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# **GCSE MARKING SCHEME**

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**AUTUMN 2019**

**GCSE  
MATHEMATICS – UNIT 2  
FOUNDATION TIER  
3300U20-1**

## **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**

**AUTUMN 2019 MARK SCHEME**

<b>GCSE MATHEMATICS Unit 2: Foundation Tier</b>			<b>Mark</b>	<b>Comments</b>
1.	52 59 168 158	72 150	B1 B1 B1 B1	
2.(a)	(44), 88, 132, 176, 220		B1	Ignore any additional multiples
2.(b)	33		B1	
3.	> < > <		B2	For all four correct. B1 for any three correct.
4.	(Perimeter of triangle = $14 + 14 + 14$ = 42 (cm) (Length of side of square =) $42 \div 4$ = 10.5 (cm)		B1 M1 A1	May be implied. F.T. 'their 42' provided $\neq 14$
<u>OCW</u>	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.	0.1(0) $\frac{2}{25}$	10% 0.08	B4	B1 for each correct response.
6.(a)	32.16		B1	Accept $32\frac{4}{25}$ and $\frac{804}{25}$ . B0 for $804 \div 25$ .
6.(b)	0.4		B1	Accept $\frac{2}{5}$ . B0 for $2 \div 5$ or $\frac{1.6}{4}$
7.(a)	trapezium		B1	
7.(b)	cuboid		B1	
7.(c)	a reflex angle		B1	
7.(d)	parallelogram		B1	
8.(a)	Point R plotted correctly		B1	
8.(b)	(-3, 2)		B1	
9.	275		B2	B1 for sight of 301.

10.(a) 1, 4 and 25	B3	<p>Answer space takes precedence. Accept 1<sup>2</sup>, 2<sup>2</sup> and 5<sup>2</sup>. B2 for writing three numbers which add to 30, two of which are square (e.g. 16, 9, 5). B1 for writing three numbers:</p> <ul style="list-style-type: none"> <li>at least two of which are square, OR</li> <li>which add to 30, one of which is square, OR</li> <li>which are all square.</li> </ul> <p>SC2 for an answer of 1, 2 and 5 with correct working. SC1 for an unsupported answer of 1, 2 and 5</p>
10.(b) 1, 5, 7, 7 OR 3, 5, 7, 7	B3	<p>Answer space takes precedence. B2 for writing four <u>odd and positive</u> numbers (not 7, 7, 7, 7) which fulfil one of the conditions:</p> <ul style="list-style-type: none"> <li>the mode of the numbers is 7</li> <li>the median of the numbers is 6</li> </ul> <p>OR for an answer which satisfies <u>both</u> conditions but includes an even number (e.g. 2, 5, 7, 7)</p> <p>B1 for writing four numbers which fulfil only one of the conditions:</p> <ul style="list-style-type: none"> <li>the mode of the numbers is 7</li> <li>the median of the numbers is 6</li> </ul> <p>OR for an answer of 7, 7, 7, 7.</p>
11.(a) $0.125 \times 1176$ or equivalent. = 147 ISW	M1 A1	
11.(b) 4.7	B2	<p>If further incorrect work shown e.g. '4.7 = 5' then allow B1 only. B1 for sight of 4.6 or 4.68(.....) or 4.70</p>
12. $f = 73(^{\circ})$ $g = 128 - 73$ = 55(^{\circ})	B1 M1 A1	F.T. 128 – 'their f'.
<u>Alternative method</u> $f = 73(^{\circ})$ $g = 180 - (180 - 128) - 73$ = 55(^{\circ})	B1 M1 A1	FT 'their f'.
13. $\begin{array}{r} (1) \quad \mathbf{5} \quad (9) \\ (7) \quad (8) \quad \mathbf{2} \\ \hline \mathbf{9} \quad (4) \quad (1) \end{array}$	B3	B1 for each. No F.T.
14.(a) $\frac{1}{12}$	B1	
14.(b) D	B1	
14.(c) $\frac{1}{3}$	B1	
15. Sight of 6.25 (hrs) OR 375 (min) (Planning =) $\frac{2}{5} \times 6.25$ OR $\frac{2}{5} \times 375$  = 2.5 (hrs) OR 150 (min)  (Remainder of work = 6.25 – 2.5 OR 375 – 150 =) 3.75 (hrs) OR 225 (min) = 3 hours 45 minutes	B1 M1  A1  B1 B1	<p>F.T. 'their time' in hours or in minutes. May be seen in parts (1/5<sup>th</sup> and then 2/5ths)</p> <p>[Note: <math>\frac{2}{5} \times 6.15</math> OR <math>\frac{2}{5} \times 615</math> is B0M1(FT) = 2.46(hrs) OR 246(min) A1(FT) BUT A0 if 2.46 then used as 2h 46m ]</p> <p>F.T. 'their derived times' using same units.</p> <p>F.T. correct conversion of 'their times', correct to the nearest minute (rounded or truncated), if of equivalent difficulty. Allow unambiguous indication of units.</p>

<p><u>Alternative method 1</u>  Sight of 6.25 (hrs) OR 375 (min)  (Remaining work takes) 3/5 of time  = <math>\frac{3}{5} \times 6.25</math> OR <math>\frac{3}{5} \times 375</math>  = 3.75 (hrs) OR 225 (min)  = 3 hours 45 minutes</p>	<p>B1  B1  M1  A1  B1</p>	<p>F.T. 'their time' in hours or in minutes.  F.T. correct conversion of 'their times', correct to the nearest minute (rounded or truncated), if of equivalent difficulty.  Allow unambiguous indication of units.</p>
<p><u>Alternative method 2</u>  (Planning =) <math>\frac{2}{5} \times 6</math> AND <math>\frac{2}{5} \times 15</math>  = 2.4(hrs) AND 6(min)  = 2hrs 30min  (Remainder of work =) 6(hr) 15(min) – 2(hrs) 30(min)  = 3 hours 45 minutes</p>	<p>M1  A1  A1  M1  A1</p>	<p>2.4 hrs may be given as 2hrs 24min.  C.A.O.  F.T. 'their derived planning time' <u>in hours and min.</u></p>
<p><u>Alternative method 3</u>  (Remaining work takes) 3/5 of time  = <math>\frac{3}{5} \times 6</math> AND <math>\frac{3}{5} \times 15</math>  = 3.6(hrs) AND 9(min)  = 3hrs 36min + 9(min)  = 3 hours 45 minutes</p>	<p>B1  M1  A1  M1  A1</p>	<p>3.6 hrs may be given as 3hrs 36min.  F.T. 'their derived times' <u>in hours and min.</u></p>
<p>16.(a) Attempt at 323 + 217 AND 122 + 58  = 3 : 1</p>	<p>B1  B2</p>	<p>Allow for an attempt at adding the correct two pairs of numbers.  B1(plus previous B1) for a ratio equivalent to 3 : 1 e.g. 540 : 180.  Allow B1B1 for a final answer of 1 : 3.  If no marks gained allow SC1 for a final answer of 89 : 55 OR 55 : 89 (Llandudno : Aberystwyth ratio.)</p>
<p>16.(b) <math>\frac{445}{720}</math> ISW <math>\left( \frac{89}{144} \right)</math></p>	<p>B2</p>	<p>0.618(...) or 0.62 or 61.8(..)% or 62% implies B2.  B1 for <math>x/720</math> if <math>x &lt; 720</math>.  B1 for <math>445/y</math> if <math>y &gt; 445</math>.  Allow B1 for 0.61 or 61%.  Penalise -1 for incorrect notation, e.g. 445 out of 720.</p>
<p>17.(a)  <math>12x + 8 = 12</math> OR <math>3x + 2 = 3</math>  <math>12x = 4</math> OR <math>3x = 1</math>  <math>x = \frac{4}{12}</math> OR <math>x = \frac{1}{3}</math></p>	<p>B1  B1  B1</p>	<p>F.T. until 2<sup>nd</sup> error.  Adding 'unlike terms' eg <math>12x + 8 = 20x</math> or <math>3x + 2 = 5x</math> to be taken as two errors.  Mark final answer. Allow 0.33(33...)  A final answer of 0.3 is (B1B1)B0.</p>
<p>17.(b) <math>3x + 10x</math>  <math>13x</math> (pence)</p>	<p>B2  B1</p>	<p>B1 for <math>3x + 5 \times 2x</math> OR for sight of <math>10x</math>  Mark final answer.</p>
<p>18. <math>a = 123(^{\circ})</math>  <math>b = 57(^{\circ})</math>  <math>c = 74(^{\circ})</math></p>	<p>B1  B1  B1</p>	<p>OR F.T. <math>180 - a</math>.</p>