GCSE MARKING SCHEME

SUMMER 2024

GCSE
MATHEMATICS
UNIT 1 – FOUNDATION TIER
3300U10-1

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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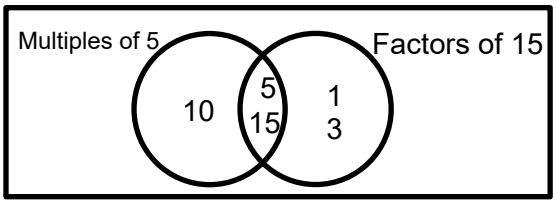
Unit 1: Foundation Tier	Mark	Comments
1.(a) 562 000	B1	
1.(b) 42 900	B1	Accept forty-two thousand (and) nine hundred
2.(a) pentagon	B1	
2.(b) radius	B1	
3. (Total number of beads =) 3 × 65 + 405 (=) 600 (beads) (Number of beads in one bag =) 600 ÷ 4 (=) 150 (beads)	M1 A1 M1 A1	Award M1 for 195 + 405 FT 'their derived 600' ÷ 4 On FT, if answer is not an integer allow an improper fraction, decimal (rounded or truncated including to a whole number) or with a remainder.
Alternative method: *(Extra beads in fourth bag= 405 – 65 =) 340 (beads)* *(Number of beads to be added to each bag=) 340 ÷ 4* *(=) 85 (beads)* *(Number of beads in one bag = 65 + 85=)150 (beads)*	*B1* *M1* *A1* *A1*	*FT 'their 405 – 65'* On FT, if answer is not an integer allow an improper fraction, decimal (rounded or truncated including to a whole number) or with a remainder *FT 65 + 'their 85' provided M1 awarded*
Organisation and Communication Accuracy in Writing	OC1 W1	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 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
4.(a) unlikely	B1	
4.(b) an even chance	B1	
5. Sight of 7(cm) or 70 (mm) AND 4(cm) or 40 (mm) (Perimeter =) 7 + 4 + 7 + 4 (cm) or equivalent 22 cm OR 220 mm	B1 M1 A1	Allow 6·8 to 7·2 (cm) and 3·8 to 4·2 (cm) OR 68 to 72 (mm) and 38 to 42 (mm). May be seen or implied in further work. B0 for opposite sides of different lengths. FT 'their lengths' and 'their widths' for M1 and possibly A1. Units need to be consistent for M1. Correct units for their measurements are required. B1 M1 A0 for answer of 22 with no working and no correct units.

Unit 1: Foundation Tier	Mark	Comments
6.(a) 103	B1	
6.(b) 2500 1250	B1 B1	FT 'their 2500' ÷ 2
7.(a) $3k$	B1	Mark final answer
7.(b)(i) (x =) 45	B1	Accept embedded solutions unless contradicted by later working. Mark final answer
7.(b)(ii) (y =) 11	B1	Accept embedded solutions unless contradicted by later working. Accept x instead of y. Mark final answer
7.(b)(iii) (w =) 9	B1	Accept embedded solutions unless contradicted by later working. Accept x instead of w. Mark final answer
8.  	B2	B2 for fully correct answer B1 for 3 or 4 correct If any number is duplicated, both entries are counted as incorrect.
9.(a)(i) 49	B1	B0 for 7×7
9.(a)(ii) 9	B1	B0 for 9×9
9.(b)(i) 19·7	B1	CAO B0 for 19·70(0…)
9.(b)(ii) 65·428	B1	CAO B0 for 65·4280(0…)
10. *ABC* = 55(°) drawn in correct position *BC* = 7·4 (cm) drawn in correct position	 B1 B1	**Overlay** Accept 53(°) to 57(°) Accept 7·2 (cm) to 7·6 (cm) Point C is sufficient; line BC need not be drawn.

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11. 5, 7, 7, 9 (in any order)	B3	Answer boxes take precedence. Four numbers must be given for B3 or B2 to be awarded B3 for 7, 7, 5, 9 B2 for mode = 7 AND total = 28 • 7, 7, a, b where a+ b = 14 and a and b can be any numbers (negative, fractions, decimals, even number or ≥10) e.g. 7, 7, 2, 12 • NOT 7, 7, 7, 7 At least 2 numbers must be given for B1 to be awarded. B1 for mode = 7 OR total = 28 Examples include: • 7,7,7,7 • 7,7,7,14 (mode = 7, total ≠ 28) • 7, 7, blank, blank (mode = 7, total ≠ 28) • 7, 3, 9, 9 (mode ≠ 7, total = 28) • 7, 9, 12, blank (mode ≠ 7, total = 28) B1 for 7,7,14, blank (mode = 7, total = 28) B0 for 7, blank, blank, blank,
12.(a) 0·2 or equivalent	B1	Mark final answer. Accept ·2 and 0·200…
12.(b) 10·44	B1	
13.(a) 0·5 kg	B1	
13.(b) 24 km	B1	
14. (The first three terms are) 4, 9 and 14 (Sum =) 27	B2 B1	May be in any order or in a sequence with other subsequent terms. Award B1 for one of the following: • any two of 4, 9 and 14 given as first three terms e.g. -1, 4, 9 • -1, 4, 9, 14… • 6, 11, 16 (from using $5n + 1$) • $4n$, $9n$, $14n$. FT their unambiguously identified first three terms, provided at least B1 previously awarded (but not from $4n$, $9n$, $14n$). Award all three marks for an unsupported answer of 27.
14. <u>Alternative Method</u> *(Sum =) 5 (1 + 2 + 3) – 3 × 1 or equivalent* *= 30 – 3* *= 27*	*M1* *M1* *A1*	*FT 'their 5 (1 + 2 + 3)' –'their 3 × 1'.*

Unit 1: Foundation Tier	Mark	Comments
15. (x = 180 –) 90 – 64 or equivalent = 26(°) (y =) 26(°) (z =) $\frac{180 - 26}{2}$ = 77(°)	 M1 A1 B1 M1 A1	Check diagram for answers but answer line takes precedence. FT y = 'their x'. FT 'their y', provided $y \neq 90°$ or 60°.
16.(a) A correct explanation given. e.g. '(equal) groups do not reach 20', '12 to 15 and 16 to 19 so no 20', ' to reach 20 the groups are not equal' 'it only goes up to 19' '20 not included'.	E1	Allow any unambiguous explanation. Do not accept: 'because there's only 20 attempts'. Award E1 if incorrect values are given in the table but correct explanation given.
16.(b) (0 to 6) 7 to **13** **14** to 20	B1	Answer in table takes precedence.
16.(c)(i) $\frac{17}{100}$ or equivalent ISW	B1	B0 for incorrect notation e.g. '17 in 100', '17 out of 100', '17:100' etc.
16.(c)(ii) A correct explanation given e.g. 'the eleven competitors might have all scored 20', 'only one of them (might have) scored 19', 'we don't know how many competitors scored 19' 'the probability of scoring 18, 19 or 20 is $\frac{11}{100}$' 'the 11 could include (the scores of) 18 and 20' 'it doesn't tell you the exact score of all 11 competitors'	E1	Allow any unambiguous explanation. E0 for mixing number of competitors and number of points scored. e.g. '11 points were scored for 18, 19, 20' '18, 19 or 20 people could have scored 11'.
17.(a) $\frac{96}{300}$ (× 100) or equivalent = 32(%)	M1 A1	M1 for sight of 0·32. Note: other complete valid methods to look out for include: • 96 ÷ 3 • 10% + 10% + 10% + 1% + 1% (= 30 + 30 + 30 + 3 + 3) • (96 out of 300 =) 32 out of 100 = 32(%).
17.(b) (£)48 ÷ 8 or (£)6 (£)6 AND (£)42 ISW	M1 A1	Sight of an appropriate 6 (or 42) implies M1. Allow in any order. Allow (£)6 : (£)42 or (£)42 : (£)6.

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18. (Probability of winning score =) $\frac{3}{20}$ or equivalent	B2	Award B2 for sight of • $\frac{1}{4} \times \frac{3}{5}$ • '3 winners out of 20' • the 3 winning combinations/scores clearly identified in a list/table of the 20 possible combinations/scores. B2 may be implied in later workings. Award B1 for one of the following: • for convincing identification of the 20 combinations/scores, for example: ✓ sight of 20 ✓ 4 × 5 ✓ showing all 20 correct combinations 10 + 1,10 + 2...with no extras ✓ all 20 correct scores listed with no extras ✓ completed sample space drawn (4 by 5) ✓ sight of $\frac{1}{4}$ AND $\frac{3}{5}$ or equivalent. • identifying the three correct possible winning scores (43, 44, 45) with no extras • identifying the three correct winning combinations (40 + 3, 40 + 4, 40 + 5) with no extras • $\frac{3}{x}$ provided $x > 3$ and correct winning combinations/scores identified • $\frac{y}{20}$ provided with $y < 20$ • $\frac{3}{20}$ from incorrect winning combinations or scores identified • strict FT from 'their list' provided clearly stated $\frac{'their\ number\ of\ winning\ scores'}{'their\ total\ number\ of\ possibles\ scores'}$
(Number of winners =) $\frac{3}{20} \times 100$ or equivalent	M1	Award M1 for $\frac{1}{4} \times \frac{3}{5} \times 100$. May be implied e.g. 100 ÷ 20 = 5, 5 × 3 = 15. FT 'their probability of winning score' × 100, provided 'their probability of winning score' < 1, or $\neq \frac{x}{100}$. M0 awarded if 'their probability of winning score' is simplified incorrectly.
= 15	A1	May be implied by '15 out of 100' or equivalent. If 15 is not seen but final answer of £15 is given (i.e. 'people' confused with 'money') then allow only M1A0. Answer must be whole number.
(Profit =) (£)100 – 15 × (£)5 OR (£)85 – 15 × (£)4	M2	FT 'their number of winners', provided ≠ 3 and <100. Award M1 for one of the following: • 15 × (£)5 • an appropriate sight of (£)75 • 'their number of winners'× (£)5 • 'their number of winners'× (£)5 evaluated correctly • (£)100 – (£)15 AND 15 × (£)4 • (£)100 – 'their number of winners' × (£)1 AND 'their number of winners' × (£)4.
= (£)25	A1	FT provided M2 (not M1M1) previously awarded. **Unsupported** answer of (£)25 is awarded B2 M1A1M2A1.

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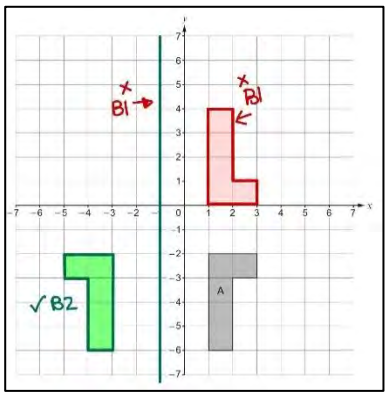
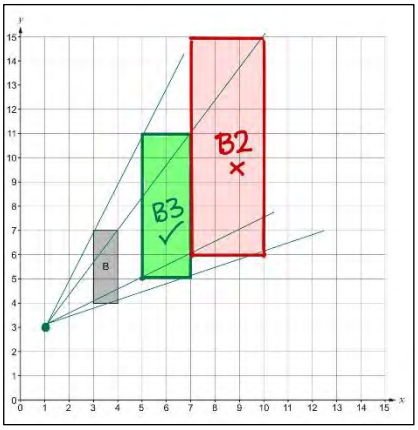
18. <u>Alternative method for the final 5 marks</u> ***<u>Must clearly be working with groups of 20 throughout</u>*** *20 × (£)1 – 3 × (£)5*	*M2*	*Method must be seen for M2.* *FT 'their 20' × (£)1 – 'their 3' × (£)5.*
(£)5	*A1*	*May be implied in later working.*
× 5	*m1*	*FT 100 ÷ 'their 20'*
=(£)25	*A1*	
19.(a) Correct reflection.  	B2	Award B1 for one of the following: • line $x = -1$ drawn • correct reflection in line $y = -1$ • a correct reflection with only one other incorrect reflection seen.
19.(b) Correct enlargement.  	B3	Award B2 for one of the following: • an enlargement of scale factor 2 with correct orientation but not from centre (1,3) • an enlargement of scale factor 3 from centre (1,3) • 4 correct vertices plotted but not joined. Award B1 for one of the following: • an enlargement of scale factor 2 with incorrect orientation • sight of appropriate 4 'rays' from point (1,3) • an enlargement of scale factor 3 with correct orientation but not from centre (1,3) • an enlargement of scale factor 2 of one of the sides, <u>with correct orientation</u>, from centre (1,3). (The side must be part of a rectangle).