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# **GCSE MARKING SCHEME**

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**SUMMER 2019**

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

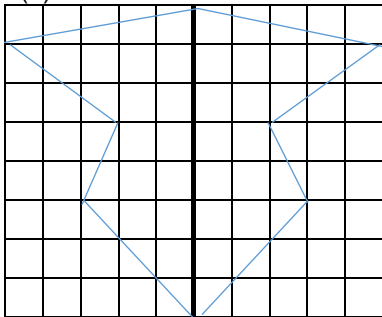
## **INTRODUCTION**

This marking scheme was used by WJEC for the 2019 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.

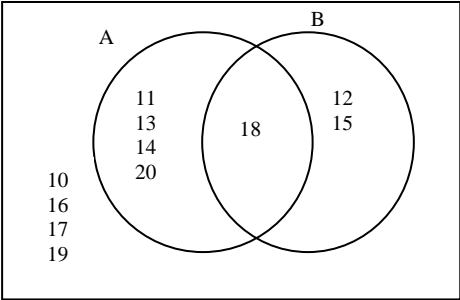
WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**WJEC GCSE MATHEMATICS**  
**SUMMER 2019 MARK SCHEME**

<b>GCSE MATHEMATICS Unit 1 Foundation Tier</b>	<b>Mark</b>	<b>Comments</b>
1(a) 4523	B1	
1(b) 168	B1	
1(c) 1, 3, 9, 27	B2	B1 for 2 correct and 0 wrong OR B1 for 3 correct and 0 or 1 wrong OR B1 for 4 correct and 1 wrong
2(a) Evidence of counting squares 32 – 42 inclusive  160 – 210 (cm <sup>2</sup> )	M1 A1  B1	FT 'their number of squares' × 5 evaluated correctly Award 3 marks for an unsupported answer between 160 and 210 inclusive. Mark final answer
Accuracy in writing	W1	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>
2(b) 	B1	
3(a) an even chance	B1	
3(b) impossible	B1	
4(a) Correctly drawn tangent	B1	
4(b) Correctly drawn radius	B1	

5(a) 481·63	B1	Do not accept 481·630
5(b) 64	B1	
5(c) 7	B1	Do not accept 7x7 or 7x7=49 alone.
5(d) (0)·03825	B1	
<b>Ribbon mark 6(a),(b),(c),(d)</b> 6(a) Football	B1	
<b>Ribbon mark 6(a),(b),(c),(d)</b> 6(b) 1/4 or equivalent ISW	B1	Do not accept incorrect notation; e.g. 1 in 4, 1 out of 4, 1:4.
<b>Ribbon mark 6(a),(b),(c),(d)</b> 6(c) $\frac{1}{4} \times 60$ 15	M1 A1	Accept 15 out of 60. Award SC1 only, for a final answer of 15/60
<b>Ribbon mark 6(a),(b),(c),(d)</b> 6(d) Correctly labelled axes.  Uniform scale starting from zero. Correct equal width bars for football, swimming and tennis.	B1  B1 B1	Vertical axis labelled 'number (of people)' or ' <i>people</i> ' or 'frequency' AND horizontal axis marked with the sports.  Correct heights for 'their scale' (30 and 15) FT their (c) if possible: 'their swimming' = 'their tennis' AND either 'their football' = 2 x 'their tennis' or 'their football' = 60 – 2 x 'their tennis'. If no scale visible, allow final B1 for bars drawn in correct proportions.
7.(Number across = $20 \div 4 =$ ) 5 OR ( Number down = $6 \div 2 =$ ) 3 (Total number of small rectangles =) $5 \times 3$ 15	B1 M1 A1	Sight of 5 or 3, not in incorrect statement or working FT 'their stated across and down' CAO
<u>7. Alternative method</u> (Area rectangle $A=2 \times 4 =$ ) 8 ( $cm^2$ ) OR (Area rectangle $B=6 \times 20 =$ ) 120 ( $cm^2$ )  (No. of rectangle $A =$ ) $120 \div 8$ 15	B1 M1 A1	Sight of 8 or 120, not in incorrect statement or working FT 'their stated areas' CAO
Organisation and Communication	OC1	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>

8(a) 5p	B1																
8(b) (i) ( $x =$ ) 8	B1	Accept embedded answer															
8(b) (ii) ( $y =$ ) 15	B1	Accept embedded answer															
8(c) 19	B1	Accept $4 \times 19 (= 76)$ or $19 \times 4 (= 76)$															
9. <table border="1" style="margin-left: 20px;"> <tr> <td><math>23 - (4 + 2) \times 3 = 5</math></td> <td>TRUE</td> <td></td> </tr> <tr> <td><math>7/10 + 2/5 = 9/15</math></td> <td></td> <td>FALSE</td> </tr> <tr> <td><math>\frac{1}{2}</math> of <math>1/8 = 1/4</math></td> <td></td> <td>FALSE</td> </tr> <tr> <td>25% of <math>0.4 = 0.1</math></td> <td>TRUE</td> <td></td> </tr> <tr> <td><math>28 - 3 \times 2 + 5 = 55</math></td> <td></td> <td>FALSE</td> </tr> </table>	$23 - (4 + 2) \times 3 = 5$	TRUE		$7/10 + 2/5 = 9/15$		FALSE	$\frac{1}{2}$ of $1/8 = 1/4$		FALSE	25% of $0.4 = 0.1$	TRUE		$28 - 3 \times 2 + 5 = 55$		FALSE	B3	For all 5 correct B2 for 4 correct. B1 for 3 correct
$23 - (4 + 2) \times 3 = 5$	TRUE																
$7/10 + 2/5 = 9/15$		FALSE															
$\frac{1}{2}$ of $1/8 = 1/4$		FALSE															
25% of $0.4 = 0.1$	TRUE																
$28 - 3 \times 2 + 5 = 55$		FALSE															
10.(a) <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2">Type</th> <th colspan="2">Yellow</th> <th colspan="2">Blue</th> </tr> <tr> <th>&lt;100</th> <th><math>\geq 100</math></th> <th>&lt;100</th> <th><math>\geq 100</math></th> </tr> </thead> <tbody> <tr> <td>Num.</td> <td>(8)</td> <td>7</td> <td>4</td> <td>6</td> </tr> </tbody> </table>	Type	Yellow		Blue		<100	$\geq 100$	<100	$\geq 100$	Num.	(8)	7	4	6	B2	For all three correct. B1 for 1 or 2 correct. If no marks awarded allow B1 for all correct tallies seen.	
Type		Yellow		Blue													
	<100	$\geq 100$	<100	$\geq 100$													
Num.	(8)	7	4	6													
10.(b) Any valid statement that indicates that the numbers (in the table) are added (to make 25) e.g. 'add the frequency'.	E1	Allow 'add them up'. Allow sight of ' $8 + 7 + 4 + 6 (= 25)$ .'															
10.(c) $\frac{8}{25}$ or equivalent ISW	B2	B1 for $x/25$ with $x < 25$ . B1 for $8/y$ with $y > 8$ . Penalise incorrect notation -1; e.g. '8 out of 25', $8:25$ , '8 in 25'.															
11.(a) -3 1	B1 B1	OR FT 'their -3' + 4.															
11.(b)(i) 21	B1																
11.(b)(ii) 191	B1																
11.(c) Divide (the previous number) by 3.	E1	Allow ' $\div 3$ '. Do not accept $n \div 3$ .															

<p>12.(a) Any correct total of <b>2</b>. e.g. <math>3 + 3 + 3 - 7</math></p>	B1	<p>B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. <math>3 \times 3</math> is not acceptable for <math>3 + 3 + 3</math>. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.</p>
<p>12.(b) Any correct total of <b>8</b>. e.g. <math>7 - 3 + 7 - 3</math></p>	B1	<p>B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. <math>2 \times 7</math> is not acceptable for <math>7 + 7</math>. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.</p>
<p>12.(c) Any correct total of <b>19</b>. e.g. <math>3 + 3 + 3 + 3 + 7</math></p>	B1	<p>B0 if any numbers other than 3 and 7 used. B0 if any operation other than + or – used. e.g. <math>4 \times 3</math> is not acceptable for <math>3 + 3 + 3 + 3</math>. Allow multi-digit numbers made from 3 or/and 7. e.g. 33, 37, 373 etc.</p>
<p>13.</p> <p>⊆</p> 	B1	<p><i>Allow intent of drawing circles and a rectangle.</i></p> <p>B1 Two <u>intersecting circles</u> AND <u>labelled A and B</u> AND within a <u>rectangle</u>. Allow missing '⊆' symbol.</p> <p>B1 For unambiguous indication that the set B consists of 12, 15 and 18 only. B0 if any of these numbers are repeated outside B.</p> <p>B2 All eleven numbers in correct position (with or without a rectangle), with no other or repeated numbers.</p> <p>B1 for six to ten numbers in correct position. Repeated numbers should not be credited. Other numbers may be ignored for this B1 mark.</p>
<p>14.(a)(i) (x =) 147</p>	B1	<p>Accept embedded answer. Mark final answer.</p>
<p>14.(a)(ii)</p> $13f - 6f = 5 - 2$ $7f = 3$ $(f =) 3/7$	B1 B1 B1	<p>F.T. until 2<sup>nd</sup> error.</p> <p>If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction.</p> <p>Mark final answer. Allow 0.43 or 0.428... as a final answer.</p>
<p>14.(b) '5n – 3 can be even or odd' ticked or implied AND a valid explanation given.</p> <p>e.g. '5×3 – 3 = 12 (even) and 5×4 – 3 = 17 (odd)' 'if n is odd you get even (but) if n is even you get odd'</p>	E1	<p>A valid explanation implies '5n – 3 can be even or odd', unless contradicted.</p> <p>Allow e.g. '15 – 3 = 12, 20 – 3 = 17'. Allow a correct sequence shown e.g. 2, 7, 12, ....</p> <p>Do <u>not</u> accept 'n can be anything', 'n can be odd or even'. Do <u>not</u> accept an explanation that only uses 5n. e.g. '5 × 2 = 10 (even), 5 × 3 = 15 (odd)'</p>

<p>15.</p> <p>(Area of the triangle CDE =) <math>14 = \frac{4 \times CE}{2}</math></p> <p>(CE =) 7 (cm)</p> <p>(Area ABCE = <math>7 \times 7 =</math>) 49 (cm<sup>2</sup>)</p> <p>(Area of whole shape = <math>49 + 14 =</math>) 63 (cm<sup>2</sup>)</p>	<p>M1</p> <p>A1</p> <p>B1</p> <p>B1</p>	<p><i>Lengths may be shown on the diagram.</i></p> <p>Accept equivalent e.g. <math>28 = 4 \times CE</math>.</p> <p>FT 'their stated or shown length CE'.</p> <p>FT 'their stated or shown area of square' + 14.</p>
<p>15. <u>Alternative method</u></p> <p>(Area of the triangle CDE =) <math>14 = \frac{4 \times CE}{2}</math></p> <p>(CE =) 7 (cm)</p> <p>(Area Trapezium ABCD =) <math>\frac{[(7 + 4) + 7] \times 7}{2}</math></p> <p>= 63 (cm<sup>2</sup>)</p>	<p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p>	<p><i>Lengths may be shown on the diagram.</i></p> <p>FT 'their stated or shown length CE (=CB)' consistently as 'their 7'.</p>
<p>16.</p> <p>(a =) <math>\frac{180 - 110}{2}</math> or equivalent.</p> <p>= 35(°)</p> <p>b (= <math>180 - 90 - 35 =</math>) 55(°)</p> <p>c (= <math>90 + 55 =</math>) 145(°)</p> <p>OR c (= <math>180 - 35 =</math>) 145(°)</p>	<p>M1</p> <p>A1</p> <p>B1</p> <p>B1</p>	<p>OR FT 90 - 'their a'.</p> <p>OR FT 90 + 'their b'.</p> <p>OR FT 180 - 'their a'</p>