



GCSE MARKING SCHEME

SUMMER 2024

**GCSE
MATHEMATICS
UNIT 2 – INTERMEDIATE TIER
3300U40-1**

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

SUMMER 2024 MARK SCHEME

Unit 2: Intermediate Tier	Mark	Comments
1.(a) $x = 100$	B1	Mark final answer. Allow B1 for a correct embedded answer BUT B0 if contradicted by $x \neq 100$.
1.(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 $m = 34 \div 7$ is awarded B0B0). Allow B1B1 for a correct embedded answer BUT only B1B0 if contradicted by $m \neq 4$.
2.(a) 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: <ul style="list-style-type: none"> • 23.5 (unsupported) • 23.54% (unsupported) • 66.34 ($\times 1.55$) (supported or unsupported) • 19.26 ($\times 0.45$) (supported or unsupported).
2.(b) $\frac{3}{16}$	B1	
3.(a) Accurate drawing of triangle ABC.	B2	Award B1 for one of the following: <ul style="list-style-type: none"> • $AC = 8$ cm • $BC = 6.5$ cm • triangle with $AC = 6.5$ cm and $BC = 8$ cm • sight of 8 cm AND 6.5 cm.
3.(b)(i) 111°	B1	Strict FT from their drawing.
3.(b)(ii) 24 ± 0.4 (m)	B1	Answer line takes precedence.
4.(a) 8.6 litres	B1	

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4.(b) <p style="text-align: right;">1740 (minutes)</p>	B2	<p>Answer line takes precedence. Award B1 for sight of one of the following:</p> <ul style="list-style-type: none"> • $24 \times 60 + 5 \times 60$ • $24 \times \text{'their } 60\text{' } + 5 \times \text{'their } 60\text{'}$ • $\text{'their } 24 \times 60\text{' } + 5 \times 60$ • 29×60 • $29 \times \text{'their } 60\text{'}$ • $\text{'their } 24 + 5\text{' } \times 60$ • $1440 (24 \times 60)$ • $300 (5 \times 60)$ • $104\,400$ (seconds). <p>An unsupported answer of 1740 (minutes) is awarded B2.</p>
4.(c) <p style="text-align: center;">Sight of 6·3 OR 630</p> <p style="text-align: center;">0·46(m) OR 46(cm)</p>	B1 B2	<p>If units given, they must be correct. Mark final answer. FT 6.76 – ‘their 6.3’ provided $6.2 \leq \text{'their } 6.3\text{' } \leq 6.4$ OR 676 – ‘their 630’ provided $620 \leq \text{'their } 630\text{' } \leq 640$.</p> <p>Award B1 for one of the following:</p> <ul style="list-style-type: none"> • $6.76 - 6.3$ • $676 - 630$. <p>An unsupported answer of:</p> <ul style="list-style-type: none"> • 0.46 or 46 is awarded B1B2 (if units given, they must be correct) • 0.46 cm or 46 m is awarded B1B1.
5.(a) Correct cuboid	B2	<p>Ignore orientation of cuboid.</p> <p>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).</p> <p>Award B1 for any one edge dealt with correctly for all its three visible occurrences <u>in a cuboid</u>.</p> <p>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’.</p> <p>If no marks, award SC1 for a correct ‘isometric’ cuboid drawn with dimensions 6cm by 4cm by 2cm (counting dots) in any orientation.</p>

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5.(b) (Volume =) $7 \times 5 \times 3$ $= 105$ cm^3	M1 A1 U1	M1 must be for a complete correct method. e.g. any further manipulation to $7 \times 5 \times 3$ is M0. CAO An unsupported final answer of 105 is awarded M1A1U0. Independent of other marks (e.g. M0 could have been previously awarded or no volume given). An unsupported answer of 105cm^3 is awarded M1A1U1.
6.(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. An unsupported answer of 0.09 or equivalent is awarded M1A1.
6.(b) 2300 (balls)	B2	Mark final answer. Award B1 for one of the following: <ul style="list-style-type: none"> • $575 \div 0.25$ • 575×4 • $575 \times 2 \times 2$ • $575 \div 25 \times 100$ • sight of 1242, 276, 575, 207 (separate colours) • sight of 1242, 276, 575, $2300 \times$ 'their 0.09' evaluated correctly (separate colours) • $575 \times 3 + 575$ (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.
7. $51.3 = 2.3 + 9.8 (\times) t$ or equivalent $49 = 9.8 (\times) t$ or equivalent $t = 5$	M1 A1 A1	Implies M1. FT only from $k = 9.8 (\times) t$. Mark final answer. An 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: <ul style="list-style-type: none"> • SC2 for an answer of 5.469... or 5.47 (from $t = 53.6 \div 9.8$) OR • SC1 for $53.6 = 9.8 (\times) t$.

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13.(c) <p style="text-align: center;">-3.7 AND 1.2</p>	B2	<p>Answer line takes precedence. May be seen in any order. Allow \pm '1 small square' i.e. ± 0.1. FT intersection of 'their curve' with $y = 6$ only if exactly two points of intersection.</p> <p>Award B1 for one of the following:</p> <ul style="list-style-type: none"> • line $y = 6$ drawn (must be at least 5 small squares long) • -3.7 • 1.2 • one correct intersection of 'their curve' with $y = 6$ • two correct intersections of 'their curve' with 'their $y = 6$' only if exactly two points of intersection.

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<p>14.</p> <p>(Volume of tank =) $70 \times 40 \times 30$ $= 84000 \text{ (cm}^3\text{)}$</p> <p>(Volume of cylinder =) $\pi \times 10^2 \times 30$ $= 9424(\cdot 7 \dots \text{cm}^3)$ or $3000 \pi \text{ (cm}^3\text{)}$</p> <p>(Capacity = $84000 - 9424(\cdot 7 =)$ $74575(\cdot \dots \text{cm}^3)$</p> <p>$74\cdot 575(\dots \text{litres})$</p>	<p>M1</p> <p>A1</p> <p>M1</p> <p>A1</p> <p>B1</p> <p>B1</p>	<p>Answer line takes precedence. May be seen in stages.</p> <p>May be seen in stages.</p> <p>Accept answers between 9420 and 9426 inclusive.</p> <p>Accept answers between 74574 and 74580 inclusive. FT 'their derived volume of tank' – 'their derived volume of cylinder', provided:</p> <ul style="list-style-type: none"> • M1 previously awarded • π used when calculating the volume of the cylinder • 'their derived volume of tank' > 'their derived volume of cylinder'. <p>FT 'their volume/capacity in cm^3' $\div 1000$.</p> <p>Award B1 for a final answer of</p> <ul style="list-style-type: none"> • 74·6 (litres) • 74·5 (litres) • 74·58 (litres) • 74·57 (litres) • 75 (litres) • 74 (litres) provided from correct workings. <p>This final B1 can be awarded if the volume of the cylinder and tank are converted to litres correctly before the subtraction.</p> <p>An unsupported final answer of $74575(\cdot \dots \text{cm}^3)$ is awarded M1A1M1A1B1B0.</p> <p>Unsupported answers in the above list is awarded M1A1M1A1B1B1.</p>
<p>14. <u>Alternative method</u></p> <p>(Interior base area of container =) $70 \times 40 - \pi \times 10^2$ $= 2485(\cdot 8 \dots \text{cm}^2)$ (cm²) or $2800 - 100\pi$</p> <p>(Capacity of container =) $2485(\cdot 8 \dots) \times 30$ $74575(\cdot \dots \text{cm}^3)$</p> <p>$74\cdot 575(\dots \text{litres})$</p>	<p>M2</p> <p>A1</p> <p>M1</p> <p>A1</p> <p>B1</p>	<p>Award M1 for an appropriate 70×40 OR $\pi \times 10^2$ <u>within a subtraction</u></p> <p>CAO Accept answers between 2485·8 and 2486 inclusive.</p> <p>FT 'their derived base area', provided at least M1 previously awarded.</p> <p>Accept answers between 74574 and 74580 inclusive.</p> <p>FT 'their volume/capacity in cm^3' $\div 1000$.</p> <p>Award B1 for a final answer of</p> <ul style="list-style-type: none"> • 74·6 (litres) • 74·5 (litres) • 74·58 (litres) • 74·57 (litres) • 75 (litres) • 74 (litres) provided from correct workings.

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<p>19.(b)</p> <p style="text-align: center;">A and C</p> <p>Valid correct reason e.g.</p> <ul style="list-style-type: none"> • For each (of A and C) the length is 1.5 times the width • For each (of A and C) the length is $\frac{3}{2}$ times the width • For each (of A and C) the width is $\frac{2}{3}$ times the length • The scale factor (of enlargement from A to C) is 2.5 (or equivalent) • The scale factor (of enlargement from C to A) is 0.4 (or equivalent) • The sides are in equal ratios e.g. $\frac{15}{6} = \frac{10}{4}$ (= 2.5) OR $\frac{6}{4} = \frac{15}{10}$ (= 1.5) or equivalent inverse ratios shown to be equal • The (corresponding) lengths and widths are in the same ratio of 5 : 2 • The ratio of the length to the width is 3 : 2 (for each of the rectangles A and C) • $6 \times 2.5 = 15\text{cm}$ $4 \times 2.5 = 10\text{cm}$. 	<p>B1</p> <p>E1</p>	<p>Answer line takes precedence.</p> <p>Dependent on B1.</p> <p>Allow: Both width and height increase by a factor of 2.5</p> <p>Do not allow: They have the same scale factor The scale factor is 1.5 The scale factor is 3 : 2.</p>
<p>20.(a) (Berwyn = £) $0.6x$ or equivalent</p>	<p>B1</p>	<p>CAO. Must be in terms of x e.g. award B0 for (£)0.6.</p>
<p>20.(b) Sight of (Carys = £) $0.3x$ AND (Delyth = £) $0.7x$ or equivalent</p> <p style="text-align: center;">(£) $0.3x + 0.4x$ or equivalent</p> <p style="text-align: center;">(£) $0.7x$ or Delyth or equivalent</p>	<p>B1</p> <p>B1</p> <p>B1</p>	<p>Must be seen and in terms of x e.g. award B0 for (£)0.3 and (£)0.7.</p> <p>Final answer of (£) $0.7x$ or Delyth must be clearly identified, convincing and from correct working.</p> <p>If no marks awarded or if only the first B1 awarded, then award an additional SC1 for one of the following:</p> <ul style="list-style-type: none"> • (£) $0.3 + 0.4 = 0.7$ (or Delyth) • (£) $30 + 40 = 70$ (or Delyth) or equivalent • Carys + Aled = Delyth. <p>Carys + Aled = (£) $0.7x$ is awarded full marks provided the first B1 is awarded. If first B1 not awarded, award SC1 for sight of Carys + Aled = (£) $0.7x$.</p>