GCSE MARKING SCHEME

SUMMER 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

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Unit 2: Foundation Tier	Mark	Comments
1. 1.78 4 5.76 121	B1 B1 B1 B1	
2.(a) 196	B1	Allow 14^2.
2.(b) 13	B1	
2.(c) $\frac{280 + 410}{2}$ (= $\frac{690}{2}$) OR $280 + \frac{410 - 280}{2}$ (= $280 + \frac{130}{2}$) OR $410 - \frac{410 - 280}{2}$ (= $410 - \frac{130}{2}$) OR writing numbers between 280 and 410 AND attempting to identify the middle number. 345 (m)	M1 A1	May be seen in stages. Numbers could be multiples of 5 or 10. Do not accept multiples of 20. If no marks, award SC1 for: • an answer of 485 or 550 • sight of 345 but not as a final answer.
2.(c) W Accuracy of writing	W1	For W1, candidates will be expected to: • show all their working • make few, if any, errors in spelling, punctuation and grammar • use correct mathematical form in their working • use appropriate terminology, units, etc.
3.(a)(i) (regular) hexagon	B1	Do not accept heptagon.
3.(a)(ii) trapezium	B1	
3.(b) cuboid	B1	
3.(c)(i) 2	B1	
3.(c)(ii) 0	B1	
4.(a) $\frac{55}{66}$ $\frac{35}{42}$	B2	B1 for either: • two correct answers circled, <u>with one</u> incorrect answer. • one correct answer circled, <u>with up to one</u> incorrect answer.
4.(b) 0·05	B1	Accept $\frac{1}{20}$. B0 for $1 \div 20$.
4.(c) 3 6 AND 5 7 OR 5 7 AND 3 6	B2	B1 for an answer of either: • 3 7 AND 5 6 • 5 6 AND 3 7
5. (Second term =) 15 (Third term =) 19	B1 B1	 FT 'their 15' + 4 correctly evaluated.
6. $14d$ d	B1 B1	 Accept $1d$.

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7.(a) A correct explanation, e.g. • 'She hasn't used BIDMAS/ BODMAS/ Order of Operations'. • 'You must multiply before you add' • 'She should have multiplied first' • 'She has added the 10 and the 4 first, then multiplied by 9'	E1	Accept '10 + 36 = 46'. Award E0 for: • an unsupported 46. • '10 + 4 x 9 = 46'. • 'she added 10 and 4 together' • a correct explanation given but later contradicted • a correct explanation given with an incorrect answer to the calculation
7.(b) A correct explanation, e.g. • 'He has divided by 2 not divided by a half'. • 'He has worked out a half of 20 (not divided 20 by a half)'. • 'He should have multiplied by 2'. • 'He should have multiplied not divided'. • 'He should have divided by a half (not by 2)'	E1	Accept '20 ÷ ½ = 40' or '20 × 2 = 40'. Award E0 for: • a correct explanation given but later contradicted • an unsupported 40 • 'he shouldn't have divided by 2' • 'there are more than 10 halves in 20' • a correct explanation given with an incorrect answer to the calculation
7.(c) A correct explanation, e.g. • 'She hasn't calculated the difference between the biggest number and the smallest number'. • 'She should have done 20 – 1'	E1	Accept '20 - 1 = 19'. Allow: • 'range = largest – smallest' • 'she didn't put the numbers in order first (before finding the difference between the end numbers)' • '11 isn't the biggest number and 7 isn't the smallest number' Award E0 for: • an unsupported 19 • 1 – 20 (unless = 19 also seen) • '11 isn't the biggest number' • '7 isn't the smallest number' • 'smallest take away the biggest' • a correct explanation given but later contradicted. • a correct explanation given with an incorrect answer to the calculation
7.(d) A correct explanation, e.g. • 'They should halve (1/5 of the number to work out 1/10 of the number)'. • 'They should divide by 2'. • 'They should multiply by 5 then divide by 10'.	E1	Accept equivalent explanations.
8. (Cards with red stickers are / Multiples of 6 are) 6, 12, 18, … (Cards with blue stickers are / Multiples of 8 are) 8, 16, 24, … (Cards with blue and red stickers are / Numbered cards are) 24 AND 48 only	B1 B1 B1	Correctly listing at least 3 multiples of 6. Ignore any additional incorrect multiples. Correctly listing at least 3 multiples of 8. Ignore any additional incorrect multiples. CAO. Accept any unambiguous indication. The final B1 implies the previous two B1 marks. If no marks awarded, award SC1 for sight of an answer of 24 OR 48.

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8. OC Organisation and Communication	OC1	For OC1, candidates will be expected to: • present their response in a structured way • explain to the reader what they are doing at each step of their response • lay out their explanation and working in a way that is clear and logical • write a conclusion that draws together their results and explains what their answer means.
9.(a) $x = 100$	B1	Mark final answer. Allow B1 for a correct embedded answer BUT B0 if contradicted by $x \neq 100$.
9.(b) $7m = 28$ $m = 4$	B1 B1	FT from $7m = k$. Unsupported answer of 4 is awarded B1B1. $m = \frac{28}{7}$ is awarded B1B0. If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction or decimal (e.g. if $7m = 34$, then $m = \frac{34}{7}$ is awarded B0B1, but m = 34÷7 is awarded B0B0). Allow B1B1 for a correct embedded answer BUT only B1B0 if contradicted by $m \neq 4$.
10. 0·55 × 42·8 or equivalent. = 23·54	M1 A1	Award M1 for complete method. CAO. If 23·54 is seen, but then **a rounded or truncated** (e.g. 23·5) value is given award M1A1. Do **not** ignore any other subsequent work (e.g. 23·54 seen but then 66·34 given as a final answer is awarded M1A0). An unsupported answer of 23·54 is awarded M1A1. If no marks, award SC1 for an answer of: • 23·5 (unsupported) • 23·54% (unsupported) • 66·34 (× 1·55) (supported or unsupported) • 19·26 (× 0·45) (supported or unsupported).
11.(a) Accurate drawing of triangle *ABC*.	B2	Award B1 for one of the following: • *AC* = 8 cm • *BC* = 6·5 cm • triangle with *AC* = 6·5 cm and *BC* = 8 cm • sight of 8 cm AND 6·5 cm.
11.(b) 111(°)	B1	**Strict FT** from their drawing.

Unit 2: Foundation Tier	Mark	Comments
12.(a) 1740 (minutes)	B2	Answer line takes precedence. Award B1 for sight of one of the following: • 24 × 60 + 5 × 60 • 24 × 'their 60' + 5 × 'their 60' • 'their 24 × 60' + 5 × 60 • 29 × 60 • 29 × 'their 60' • 'their 24 + 5' × 60 • 1440 (24 × 60) • 300 (5 × 60) • 104 400 (seconds). An unsupported answer of 1740 (minutes) is awarded B2.
12.(b) Sight of 6·3 OR 630 0·46 (m) OR 46 (cm)	B1 B2	 **If units given, they must be correct.** Mark final answer. FT 6.76 – 'their 6.3' provided 6.2 ≤ 'their 6.3' ≤ 6.4 **OR** 676 – 'their 630' provided 620 ≤ 'their 630' ≤ 640. Award B1 for one of the following: • 6·76 − 6·3 • 676 – 630. An unsupported answer of: • 0·46 or 46 is awarded B1B2 (if units given, they must be correct) • 0·46 cm or 46 m is awarded B1B1.
13.(a) Correct cuboid	B2	Ignore orientation of cuboid. For B2, their cuboid must have edges of correct length along or parallel to the 3 directions usually associated with isometric paper (the two diagonals and the vertical). Award B1 for any one edge dealt with correctly for all its three visible occurrences in a cuboid. For any mark to be awarded the line must go 'through the dots' AND have both ends 'on a dot'. Ignore attempt at handling 'hidden lines'. If no marks, award SC1 for a correct 'isometric' cuboid drawn with dimensions 6cm by 4cm by 2cm (counting dots) in any orientation.
13.(b) (Volume =) 7 × 5 × 3 = 105 cm^3	M1 A1 U1	M1 must be for a complete correct method. e.g. any further manipulation to 7 × 5 × 3 is M0. CAO Unsupported final answer of 105 is awarded M1A1U0. Independent of other marks (e.g. M0 could have been previously awarded or no volume given). Unsupported answer of 105cm^3 is awarded M1A1U1.

Unit 2: Foundation Tier	Mark	Comments
14.(a) 1 – (0·54 + 0·12 + 0·25) or equivalent = 0·09 or equivalent	 M1 A1	Answer in table takes precedence. Award M1 for complete method. Note: 1 – 0·91 Mark final answer. Unsupported answer of 0·09 or equivalent is awarded M1A1.
14.(b) 2300 (balls)	B2	Mark final answer. Award B1 for one of the following: • 575 ÷ 0·25 • 575 × 4 • 575 × 2 × 2 • 575 ÷ 25 × 100 • sight of 1242, 276, 575, 207 (separate colours) • sight of 1242, 276, 575, 2300 × 'their 0·09' evaluated correctly (separate colours) • 575 × 3 + 575 (the number of non-blues + the number of blues) • other complete valid method • unsupported 2300 as a denominator in a fraction <1. An unsupported answer of 2300 (balls) is awarded B2.
15. $51{\cdot}3 = 2{\cdot}3 + 9{\cdot}8\ (\times)\ t$ or equivalent $49 = 9{\cdot}8\ (\times)\ t$ or equivalent $t = 5$	M1 A1 A1	 Implies M1. FT only from $k = 9{\cdot}8\ (\times)\ t$. Mark final answer. Unsupported answer of 5 is awarded M1A1A1. $t = \frac{49}{9.8}$ is awarded M1A1A0. If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction or decimal. Allow M1A1A1 for a correct embedded answer BUT only M1A1A0 if contradicted by $t \neq 5$. If no marks, award either: • SC2 for an answer of 5·469… or 5·47 (from $t = 53{\cdot}6 \div 9{\cdot}8$) **OR** • SC1 for $53{\cdot}6 = 9{\cdot}8\ (\times)\ t$.

Unit 2: Foundation Tier	Mark	Comments
16. (Time difference =) 16 (hours) or 960 (minutes) (One third of 16 hours =) $\frac{1}{3}$ × 16 (hours) or $\frac{1}{3}$ × 960 (minutes) or equivalent 5 (hours) 20 (minutes)	B1 M1 A1	 FT 'their time difference' only if not a multiple of 3 hours. Answer must be in hours and minutes for A1. Accept rounded or truncated answers. Award B1 M1 A0 for a final answer of one of the following: • 5⅓ (hours) • 5·33(…hours) • 5·20 • 5:20 • 320 (minutes). An unsupported answer of 5 (hours) 20 (minutes) is awarded B1M1A1.
17. (Area =) π × $8{\cdot}7^2$ = 238 (cm^2)	M1 A2	 Award A1 for sight of one of the following: • 237(·…) • $75\ ^{69}/_{100}\ \pi$ • $^{7569}/_{100}\ \pi$
18. (Distribution = 360 – 60 – 138 =) 162(°) $\frac{162}{360}$ or $\frac{9}{20}$ or equivalent = 0·45	B1 M1 A1	May be seen on diagram. FT $\frac{\text{'their stated 162'}}{360}$, provided obtuse. Answer must be given as a decimal. Mark final answer. FT provided 'their fraction' < 1. If 0·45 seen, but then 45% or $\frac{45}{100}$ or equivalent award B1M1A1. Award B1 M1 A0 for 45% or equivalent (not a decimal) if 0·45 not seen. If no marks, award SC1 for the correctly evaluated decimal equivalent of an answer of $\frac{\text{'their stated 162'}}{60 + 138 + \text{'their stated 162'}}$ e.g. $\frac{154}{352}$ = 0·4375 (angle measured in diagram) An unsupported answer of 0·45 is awarded B1M1A1.
18. Alternative method *1 – $\frac{198}{360}$ or 1 – $\frac{11}{20}$ or equivalent* *= 0·45*	*M2* *A1*	*Award M1 for 1 – $\frac{\text{'their 138 + 60'}}{360}$.* *Answer must be given as a decimal.* *Mark final answer.* *FT provided 1 – 'their fraction < 1'.*