must identify joint category 5.72 **or** quote numerical justification 12 and 6.1
	This suggests that, far more customers than expected, who have used the company before, would definitely use them again.	E1	2.1a	oe Full explanation in context Comment to include contextualised reference to the direction of the difference between the obs and exp frequencies
6(c)	**Possible sources of bias** **(Not exhaustive)**			
	Only 62 out of 400 (ie only 15.5%) responded to the email. This very large non-response rate could introduce bias.			Comment on low response rate.
	Customers who chose not to give their email address are excluded.			
	Not everyone checks their email.			Comment on use of email. Survey only done by email.
	The categories used for 'Use Again'? are likely to introduce bias as there are two 'positive' responses but only one 'negative' response available.			Comment on two positive choices.
	The customers that responded to the email may be the customers with the strongest opinions.			Idea of customers self-selecting condone volunteer sample
		E1, E1	3.1a, 3.1a	
				E1 for each sensible comment (Max E2)
	Total	**12**		

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom