# GCSE MARKING SCHEME

## AUTUMN 2024

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

## About this marking scheme

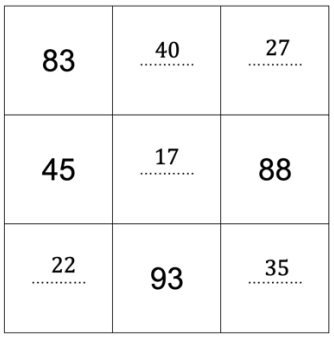
The purpose of this marking scheme is to provide teachers, learners, and other interested parties, with an understanding of the assessment criteria used to assess this specific assessment.

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.

**WJEC GCSE MATHEMATICS**

**AUTUMN 2024 MARKING SCHEME**

| **GCSE Mathematics**<br>**Unit 2: Foundation Tier** | Mark | Comments |
|---|---|---|
| 1. 972<br>843<br>85<br>64 | B1<br>B1<br>B1<br>B1 | |
| 2.(a) 400 108 | B1 | |
| 2.(b) 9435 | B1 | |
| 2.(c) 1, 2, 4, 5, 10 and 20 | B2 | Written in any order. Ignore repeats.<br>Allow 1×20, 2×10 and 4×5.<br><br>B1 for one of the following:<br>• 4 correct factors with none incorrect,<br>• 5 correct with no more than one incorrect<br>• 6 correct with one incorrect. |
| 3.(a) Any four numbers excluding a 7 | B1 | |
| 3.(b) Exactly three 7s and any other number | B1 | Accept in any order. |
| 3.(c) Exactly two numbers less than 7 and two numbers 7 or more | B1 | Accept in any order. |
| 4.<br>  <br> | B3 | B2 for either:<br>• 2 rows with a total of 150<br>• 2 columns with a total of 150.<br><br>B1 for either:<br>• 1 row with a total of 150<br>• 1 column with a total of 150. |
| 5.<br>A suitable calculation to allow comparison e.g.<br>• 5 minutes 8 seconds ÷ 2<br>• (5 × 60 + 8) ÷ 2 (= 308 ÷ 2)<br>• 2 minutes 54 seconds × 2<br>• (2 × 60 + 54) × 2 (= 174 × 2)<br><br>NO, with sight of one of the following:<br>• 2 minutes 34 seconds<br>• 5 minutes 48 seconds<br>• 154 (seconds) AND 174 (seconds)<br>• 308 (seconds) AND 348 (seconds) | M1<br><br><br><br><br><br>A1 | Allow incorrect notation for time e.g.<br>• 5.08 (min)<br>• 2.54 (min)<br>• 508 (sec)<br>• 254 (sec)<br><br>Accept equivalent statements to NO e.g. Sophie is wrong |
| *Alternative method 1*<br>*Finding the difference between the two times and comparing with 2 minutes 54 seconds*<br><br>*NO, with comparison*<br>*e.g. 2 minutes 14 seconds is less than 2 minutes 54 seconds OR 174 seconds is more than 134 seconds* | *M1*<br><br><br>*A1* | *Allow incorrect notation for time e.g.*<br>*5.08 – 2.54 (min) OR 508 – 254 (sec)*<br>*(possible use of decimal points)* |
| *Alternative method 2*<br>*Converting both times to seconds, before dividing one quantity by the other*<br><br>*NO, with sight of 1·7(70...) OR 0·56(4…)* | *M1*<br><br><br>*A1* | *Allow incorrect notation for time e.g.*<br>*508 ÷ 254 (sec)* |
| 6. 0·9(0) 90%<br><br>$\frac{3}{20}$ 0·15 | B4 | B1 for each correct response. |

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| 7. (The four numbers are)<br>27, 28, 28, 33 OR<br>27, 30, 30, 33 OR<br>27, 32, 32, 33 | B3 | B2 for any four numbers which satisfy <u>two</u> of the following conditions:<br>• Largest number (= $\frac{1}{3}$ × 99 =) 33<br>• Range = 6<br>• Mode is even<br><br>B1 for any four numbers which satisfy <u>one</u> of the conditions.<br><br>If no marks, award SC1 for<br>(Largest number = $\frac{1}{3}$ × 99 =) 33 |
| Organisation and Communication.<br><br>Accuracy of writing. | OC1<br><br>W1 | For OC1, candidates will be expected to:<br>• present their response in a structured way<br>• explain to the reader what they are doing at each step of their response<br>• lay out their explanation and working in a way that is clear and logical<br>• write a conclusion that draws together their results and explains what their answer means<br><br>For W1, candidates will be expected to:<br>• show all their working<br>• make few, if any, errors in spelling, punctuation and grammar<br>• use correct mathematical form in their working<br>• use appropriate terminology, units, etc |
| 8. 332 | B2 | B1 for one of the following:<br>• a final answer of 332AB<br>• sight of 180 (but not 180A)<br>• sight of 152 (but not 152B) |
| 9.(a) A correct explanation, e.g.<br>• 'He didn't write the numbers in (ascending/ descending) order (before identifying the middle number)'.<br>• 'The median is 11'.<br>• '20 is the largest number'. | E1 | Allow<br>• 'because it's 11'<br>• '20 is not the middle number'<br>• a demonstration of how to correctly calculate the median e.g. circling the middle number in an ordered list.<br><br>Do not accept '11' or 'the median is the middle'.<br><br>Do not ignore contradictory or incorrect comments e.g. 'put them in order first. the median is 14' |
| 9.(b)(i) Sum of numbers (339)<br><br>Sum of numbers ÷ 5<br><br>67·8 or $\frac{339}{5}$ or equivalent | M1<br><br>m1<br><br>A1 | Allow for an unsupported value between 250 and 428.<br>Award this m1 for 'their sum' ÷ 5<br><br>CAO.<br>ISW for candidates who go on to round their answer to 68.<br>Do not allow 339 ÷ 5.<br><br>If no marks, award either:<br>• SC2 for an unsupported answer of 68<br>• SC1 for<br>(59 + 89 + 77 + 31 + 83 ÷ 5 =) 272·6 or equivalent. |
| 9.(b)(ii) (67·8 - 3 =) 64·8 or $\frac{324}{5}$ | B1 | F.T. 'their mean' from (a).<br>Do not allow 324 ÷ 5. |

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| 10. A correct explanation, e.g.<br>• 'She has divided by 4, not a quarter'.<br>• 'She has worked out a quarter of 8 (not divided by a quarter)'. | E1 | Allow<br>• 'the answer should be bigger than 8'<br>• 'the answer should be 32'.<br>• 'this is how many 4s in 8, not how many 1/4s in 8'<br>• 'she needs to multiply by 4 not divide by 4'.<br><br>Do not allow 'she wasn't meant to divide (by 4)'.<br><br>Do not ignore contradictory or incorrect comments. |
| 11.(a)<br><br>($x$ = ) 180 – 62 × 2 or equivalent<br><br>56(°) | M1<br><br>A1 | Check diagram for answers.<br>Answer line takes precedence.<br>Note: 180 – 124.<br>Award M1 for complete method or intention of complete method provided not contradicted<br>e.g. brackets missing 180 – 62 + 62 = 58 M1 A0,<br>180 – 62 + 62 = 180 M0 A0.<br><br>CAO. |
| 11.(b)<br><br>($Q\hat{R}S$ = ) 102(°)<br><br>($y$ = ) 360 – (115 + 60 + 102) or equivalent.<br><br>= 83(°) | <br><br>B1<br><br>M1<br><br>A1 | Check diagram for answers.<br>Answer line takes precedence.<br><br>Note: 360 – 277.<br>Award M1 for complete method or intention of complete method provided not contradicted<br>e.g. brackets missing 360 – 115 + 60 + 102.<br><br>FT for M1 and a possible A1<br>185 – 'their 102' provided $y > 0$ and 'their 102' is:<br>• not 78 (unless $Q\hat{R}S$ = 78 is stated or on diagram)<br>• not 254. |
| 12. One example of a **pair** of relevant rectangles or squares considered with the longer side correctly doubled and the shorter side correctly halved.<br><br>Correct method of finding the perimeter of either rectangle/square.<br><br>Correct perimeters found for **both** rectangles/squares **AND** statement that Owen is incorrect (or a statement that the perimeters aren't the same). | S1<br><br>M1<br><br>A2 | Sketch shown or lengths clearly stated.<br><br>FT one of 'their rectangles/squares' if lengths/width explicitly stated or shown on diagram.<br>If only one rectangle or square is considered, award S0M1 if the correct perimeter or method of finding the perimeter is shown.<br><br>Award A1 for one of the following:<br>• one correct perimeter and a correct statement for 'their rectangles/squares'<br>• both perimeters correctly evaluated for both 'their rectangles/squares' without a statement.<br>Ignore additional comments about area.<br><br>If area is used instead of perimeter:<br>**S1** can be awarded for one example of a pair of relevant rectangles or squares considered<br><u>and</u><br>an additional **SC1** could be awarded for their two (clearly identified) correct areas **AND** statement that Owen is correct. |

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| 13.(a) 89·06 or $\frac{4453}{50}$ | B2 | B1 for sight of any of the following:<br>• 89(·0)<br>• 89·1<br>• 89·06%<br>• 8·33<br>• 80·73. |
| 13.(b) $\frac{19.44}{36}$ (× 100) or equivalent<br>54(%) | M1<br>A1 | Allow 0·54 or $\frac{27}{50}$ for M1. |
| 14.(a) $\frac{1}{7}$ | B1 | |
| 14.(b)(i) $\frac{2}{7}$ | B1 | |
| 14.(b)(ii)<br>$\frac{2}{7}$ × 91<br>26 | M1<br>A1 | May be seen in stages.<br>FT 'their (b)(i)'.<br>Allow '26 out of 91' for M1A1.<br>Award M1A0 for a final answer of $\frac{26}{91}$.<br>Allow truncated or rounded answers if following through 'their (b)(i)'.<br>Note:<br>$\frac{2}{5}$ × 91 = 36·4 or 36 or 37<br>$\frac{1}{7}$ × 91 = 13<br>$\frac{4}{7}$ × 91 = 52<br>$\frac{4}{5}$ × 91 = 72·8 or 72 or 73 |
| 15.(a) $3y = 24$ or $y = 24/3$<br>$y = 8$ | B1<br>B1 | FT from $3y = k$.<br>Mark final answer.<br>If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction or a decimal rounded or truncated to at least 1 decimal place.<br>Unsupported answer of 8 is awarded B1 B1.<br>Allow an embedded answer but penalise -1 if contradicted by $y \neq 8$. |
| 15.(b)<br>$8p - 3p = -25 - 5$ OR $5 + 25 = 3p - 8p$<br>$5p = -30$ OR $30 = -5p$<br>$p = -6$ | B1<br>B1<br>B1 | FT until 2nd error.<br>Mark final answer.<br>If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction or a decimal rounded or truncated to at least 1 decimal place.<br>Unsupported answer of –6 is awarded B1 B1 B1.<br>Allow an embedded answer but penalise -1 if contradicted by $p \neq -6$ or equivalent. |

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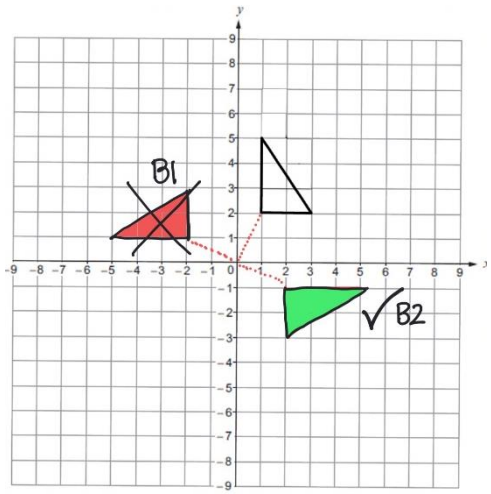
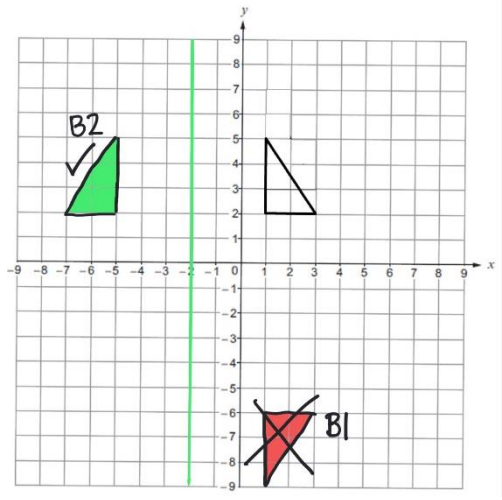
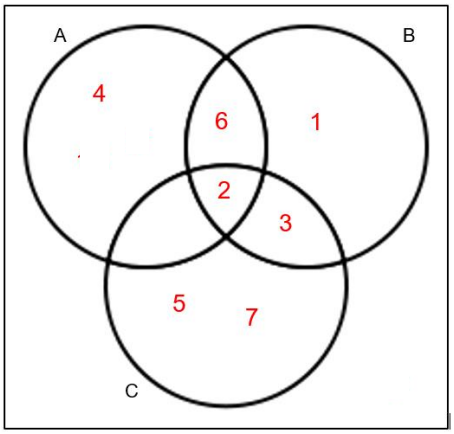
| 16. 5 (more yellow counters) | B2 | Answer line takes precedence.<br>Award B1 for sight of one of the following:<br>• $\frac{6}{8}$ but not $\frac{3}{4}$<br>• 6 yellow counters as a final answer<br>• 8 counters in total<br>• evidence of trialling e.g. sight of at least two of $\frac{2}{4}, \frac{3}{5}, \frac{4}{6}, \frac{5}{7}, \ldots$ |
| 17.(a) Correct rotation.<br>  | B2 | Allow B1 for one of the following:<br>• two correct vertices<br>• a 90° anticlockwise rotation about the origin<br>• a correct rotation with only one other incorrect rotation seen. |
| 17.(b) Correct reflection in $x = -2$<br>  | B2 | B1 for one of the following:<br>• line $x = -2$ drawn (do not award this B1 for one side of a triangle drawn on the undrawn line $x = -2$)<br>• correct reflection in line $y = -2$<br>• a correct reflection with only one other incorrect reflection seen. |
| 18.<br>  | B4 | Ignore numbers crossed out.<br>Numbers repeated in more than one subset, 0 or numbers greater than 7 should not be credited.<br>Allow repeated numbers in the same subset.<br><br>Award B4 for correct answer only (all 7 numbers in correct position with no other or repeated numbers).<br>Award B3 for one of the following:<br>• 7 numbers in correct position with other numbers<br>• 5 or 6 numbers in the correct position<br>Award B2 for 3 or 4 numbers in correct position.<br>Award B1 for 2 numbers in the correct position. |