



**General Certificate of Education**

**Statistics 6380**

**SS06          Statistics 6**

**Mark Scheme**

*2009 examination – June series*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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### Key to mark scheme and abbreviations used in marking

|              |  |     |                            |
|--------------|--|-----|----------------------------|
| M            | mark is for method   |     |                            |
| m or dM      | mark is dependent on one or more M marks and is for method         |     |                            |
| A            | mark is dependent on M or m marks and is for accuracy              |     |                            |
| B            | mark is independent of M or m marks and is for method and accuracy |     |                            |
| E            | mark is for explanation  |     |                            |
|              |  |     |                            |
| √ or ft or F | follow through from previous incorrect result                      | MC  | mis-copy                   |
| CAO          | correct answer only  | MR  | mis-read                   |
| CSO          | correct solution only  | RA  | required accuracy          |
| AWFW         | anything which falls within  | FW  | further work               |
| AWRT         | anything which rounds to   | ISW | ignore subsequent work     |
| ACF          | any correct form   | FIW | from incorrect work        |
| AG           | answer given   | BOD | given benefit of doubt     |
| SC           | special case   | WR  | work replaced by candidate |
| OE           | or equivalent  | FB  | formulae book              |
| A2,1         | 2 or 1 (or 0) accuracy marks                                       | NOS | not on scheme              |
| -x EE        | deduct x marks for each error                                      | G   | graph                      |
| NMS          | no method shown  | c   | candidate                  |
| PI           | possibly implied   | sf  | significant figure(s)      |
| SCA          | substantially correct approach                                     | dp  | decimal place(s)           |

### No Method Shown

Where the question specifically requires a particular method to be used, we must usually see evidence of use of this method for any marks to be awarded. However, there are situations in some units where part marks would be appropriate, particularly when similar techniques are involved. Your Principal Examiner will alert you to these and details will be provided on the mark scheme.

Where the answer can be reasonably obtained without showing working and it is very unlikely that the correct answer can be obtained by using an incorrect method, we must award **full marks**. However, the obvious penalty to candidates showing no working is that incorrect answers, however close, earn **no marks**.

Where a question asks the candidate to state or write down a result, no method need be shown for full marks.

Where the permitted calculator has functions which reasonably allow the solution of the question directly, the correct answer without working earns **full marks**, unless it is given to less than the degree of accuracy accepted in the mark scheme, when it gains **no marks**.

**Otherwise we require evidence of a correct method for any marks to be awarded.**

SS06

| Q            | Solution  | Marks  | Total     | Comments  |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
|--------------|---|--|-----------|---|----|-------|--------|---|---------|-------|--------|----|--------|-------|--------|----|---|-------------------------------|---|---|---|---|-------------------------------|---|---|
| 1            | <p>W So De Mar Di Sa Mah<br/> <math>d</math> 7 8 6 12 -3 9 -1</p> <p><math>H_0: \mu_d = 0</math>    <math>H_1: \mu_d \neq 0</math></p> <p><math>\bar{x}_d = 5.4286</math>    <math>s_d = 5.4423</math></p> $t = \frac{5.4286}{\frac{5.4423}{\sqrt{7}}}$ <p>= 2.64<br/>                     critical value <math>t_6 \pm 1.943</math></p> <p>Reject <math>H_0: \mu_d = 0</math> — Conclude there is significant evidence of a difference in pulse rates for different bench heights (rate higher for 40cm than for 30cm)</p> | <p>M1</p> <p>B1</p> <p>B1</p> <p>M1<br/>m1</p> <p>A1</p> <p>B1</p> <p>B1</p> <p>A1✓</p> <p>A1✓</p> | 10        | <p>M1 method for differences</p> <p>B1 both hypotheses — needs <math>\mu</math> or 'population'</p> <p>B1 5.43 (5.42~5.43) and 5.44 (5.44~5.45)</p> <p>M1 use of their <math>sd/\sqrt{7}</math></p> <p>m1 clearly correct method for <math>t</math></p> <p>A1 2.64 (2.63 ~ 2.65) or -2.64</p> <p>B1 6df</p> <p>B1 1.943 — ignore sign</p> <p>A1✓ correct conclusion their figures — must be compared with correct tail of <math>t</math>. Disallow if contradicted subsequently</p> <p>A1✓ correct conclusion in context — allow arithmetic errors or numerically incorrect <math>t</math> value only. Needs previous A1✓</p> |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| <b>Total</b> |   |  | <b>10</b> |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 2(a)         | <table border="1"> <tr> <td>Source</td> <td>SS</td> <td>df</td> <td>MS</td> </tr> <tr> <td>Bands</td> <td>3369.7</td> <td>3</td> <td>1123.23</td> </tr> <tr> <td>Error</td> <td>2168.8</td> <td>15</td> <td>144.59</td> </tr> <tr> <td>Total</td> <td>5538.5</td> <td>18</td> <td></td> </tr> </table>  | Source   | SS        | df  | MS | Bands | 3369.7 | 3 | 1123.23 | Error | 2168.8 | 15 | 144.59 | Total | 5538.5 | 18 |   | <p>B1</p> <p>B1</p> <p>M1</p> | 3 | <p>B1 any correct df</p> <p>B1 all correct df</p> <p>M1 method for error SS</p> |   |   |                               |   |   |
| Source       | SS  | df   | MS        |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| Bands        | 3369.7  | 3  | 1123.23   |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| Error        | 2168.8  | 15   | 144.59    |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| Total        | 5538.5  | 18   |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| (b)          | <p><math>H_0</math>: No difference between bands<br/> <math>H_1</math>: Difference between bands</p> $F = \frac{1123.23}{144.59} = 7.77$ <p>Critical value <math>F_{3,15}</math> is 5.417<br/>                     Reject <math>H_0</math> — significant evidence of a difference in average attendance for the different bands.</p>  | <p>M1</p> <p>m1</p> <p>A1</p> <p>B1</p> <p>A1✓</p>   | 5         | <p>M1 method for both MS — their df and +ve Error SS</p> <p>m1 method for <math>F</math>, their df — needs both Ms</p> <p>A1 7.77 (7.76~7.78)</p> <p>B1 5.417 or 5.42</p> <p>A1✓ conclusion in context — must be correct df and compared with upper tail of <math>F</math></p>  |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| <b>Total</b> |   |  | <b>8</b>  |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 3(a)         | <table border="1"> <tr> <td></td> <td>Wednesday</td> <td>Thursday</td> </tr> <tr> <td>1</td> <td>D</td> <td>M</td> </tr> <tr> <td>2</td> <td>M</td> <td>D</td> </tr> <tr> <td>3</td> <td>D</td> <td>M</td> </tr> <tr> <td>4</td> <td>M</td> <td>D</td> </tr> <tr> <td>5</td> <td>D</td> <td>M</td> </tr> <tr> <td>6</td> <td>M</td> <td>D</td> </tr> </table>   |  | Wednesday | Thursday  | 1  | D     | M      | 2 | M       | D     | 3      | D  | M      | 4     | M      | D  | 5 | D                             | M | 6   | M | D | <p>B1</p> <p>B1</p> <p>B1</p> | 3 | <p>B1 6Ms 6Ds</p> <p>B1 paired</p> <p>B1 3Ms 3Ds each day</p> |
|              | Wednesday   | Thursday   |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 1            | D   | M  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 2            | M   | D  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 3            | D   | M  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 4            | M   | D  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 5            | D   | M  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| 6            | M   | D  |           |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| (b)          | <p>Don't take a break/ take same number and length of breaks<br/>                     Drive as quickly as possible consistent with safety and speed limits etc</p>  | E2,1   | 2         | <p>E1 any reasonable point</p> <p>E1 clearly explained</p> <p>Disallow drive same speed</p>   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| (c)          | Paired $t$ -test  | E1<br>E1   | 2         | <p>E1 paired</p> <p>E1 <math>t</math>-test</p> <p>Allow sign test, Wilcoxon signed-rank test</p> <p>Disallow 2-Factor A of V, unless some explanation included</p>  |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |
| <b>Total</b> |   |  | <b>7</b>  |   |    |       |        |   |         |       |        |    |        |       |        |    |   |                               |   |   |   |   |                               |   |   |

SS06 (cont)

| Q              | Solution   | Marks                      | Total     | Comments   |
|----------------|--|----------------------------|-----------|--|
| <b>4(a)</b>    | 1st 0 1 1 1 2 2<br>2nd 0 1 2 0 1   | M1                         | 5         | M1 reasonable attempt at double sampling   |
|                | P(Accept) = P(0) + P(1) × P(2 or fewer) +<br>P(2) × P(1 or fewer)<br>= 0.2146 + 0.3389 × 0.8122 +<br>0.2587 × 0.5535<br>= 0.633  | m1<br>B1<br>M1<br>A1       |           | m1 method their attempt<br>B1 use of B(30, 0.05)<br>M1 completely correct method<br>A1 0.633 (0.632~0.634)   |
|                | <b>(b)</b> E (number tested)<br>= 30 + 30 × P(1 or 2)<br>= 30 + 30 × 0.5976<br>= 47.9  | M1<br>m1<br>A1             |           | M1 reasonable attempt at method<br>m1 completely correct method<br>A1 47.9 ( 47.8~48)  |
|                | <b>Total</b>   |                            |           | <b>8</b>   |
| <b>5(a)(i)</b> | $z = \frac{1001-998}{\frac{2.9}{\sqrt{6}}} = 2.534$  | M1<br>m1                   | 4         | M1 use of $\frac{2.9}{\sqrt{6}}$<br>m1 method for either z — ignore sign   |
| <b>(ii)</b>    | P(accept) = 1 – 0.994 = 0.006<br>$z = \frac{1001-1004}{\frac{2.9}{\sqrt{6}}} = -2.534$   | m1                         |           | m1 completely correct method both probabilities — allow interchanged<br>A1 0.006 ( 0.005 ~ 0.006 ) and<br>0.994 ( 0.994 ~ 0.995 )  |
| <b>(b)</b>     | P(accept) = 0.994<br>on insert   | A1<br>M1                   |           | A1 reasonably accurate plot — by eye<br>M1 method — needs M1 in (b)  |
| <b>(c)</b>     | 999.5  | M1<br>A1                   |           | A1 999.5 ( 999.3~999.6)  |
| <b>(d)</b>     | $\frac{999.5-1001}{\frac{2.9}{\sqrt{n}}} < -1.6449$<br>$\sqrt{n} > 1.6449 \times \frac{2.9}{1.5}$<br>$n > 3.180^2$<br>$n = 11$   | M1<br>B1<br>m1<br>m1<br>A1 | 5         | M1 reasonable attempt at expression (generous)<br>B1 1.6449 ( 1.64 ~ 1.65)<br>m1 correct expression — allow <,>=<br>m1 method for manipulation of expression<br>A1 11 or at least 11 |
| <b>Total</b>   |  |                            | <b>13</b> |  |
| <b>6(a)</b>    | Upper action 2.33 × 2.3 = 5.359<br>Upper warning 1.76 × 2.3 = 4.048<br>Lower warning 0.27 × 2.3 = 0.621<br>Lower action 0.09 × 2.3 = 0.207<br>+ graph  | M1<br>m1<br>A1             | 3         | M1 method for upper limits<br>m1 method for all limits<br>A1 accurate plot by eye<br>Allow B1 if values for range charts used or if incorrect sample size (eg 7) used — but not both |
| <b>(b)(i)</b>  | $\bar{x} = 399.0$ $s = 3.92$   | B1                         | 1         | 399 CAO and 3.92 (3.91~3.92)   |
| <b>(ii)</b>    | on graph   | B1<br>B1                   | 2         | B1 accurate plot of means — by eye<br>B1 accurate plot of sd — by eye  |
| <b>(iii)</b>   | Means — all within warning limits except sample 2 which is below lower action limit. Action appears to have been taken successfully.<br>all 7 below target sd — all between warning limits but variability appears to be increasing over last 5 samples. | E1<br>E1<br>E1             | 3         | an E mark for any sensible point — maximum 2 for each chart. Maximum 3 in total.   |

SS06 (cont)

| Q         | Solution   | Marks                        | Total     | Comments   |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
|-----------|--|------------------------------|-----------|--|---|-------|---|----|----|----|----|----|----|----|----|-----|----|----|----|----|-----|---|----|----|----|-----|-------|-----|-----|-----|-----|--------|----|----|----|---------|---------|---|--------|-----------|---------|---|--|-------|-------|---|-------|-------|---------|----|--|----------------------------------|--|---|
| 6(c)      | Sd between warning and action limits.<br>Take another sample immediately if still above warning limit take action.   | E1✓<br>E1                    | 2         | E1✓ sd <b>between</b> warning and action<br>E1 take another sample immediately   |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| (d)(i)    | $z_1 = \frac{392-396}{2.3} = -1.739$<br>$z_2 = \frac{408-396}{2.3} = 5.217$<br>proportion outside tolerance<br>$1 - 0.959 = 0.041$   | M1                           |           | M1 method — allow upper limit not considered   |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| (ii)      | Tolerance width $16 = \frac{16}{2.3} \approx 7sd$<br>Possible to meet tolerances consistently provided mean on target.   | A1<br>E1<br>E1               | 2<br>2    | A1 0.041 (0.04~0.042)<br>E1 possible to meet tolerances as width $> 6\sigma$ ; needs some calculation<br>E1 provided mean is on target   |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
|           | <b>Total</b>   |                              | <b>15</b> |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| 7(a)      | <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>P</th> <th>Q</th> <th>R</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>J</td> <td>23</td> <td>33</td> <td>42</td> <td>98</td> </tr> <tr> <td>Gi</td> <td>46</td> <td>37</td> <td>79</td> <td>162</td> </tr> <tr> <td>Gw</td> <td>56</td> <td>44</td> <td>80</td> <td>180</td> </tr> <tr> <td>N</td> <td>54</td> <td>60</td> <td>75</td> <td>189</td> </tr> <tr> <td>Total</td> <td>179</td> <td>174</td> <td>276</td> <td>629</td> </tr> </tbody> </table><br>Total SS = $36721 - \frac{629^2}{12} = 3750.92$<br>Between designs SS<br>$= \frac{179^2}{4} + \frac{174^2}{4} + \frac{276^2}{4} - \frac{629^2}{12} = 1653.17$<br>Between examiners SS<br>$= \frac{98^2}{3} + \frac{162^2}{3} + \frac{180^2}{3} + \frac{189^2}{3} - \frac{629^2}{12} = 1686.25$<br><table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Source</th> <th>SS</th> <th>df</th> <th>MS</th> </tr> </thead> <tbody> <tr> <td>Designs</td> <td>1653.17</td> <td>2</td> <td>826.58</td> </tr> <tr> <td>Examiners</td> <td>1686.25</td> <td>3</td> <td></td> </tr> <tr> <td>Error</td> <td>411.5</td> <td>6</td> <td>68.58</td> </tr> <tr> <td>Total</td> <td>3750.92</td> <td>11</td> <td></td> </tr> </tbody> </table><br>H <sub>0</sub> : No difference between designs<br>H <sub>1</sub> : Difference between designs<br>$F = \frac{826.58}{68.58} = 12.1$<br>Critical value $F_{2,6}$ is 5.143<br>Reject H <sub>0</sub> — significant evidence of difference between designs |                              | P         | Q  | R | Total | J | 23 | 33 | 42 | 98 | Gi | 46 | 37 | 79 | 162 | Gw | 56 | 44 | 80 | 180 | N | 54 | 60 | 75 | 189 | Total | 179 | 174 | 276 | 629 | Source | SS | df | MS | Designs | 1653.17 | 2 | 826.58 | Examiners | 1686.25 | 3 |  | Error | 411.5 | 6 | 68.58 | Total | 3750.92 | 11 |  | M1<br>M1<br>M1<br>M1<br>B1<br>M1 |  | M1 method for total SS<br>M1 method for between designs or examiners SS (generous)<br>M1 method for between designs and examiners SS<br>M1 method for error SS — their figures<br>B1 df error<br>M1 method for MS — designs and error — their SS and df |
|           | P  | Q                            | R         | Total  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| J         | 23   | 33                           | 42        | 98   |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Gi        | 46   | 37                           | 79        | 162  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Gw        | 56   | 44                           | 80        | 180  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| N         | 54   | 60                           | 75        | 189  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Total     | 179  | 174                          | 276       | 629  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Source    | SS   | df                           | MS        |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Designs   | 1653.17  | 2                            | 826.58    |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Examiners | 1686.25  | 3                            |           |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Error     | 411.5  | 6                            | 68.58     |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
| Total     | 3750.92  | 11                           |           |  |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |
|           | H <sub>0</sub> : No difference between designs<br>H <sub>1</sub> : Difference between designs<br>$F = \frac{826.58}{68.58} = 12.1$<br>Critical value $F_{2,6}$ is 5.143<br>Reject H <sub>0</sub> — significant evidence of difference between designs  | m1<br>A1<br>B1<br>A1✓<br>A1✓ | 11        | m1 method for $F$ — requires all previous Ms<br>A1 12.1 ( 12 ~ 12.2 )<br>B1 5.143<br>A1✓ conclusion — must be compared with upper tail of $F$<br>A1✓ in context — previous A mark required<br><b>Special case</b><br>If designs and error SS interchanged, allow M and B but not A marks |   |       |   |    |    |    |    |    |    |    |    |     |    |    |    |    |     |   |    |    |    |     |       |     |     |     |     |        |    |    |    |         |         |   |        |           |         |   |  |       |       |   |       |       |         |    |  |                                  |  |   |

**SS06 (cont)**

| <b>Q</b>    | <b>Solution</b>  | <b>Marks</b> | <b>Total</b> | <b>Comments</b>   |
|-------------|--|--------------|--------------|---|
| <b>7(b)</b> | Results show significant evidence that not all means equal.  | E1           |              | E1 significant evidence of difference or Q different from R |
|             | Hence Q (lowest mean/total) differs from R(highest mean/total).<br>However means/totals suggest P and Q similar. | E1           |              | E1 P and Q similar  |
|             | Recommend choose design R.   | E1           | 3            | E1 Choose R   |
|             | <b>Total</b>   |              | <b>14</b>    |   |
|             | <b>TOTAL</b>   |              | <b>75</b>    |   |