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# **GCSE MARKING SCHEME**

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**SUMMER 2024**

**GCSE  
MATHEMATICS – COMPONENT 1  
(FOUNDATION TIER)  
C300U10-1**

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## About this marking scheme

The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

This marking scheme reflects the criteria by which this assessment was marked in a live series and was finalised following detailed discussion at an examiners' conference. A team of qualified examiners were trained specifically in the application of this marking scheme. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners. It may not be possible, or appropriate, to capture every variation that a candidate may present in their responses within this marking scheme. However, during the training conference, examiners were guided in using their professional judgement to credit alternative valid responses as instructed by the document, and through reviewing exemplar responses.

Without the benefit of participation in the examiners' conference, teachers, learners and other users, may have different views on certain matters of detail or interpretation. Therefore, it is strongly recommended that this marking scheme is used alongside other guidance, such as published exemplar materials or Guidance for Teaching. This marking scheme is final and will not be changed, unless in the event that a clear error is identified, as it reflects the criteria used to assess candidate responses during the live series.

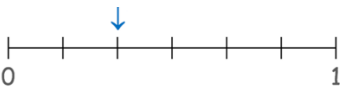
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**EDUQAS GCSE MATHEMATICS**

**SUMMER 2024 MARK SCHEME**

<b>GCSE (9-1) Mathematics Component 1: Foundation Tier</b>	<b>Mark</b>	<b>Comment</b>
1.(a) 0.2 OR $\frac{2}{10}$ oe	B1	Accept two tenth(s). Allow tenth(s) but not 0.1.
1.(b) 33 000	B1	
1.(c) 64	B1	
1.(d) 21	B1	
1.(e) 0.61	B1	
1.(f) -7.5 -7 3.2 5	B1	
1.(g) -4 is less than $x$ .	B1	Accept $x$ is greater than -4. Allow equivalent wording to less/greater than.
	(7)	
2.(a) 5	B1	Allow '5 out of 10'.
2.(b) 0	B1	Allow 'none' or '0 out of 10'.
2.(c) 1	B1	Allow '1 out of 10'. If no marks in (a),(b) and (c), award SC1 in (c) for answers of 5/10, 0/10 and 1/10 oe.
	(3)	
3.(a) 6(%)	B1	
3.(b) $20 \div 5 \times 3$ oe =12	M1 A1	May be seen in stages. Mark final answer. Award M1A0 for a final answer of $\frac{12}{20}$ .
3.(c) $50 \div 10 \times 7$ oe =35	M1 A1	May be seen in stages. Mark final answer. A0 for 35%.
	(5)	

<p>4.(a) (Money left =)  <math>180 - 40 - (2 \times 15 + 3 \times 10 + 2 \times 12 + 3 \times 7)</math>  <math>(180 - 40 - (30 + 30 + 24 + 21))</math></p> <p>OR</p> <p> <math>180 - 40 - (2 \times (15 + 12) + 3 \times (10 + 7))</math>  <math>(180 - 40 - 54 - 51)</math>  <math>(180 - 145)</math></p> <p style="text-align: right;">(£)35</p>	<p>M3</p> <p>A1</p>	<p>May be seen in stages.</p> <p>Award M2 and a possible A1 for a calculation that would be awarded M3 except for:</p> <ul style="list-style-type: none"> <li>an error in, or omission of, one of the calculations <math>2 \times 15</math>, <math>3 \times 10</math>, <math>2 \times 12</math>, <math>3 \times 7</math></li> <li>OR the omission of the 40</li> </ul> <p>M2 (A0) for one of the following</p> <ul style="list-style-type: none"> <li><math>(40 +) 2 \times 15 + 3 \times 10 + 2 \times 12 + 3 \times 7</math></li> <li><math>(40 +) + 30 + 30 + 24 + 21 (= 40 + 105)</math></li> <li><math>(40 +) 2 \times (15 + 12) + 3 \times (10 + 7)</math></li> <li><math>(40 +) + 54 + 51 (= 40 + 105)</math></li> <li>Appropriate sight of 105 or 145</li> </ul> <p>M1 for any one of the following (which may be embedded in a further (possibly incorrect) calculation):</p> <ul style="list-style-type: none"> <li>(Tickets) <math>2 \times 15 + 3 \times 10 (= 30 + 30 = £60)</math></li> <li>(Lunch) <math>2 \times 12 + 3 \times 7 (= 24 + 21 = £45)</math></li> <li>(Adults) <math>2 \times (15 + 12) (= 2 \times 27 = £54)</math></li> <li>(Children) <math>3 \times (10 + 7) (= 3 \times 17 = £51)</math></li> <li><math>180 -</math> one of 30, 24 or 21</li> </ul> <p>FT only from M2 as identified above</p>
<p>4.(b)  <math>650\,000 \div 10</math> oe  <math>= 65\,000</math></p>	<p>M1</p> <p>A1</p>	<p>Mark final answer. A0 for 65 000%.</p>
<p>5.(a)  <math>4 + y</math></p>	<p>B1</p>	
<p>5.(b)  <math>24</math></p>	<p>B1</p>	
<p>6.(a) Point correctly plotted at (5, -2)</p>	<p>B1</p>	<p>Award unlabelled if unambiguous. B0 if labelled incorrectly.</p>
<p>6.(b) Point correctly plotted.  <math>(1, -2)</math> <math>(5, 4)</math>  <math>(0, -1)</math> <math>(6, 3)</math> <math>(0, 3)</math> or <math>(6, -1)</math></p>	<p>B1</p>	<p>Strict FT for 'their B' provided not in first quadrant. Award unlabelled if unambiguous. Allow incorrect labelling provided the points form a right-angled triangle.</p>
<p>6.(c)  <math>(3, 1)</math></p>	<p>B2</p>	<p>Strict FT for 'their B' provided not in first quadrant. B1 for either of the following:</p> <ul style="list-style-type: none"> <li>one correct coordinate,</li> <li>a clear indication of the correct position of the midpoint of AB.</li> </ul> <p>If no marks, award SC1 for either:</p> <ul style="list-style-type: none"> <li>reversed coordinates - <math>(1, 3)</math> or on FT</li> <li>the correct coordinates of their midpoint for 'their B' in the first quadrant, provided 'their B' is not <math>(1, p)</math> or <math>(q, 4)</math>.</li> </ul>
	<p>(4)</p>	

7.(a) B	B1	
7.(b)(i) 	B1	Allow any unambiguous indication.
7.(b)(ii) $\frac{1}{6}$	B1	B0 for '1 out of 6' oe.
7.(c) 2 : 3	B1	
	(4)	
8.(a) 12 <sub>w</sub> y OR 12 <sub>y</sub> w	B1	
8.(b) Any two terms with a difference of 5f e.g. 6f and (1)f	B1	Allow 5f and 0(f) OR 0(f) and -5f B0 if either space is blank.
8.(c)(i) (x =) 8	B1	Allow B1 for embedded answers provided not contradicted. e.g. B1 for 6 × 8 = 48. B0 for 6 × 8 = 48 x = 48.
8.(c)(ii) (a =) 160	B1	Allow B1 for embedded answers provided not contradicted.
8.(d) (150 - 20) ÷ 15	M2	May be seen in stages. M2 may be implied by one of the following: <ul style="list-style-type: none"> <li>• 130 ÷ 15</li> <li>• 20 + 15 × 8 = 140</li> <li>• 20 + 15 × 8 AND 20 + 15 × 9</li> <li>• 150 - 20 = 130 with 8 × 15 = 120</li> </ul> M1 for one of the following: <ul style="list-style-type: none"> <li>• 20 + 15 × n where n &gt; 1 (see M0)</li> <li>• 20 + 15 + 15 + ...</li> <li>• 150 - 20 - 15 - 15 - .... (with at least two 15's seen)</li> <li>• 150 - 20 ÷ 15 (= 148.666...)</li> </ul> M0 for either: <ul style="list-style-type: none"> <li>• 20 + 15 × n = 35n e.g. multiples of 35 is M0.</li> <li>• 150 - 35</li> <li>• 150 - 20 - 15</li> </ul>
8 (days)	A1	CAO  An answer of 8-6(6...) or 8 r 10 implies M2 A0. Award M0 A0 for an unsupported answer of 9.
	(7)	

9.(a) Answer in the range 11.0 to 11.2 (acres)	B1	
9.(b) A clear method shown e.g. $2 \times 13 \text{ acres} = 2 \times 5.25 \text{ hectares}$ $14 \text{ acres} + 12 \text{ acres} = 5.65 + 4.85 \text{ hectares}$ Answer in the range 10.4 to 10.6 (hectares)	M1  A1	Allow $\pm 0.05$ in their readings for the M1 if the method is clear.
	(3)	
10. No indicated or unambiguously implied, with convincing reason e.g. <ul style="list-style-type: none"> <li>she can buy 25 not 24.</li> <li>25 is not double 12.</li> </ul>	B2	B1 for any one of the following: <ul style="list-style-type: none"> <li>12 (candles) cost £36</li> <li>she can buy 12 candles (for £38).</li> <li>24 (candles) cost £36</li> <li>25 (candles) cost £37.50</li> <li>she can buy 25 candles (for £38).</li> </ul>
	(2)	
11.(a) 73 (minutes)	B2	ISW if 73 minutes seen and spoilt (e.g. converting to hours and minutes). B1 for one of the following: <ul style="list-style-type: none"> <li>1 hour 13 minutes</li> <li>1.13</li> <li>1:13</li> <li>working to calculate the difference between 19:48 and 21:01 in minutes e.g. <math>12 + 60 + 1</math> OR <math>60 + 13</math></li> </ul> B0 for 113 (minutes) or 1 hour 53 minutes from $21.01 - 19.48 = 1.53$ .
11.(b) 4 (minutes)	B3	B2 for correct arrival time at the event (19:49 or 7:49)  B1 for selecting the correct train (18:43 or 6:43). Allow if unambiguously seen in table. May be implied by an answer of '8 minutes early' or appropriate sight of 19:37 or 7:37.  If no marks, award SC1 for a final answer of 37 minutes (from the use of 19:18 train).
	(5)	
12.(a) 1 : 4 : 2	B2	B1 for sight of 4 : 16 : 8 or 2 : 8 : 4 oe



15.(a) $a(3 + 7b)$	B1	
15.(b) $y + 4 = 5w$ OR $-5w = -4 - y$ OR $\frac{y}{5} = \frac{5w - 4}{5}$	B1	May be implied by a correct answer with no incorrect working seen.
$\frac{y + 4}{5} = w$ OR $w = \frac{-4 - y}{-5}$ OR $w = \frac{y + 4}{5}$	B1	FT only from $5w = \pm y \pm 4$ , stated or implied. Mark final answer.  If no marks, allow B1B0 for any one of the following final answers: <ul style="list-style-type: none"> <li><math>w = (y + 4) \div 5</math> (calculation not an expression)</li> <li><math>w = y + 4 \div 5</math></li> <li><math>\frac{y + 4}{5}</math> ('w =' missing)</li> </ul>
	(3)	
16.  $\widehat{ACB} = 60^\circ$ or $\widehat{ABC} = 60^\circ$ or $\widehat{BAC} = 60^\circ$ AND $\widehat{ACD} = 120^\circ$ AND $\widehat{ADC} = 30^\circ$  A correctly labelled and explained solution  $\widehat{ACB} = 60^\circ$ equilateral triangle  $\widehat{ACD} = 120^\circ$ angles on a straight line $\widehat{ADC} = 30^\circ$ angles in an isosceles triangle (so $x = 150^\circ$ )  OR starting with the $150^\circ$  $\widehat{ADC} = 30^\circ$ angles on a straight line $\widehat{ACD} = 120^\circ$ angles in an isosceles triangle $\widehat{ACB} = 60^\circ$ so ABC is an equilateral triangle  OR working from both side  $\widehat{ACB} = 60^\circ$ as an equilateral triangle $\widehat{ADC} = 30^\circ$ angles on a straight line $\widehat{ACD} = 120^\circ$ angles in an isosceles triangle AND $120 + 60 = 180$ angles on a straight line	B2  E2	Angles may be seen on diagram. B1 for any two of the three angles $30^\circ$ , $120^\circ$ and $60^\circ$  E2 and E1 dependent on B2 being awarded.  Accept $\widehat{ACB} = 60^\circ$ as all angles (in ABC) are equal/ $60^\circ$  Accept $\widehat{ADC} = 30^\circ$ as two angles (in ACD) are equal'  E1 for either: <ul style="list-style-type: none"> <li>full explanations but incorrect labelling e.g. <math>C = 120^\circ</math> or <math>BDC = 120^\circ</math></li> <li>correct labelling but one explanation missing or incorrect</li> </ul>
	(4)	
17.(a) 40	B1	

<p>17.(b)(i)</p> $\frac{1 \times 5}{4 \times 5} + \frac{3 \times 4}{5 \times 4}$ $= \frac{17}{20} \quad \text{OR} \quad 0.85$	<p>M1</p> <p>A1</p>	<p>Or equivalent full method.</p> <p>CAO. Mark final answer.</p>
<p>17.(b)(ii)</p> $\frac{5 \times 3}{6 \times 10} (= \frac{15}{60})$ $= \frac{1}{4} \quad \text{OR} \quad 0.25$	<p>M1</p> <p>A1</p>	<p>Or equivalent full method.</p> <p>CAO. Mark final answer.</p>
	(5)	
<p>18.</p> <p>Correct but unsimplified equations e.g.</p> $12 + 2x + 3 + 12 + 2x + 3 = 40$ $2(12 + 2x + 3) = 40 \text{ or}$ $12 + 2x + 3 = 20$ <p>OR (AB =) <math>(40 - 2 \times 12) \div 2</math></p> <p>Correct simplified equations e.g.</p> $4x + 30 = 40 \text{ or } 2x + 15 = 20$ <p>or <math>4x + 6 = 16</math> or <math>2x + 3 = 8</math> or better</p> <p>OR (AB =) 8 (cm)</p> <p><math>(x =) (16 - 6) \div 4</math> or <math>(x =) (8 - 3) \div 2</math></p> <p><math>(x =) 2.5</math></p>	<p>M1</p> <p>A1</p> <p>m1</p> <p>A1</p>	<p>May be seen on the diagram or implied in further calculation(s)</p> <p>e.g. <math>x = (8 - 3) \div 2</math>.</p> <p>Allow the A1 for (AB =) 8 even if spoilt by e.g. <math>x = 8</math> or <math>x = 4</math>.</p> <p>FT from M1 A0 only.</p> <p>CAO</p>
	(4)	
<p>19.</p> <p>Five numbers which satisfy all three conditions.</p> <p>2, 3, 3, 5, 7 or</p> <p>2, 2, 3, 6, 7 or</p> <p>3, 3, 3, 3, 8</p>	B3	<p>May be seen in any order.</p> <p>Five numbers must be given, otherwise B0.</p> <p>Check the conditions carefully if the numbers are not listed in ascending order.</p> <p>B1 for a range = 5.</p> <p>B1 for a total = 20.</p> <p>B1 for a median = 3.</p> <p>Penalise -1 the use of 0, negative or non-integer values.</p>
	(3)	
<p>20.</p> <p><math>2 \times 2 \times 18</math> or <math>2 \times 3 \times 12</math> or <math>2 \times 4 \times 9</math> or</p> <p><math>2 \times 6 \times 6</math> or <math>3 \times 3 \times 8</math> or <math>3 \times 4 \times 6</math></p>	B2	<p>May be seen in any order.</p> <p>Accept any clear representation of correct dimensions.</p> <p>B1 for (volume of cubes = <math>64 + 8 =</math>) 72</p>
	(2)	
<p>21.(a)</p> <p><math>\frac{2 \times 100}{40}</math> or <math>\frac{2 \times 99}{40}</math> or <math>\frac{2.1 \times 100}{40}</math></p> <p>5 or 4.95 or 5.25</p>	<p>M1</p> <p>A1</p>	<p>May be seen in stages.</p> <p>Award M1 only for <math>\frac{2.13 \times 100}{40}</math></p> <p>Must follow their calculation.</p> <p>Award M0 A0 for an unsupported 5.</p>

21.(b)(i) 2652	B1	
21.(b)(ii) 0.78	B1	
	(4)	
22.*(a)  Method to find prime factors with two correct prime factors seen from the set {3, 3, 5, 5, 11} before the second error.  3, 3, 5, 5, 11  $3^2 \times 5^2 \times 11$	M1  A1  B1	Note: $2475 = 3 \times 825$ or $5 \times 495$ or $11 \times 225$ or $15 \times 165$ or $25 \times 99$  C.A.O. Ignore 1s. Primes may only be seen in factor tree.  FT 'their derived primes' provided at least one index form used with at least one square.  Do not FT non-primes.  Allow $(3^2)(5^2)(11)$ and $3^2.5^2.11$ Do not allow $3^2, 5^2, 11$ . Inclusion of 1 as a factor gets B0.
22.(b)  $2^3 \times 5^2 \times 7^2$	B2	B1 for sight of <ul style="list-style-type: none"> <li><math>8 \times 5^2 \times 7^2</math></li> <li><math>8 \times 25 \times 49</math></li> </ul>
	(5)	
23*(a)  An appropriately worded question  e.g. How much do you spend each month on gym membership? AND An appropriate set of response boxes  e.g. $c = \text{£}0$ , $\text{£}0 < c \leq \text{£}10$ , $\text{£}10 < c \leq \text{£}20$ , $c > \text{£}20$  less than $\text{£}10$ , $\text{£}10\text{-}\text{£}20$ , more than $\text{£}20$	B2	Question must include 'each month',  There must be a <b>minimum of 3 response boxes</b> which: <ul style="list-style-type: none"> <li>do not overlap</li> <li>cover all amounts including <math>\text{£}0</math> and no upper limit with the exception of allowing a <u>consistent <math>\text{£}1</math> gap</u> e.g. <math>\text{£}0</math> <math>\text{£}1</math> to <math>\text{£}10</math>, <math>\text{£}11</math> to <math>\text{£}20</math>, <math>\text{£}21</math> or more</li> </ul> <p><i>Note: If inequalities are used then allow e.g. <math>&lt; 5</math>, <math>5 - 10</math>, <math>11 - 15</math>, <math>&gt; 15</math> OR <math>5 &gt;</math>, <math>5 - 10</math>, <math>11 - 15</math>, <math>15 &lt;</math> OR <math>0 \leq 10</math>, <math>11 \leq 20</math>, <math>21 \leq 30</math>, <math>\geq 31</math> where the inequalities are in the correct directions and the groups are clear.</i></p> <p><i>Treat as one error incorrect use e.g. <math>0 \geq 10</math>, <math>11 \geq 20</math>, <math>21 \geq 30</math>, <math>31 \geq</math></i></p> <p>B1 for one of the following: <ul style="list-style-type: none"> <li>an appropriately worded question with no more than 'one identified error' from above response boxes.</li> <li>a question that does not include 'per month' but with no errors in the response boxes.</li> </ul> </p>



<p>26*.</p> <p>36</p> $\times \frac{6}{9} \text{ oe}$ $\times \frac{1}{2}$ <p>12 (minutes)</p>	<p>M1</p> <p>M1</p> <p>A1</p>	<p><u>A table method altering all 3 values in the same ratio at the same time is M0</u></p> <p>M marks may be seen in either order e.g. <math>\frac{\text{Printers}}{9} \quad \frac{\text{Booklets}}{n} \quad \frac{\text{Time}}{24}</math></p> <p><b>FT from M0 previously awarded</b></p> <p>Must be from use of 36 e.g. if this calculation is performed first <math>\frac{\text{Printers}}{6} \quad \frac{\text{Booklets}}{0.5n} \quad \frac{\text{Time}}{18}</math></p> <p>CAO</p>																								
<p><u>Alternative method 1</u> Printers first then booklets</p> <table border="1" data-bbox="204 761 694 952"> <thead> <tr> <th>Printers</th> <th>Booklets</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>6</td> <td><math>n</math></td> <td>36</td> </tr> <tr> <td><math>\times 1.5</math></td> <td><math>\times 1.5</math></td> <td></td> </tr> <tr> <td>9</td> <td><math>1.5n</math></td> <td>36</td> </tr> <tr> <td></td> <td><math>\div 3</math></td> <td><math>\div 3</math></td> </tr> <tr> <td>9</td> <td><math>\frac{1}{2}n</math></td> <td>12</td> </tr> </tbody> </table>	Printers	Booklets	Time	6	$n$	36	$\times 1.5$	$\times 1.5$		9	$1.5n$	36		$\div 3$	$\div 3$	9	$\frac{1}{2}n$	12	<p>M1</p> <p>M1</p> <p>A1</p>	<p><i>Note: the number of booklets may be an assumed number</i></p> <p>FT 9 and 'their 36'</p> <p>CAO</p>						
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<p><u>Alternative method 4</u> (using 1 printer)</p> <table border="1" data-bbox="204 1702 694 1960"> <thead> <tr> <th>Printers</th> <th>Booklets</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>6</td> <td><math>n</math></td> <td>36</td> </tr> <tr> <td><math>\div 6</math></td> <td></td> <td><math>\times 6</math></td> </tr> <tr> <td>1</td> <td><math>n</math></td> <td>216</td> </tr> <tr> <td></td> <td><math>\div 2</math></td> <td><math>\div 2</math></td> </tr> <tr> <td>1</td> <td><math>\frac{1}{2}n</math></td> <td>108</td> </tr> <tr> <td><math>\times 9</math></td> <td></td> <td><math>\div 9</math></td> </tr> <tr> <td>9</td> <td><math>\frac{1}{2}n</math></td> <td>12</td> </tr> </tbody> </table>	Printers	Booklets	Time	6	$n$	36	$\div 6$		$\times 6$	1	$n$	216		$\div 2$	$\div 2$	1	$\frac{1}{2}n$	108	$\times 9$		$\div 9$	9	$\frac{1}{2}n$	12	<p>M1</p> <p>M1</p> <p>A1</p>	<p><i>Note: the number of booklets may be an assumed number</i></p> <p>Two steps needed for M1</p> <p>FT <math>\frac{1}{2}n</math> and 'their 108'</p> <p>CAO</p>
Printers	Booklets	Time																								
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	(3)																									

27*. (a) (£)72	B2	B1 for $54 \div 3 \times 4$ OR $54 \div 0.75$ oe
27.(b) (i) 0.67	B1	
27.(b) (ii) 1.06 <sup>3</sup>	B1	
	(4)	
28*.  $3a + 4b = 2(. )70$ . AND $2a + 3b = 1(. )95$  Method to eliminate one variable e.g. equal coefficients with intention to subtract  OR rearranges one equation and substitutes into the other  First variable correct  Method to calculate second variable  Second variable found  (£)2.10 or 210(p)	B1  M1  A1  m1  A1  A1	Both equations given, a & b may be other letters, words are accepted.  FT provided at least one equation is correct and consistent place value, with equivalent level of difficulty.  Allow 1 error in one term, not one with equal coefficients  C.A.O. Accept in £ or p <b>apple = 30p</b> or <b>banana = 45p</b>  FT their '1 <sup>st</sup> variable' provided M1 previously awarded.  FT Accept in £ or p (provided > 0)  FT 'their a and b' provided B1 M1 m1 previously awarded and both greater than 0. If units are given they must be correct.  No marks for trial and improvement. No marks for an unsupported answer.
<i>Alternative method (for candidates who do not find the values of both variables)</i>  $3a + 4b = 2(. )70$ . AND $2a + 3b = 1(. )95$  (£)2.10 or 210(p)	B1  SC5	<i>Both equations given, a &amp; b may be other letters, words are accepted.</i>  Award SC5 for a <b>complete algebraic method</b> , with <u>no errors</u> , leading to a final answer of (£)2.10 or 210(p). Method may include adding/subtracting/scaling/substituting into equations.
	(6)	

<p>29*. (a)</p> <p><math>4.3 \times 10^{11}</math></p>	<p>B2</p>	<p>B1 for sight of the correct value not in standard form e.g. <math>0.43 \times 10^{12}</math> or 430 000 000 000</p>
<p>29.(b)</p> <p><math>7.9 \times 10^5</math></p>	<p>B2</p>	<p>Be aware of correct answer from incorrect work. Award B0. B1 for the correct value not in standard form e.g. <math>79 \times 10^4</math> or 790 000</p> <p>If no marks, award SC1 for 760000 + 30000 seen with a slip in the addition but their answer correctly converted into standard form</p>
	<p>(4)</p>	