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# **GCSE MARKING SCHEME**

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**AUTUMN 2022**

**GCSE  
MATHEMATICS  
UNIT 1 – FOUNDATION TIER  
3300U10-1**

## **INTRODUCTION**

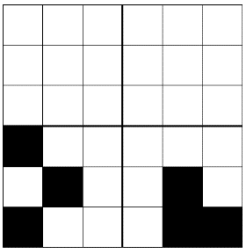
This marking scheme was used by WJEC for the 2022 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**WJEC GCSE MATHEMATICS**  
**AUTUMN 2022 MARK SCHEME**

Unit 1: Foundation Tier	Mark	Comments
1.(a) 63 029	B1	
1.(b) 2480	B1	
1.(c) 2037	B1	
1.(d) 329	B1	
1.(e) 7	B2	B1 for sight of 28 OR 14 OR sight of $56 \div 8$ OR sight of $56 \div 2 \div 4$ . Allow B2 for correct embedded answer, but only B1 if contradicted by a number $\neq 7$ on the answer line.
2.(a) 91	B1	
2.(b) 59	B1	
3. Evidence of counting squares 59 (cm <sup>2</sup> )	M1 A1	Accept 54 to 64 (cm <sup>2</sup> ) inclusive.
4. (Total cost of small boxes = $7 \times 5 =$ ) (£)35  (Total cost of large boxes = $59 - 35 =$ ) (£)24  (Cost of one large box = $24 \div 3 =$ ) (£)8	B1  B1  B1	  FT 'their stated or derived 35'  FT 'their stated or derived 24', provided $\neq 59$ Accept follow-through answers rounded or truncated to the nearest pound, or more accurate.
Organisation and Communication.          Accuracy of writing.	OC1          W1	For OC1, candidates will be expected to: <ul style="list-style-type: none"> <li>• present their response in a structured way</li> <li>• explain to the reader what they are doing at each step of their response</li> <li>• lay out their explanation and working in a way that is clear and logical</li> <li>• write a conclusion that draws together their results and explains what their answer means</li> </ul> For W1, candidates will be expected to: <ul style="list-style-type: none"> <li>• show all their working</li> <li>• make few, if any, errors in spelling, punctuation and grammar</li> <li>• use correct mathematical form in their working</li> <li>• use appropriate terminology, units, etc</li> </ul>
5.(a) 6	B1	
5.(b) 4	B1	
6.(a) -5 -2 0 4	B1	
6.(b) 3.69 3.78 3.8 3.91	B1	

7. $\frac{11}{17}$ ISW	B2	B1 for $\frac{11}{x}$ , where $x > 11$ OR $\frac{y}{17}$ , where $y < 17$ Penalise -1 for incorrect notation e.g. 11:17
8. $360(^{\circ}) - 240(^{\circ})$ (= 120°) $120(^{\circ}) \div 6$ 20(°)	M1 m1 A1	Award M1 for sight of 120(°) FT 'their 120' CAO
9. $\frac{1}{2} \times (14:40 - 13:30)$ (= 35 mins) + 16:30  17:05 or 5:05 p.m. or 5 past 5 in the afternoon	M1 M1  A1	Award M1 provided an attempt at finding a time difference <b>seen</b> . Adding 1 hr 10 mins or 2 hr 20 mins to a time difference gives M0 M1 A0.; i.e. sight of 17:40 or 18:50 gives M0M1A0. CAO
10.(a) ( $k =$ ) 9	B1	Accept embedded answer
10.(b) ( $p =$ ) 12	B1	Accept embedded answer
11. 8.4 cm 67° 52°	B1 B1 B1	Accept 8.2 cm to 8.6 cm Accept 65° to 69° Accept 50° to 54° If B1 B1 B1 awarded, penalise -1 if the triangle is incomplete or if a ruler is not used, or if the triangle is a reflection of the correct triangle.
12. (a) 33	B1	Answer line takes precedence
12. (b) 37	B1	Answer line takes precedence Award B1 for sight of 3 and 37.
13. 	B2	B1 for either correct quadrant. Ignore clearly deleted shading.
14. (a) Any valid explanation or counter example e.g. "2 is a prime" "2 is even" "2 is not odd"	E1	Do not accept 2 alone The number 2 must appear in the explanation.
14. (b) Any valid explanation or counter example e.g. "8 is a cube" "64 is even"	E1	Do not accept number alone, but allow e.g. $2^3 = 8$ A numerical example must appear in the explanation.  If a numerical example is given it must be correct or not contradicted e.g. "2 × 2 × 2 = 16 is even" would be awarded E0 "2 × 2 × 2 is even" would be awarded E1. If two examples are given, one must be correct for E1  If no marks awarded in (a) and (b), award SC1 for correct number only in <b>both</b> parts e.g. 2 in (a) <b>AND</b> 8 (or any other even cube) in (b)

<p>15.</p> <p>(Andrew = ) <b>5</b> (£10 notes) <b>and</b> <b>1</b> (£5 note)</p> <p>(Grace = ) <b>2</b> (£10 notes) <b>and</b> <b>3</b> (£5 notes)</p> <p>(Total = ) <b>7</b> (£10 notes) <b>and</b> <b>4</b> (£5 notes) ISW</p>	<p>B1</p> <p>B1</p> <p>B1</p>	<p>For the first two B marks, accept the number of notes, a list of the notes needed or value of the notes needed for B1.</p> <p>Allow appropriate sight of £50 AND £5 for Andrew for B1.</p> <p>Allow appropriate sight of £20 AND £15 for Grace for B1</p> <p>Answer line takes precedence. FT provided at least B1 previously awarded. Sight of <b>7</b> (£10 notes) <b>and</b> <b>4</b> (£5 notes) implies B1B1B1. A final answer of £70 and £20 is awarded B1B1B0.</p> <p>Note: The below response is awarded B1B0B1 (Andrew = ) <b>5</b> (£10 notes) <b>and</b> <b>1</b> (£5 note) (Grace = ) <b>3</b> (£10 notes) <b>and</b> <b>1</b> (£5 notes) (Total = ) <b>8</b> (£10 notes) <b>and</b> <b>2</b> (£5 notes)</p> <p>If no marks are awarded, award SC1 for a number of £10 notes + a number of £5 notes that give a total value of £90.</p>																																										
<p>16.(a) <math>7p = 63</math> <math>p = 9</math></p>	<p>B1</p> <p>B1</p>	<p>FT from <math>7p = k</math>. Unsupported answer of 9 is awarded B1B1. <math>p = 63/7</math> is awarded B1B0. If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction (e.g. if <math>7p = 60</math>, then <math>p = 60/7</math> is awarded B0B1, but <math>p = 60 \div 7</math> is awarded B0B0)</p> <p>Allow B1B1 for a correct embedded answer BUT only B1B0 if contradicted by <math>p \neq 9</math>. Mark final answer.</p>																																										
<p>16. (b) <math>4a - 15b</math></p>	<p>B2</p>	<p>Must be an expression for B2. Award B1 for one of the following:</p> <ul style="list-style-type: none"> <li>• sight of <math>(+)4a</math></li> <li>• sight of <math>-15b</math></li> <li>• <math>4a + -15b</math>.</li> </ul> <p>Mark final answer.</p>																																										
<p>17.</p> <table border="1" data-bbox="209 1547 657 1989"> <thead> <tr> <th colspan="3">Set Meal</th> </tr> <tr> <th>Starter</th> <th>Main Course</th> <th>Dessert</th> </tr> </thead> <tbody> <tr><td>(M)</td><td>(C)</td><td>(F)</td></tr> <tr><td>M</td><td>C</td><td>Y</td></tr> <tr><td>M</td><td>H</td><td>F</td></tr> <tr><td>M</td><td>H</td><td>Y</td></tr> <tr><td>M</td><td>P</td><td>F</td></tr> <tr><td>M</td><td>P</td><td>Y</td></tr> <tr><td>S</td><td>C</td><td>F</td></tr> <tr><td>S</td><td>C</td><td>Y</td></tr> <tr><td>S</td><td>H</td><td>F</td></tr> <tr><td>S</td><td>H</td><td>Y</td></tr> <tr><td>S</td><td>P</td><td>F</td></tr> <tr><td>S</td><td>P</td><td>Y</td></tr> </tbody> </table>	Set Meal			Starter	Main Course	Dessert	(M)	(C)	(F)	M	C	Y	M	H	F	M	H	Y	M	P	F	M	P	Y	S	C	F	S	C	Y	S	H	F	S	H	Y	S	P	F	S	P	Y	<p>B3</p>	<p>For all other 11 different combinations. Ignore repeats. B2 for 8, 9 or 10 different combinations. B1 for 6 or 7 different combinations.</p>
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<p>18. (value of 6<sup>th</sup> number =) <math>6 \times 8.5 - 5 \times 7</math>  <math>= (51 - 35)</math></p> <p style="text-align: right;">(=) 16</p>	<p>M2</p> <p>A1</p>	<p>Award M1 for sight of any one of the following</p> <ul style="list-style-type: none"> <li>• <math>5 \times 7</math></li> <li>• 35</li> <li>• <math>6 \times 8.5</math></li> <li>• 51</li> </ul> <p>CAO</p>
<p>19. (1 share =) (£)16.80 ÷ 8 or equivalent</p> <p>(1 share =) (£)2.1(0) or equivalent</p> <p>(Total =) (£)18.9(0) or equivalent</p>	<p>M1</p> <p>A1</p> <p>A1</p>	<p><i>Allow answers in pounds or pence.</i></p> <p>Award M1 A1 for sight of (£)2.1(0) : (£)16.80.</p> <p>If M1 A0, then FT 'their (£)2.1(0)' × 9 OR 'their (£)2.1(0)' + (£)16.8(0)</p> <p>If units given, then they must be correct e.g. award A1 for 1890 or 1890p but A0 for £1890</p>
<p><i>Alternative method:</i></p> <p>19. (Total =) (£)16.80 ÷ 8 × 9 or equivalent</p> <p style="text-align: center;">(Total =) (£)18.9(0)</p>	<p>M2</p> <p>A1</p>	<p><i>Award M2 for complete method</i></p>
<p>20. <math>\frac{20 \times 60}{400}</math> or <math>\frac{20 \times 59}{400}</math></p> <p style="text-align: center;">= 3 or 2.95</p>	<p>M1</p> <p>A1</p>	<p>May be seen in stages.</p> <p>CAO Unsupported answer is M0 A0</p>
<p>21 (a) 17</p>	<p>B1</p>	<p>Mark final answer.</p>
<p>21 (b) -1</p>	<p>B1</p>	<p>Mark final answer.</p>
<p>22. <math>\frac{2}{15}</math></p>	<p>B2</p>	<p>For B2, the answer must be in its simplest form. Award B1 for sight of <math>\frac{40}{300}</math> or equivalent</p>
<p>23. (Area of square =) <math>184 - [15 \times 9] =</math>  <math>49 \text{ (cm}^2\text{)}</math>          (Length of side of square =) 7 (cm)</p> <p>(Perimeter of square = <math>4 \times \sqrt{49} =</math>) 28 (cm)</p>	<p>M2</p> <p>A1</p> <p>A1</p> <p>B1</p>	<p>Award M1 for sight of <math>15 \times 9</math> or <math>135 \text{ (cm}^2\text{)}</math></p> <p>FT from M2 only, √'their 49' Maybe embedded or written on diagram</p> <p>FT 'their derived 7' May be written on diagram.</p>