GCSE MARKING SCHEME

AUTUMN 2022

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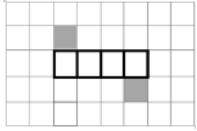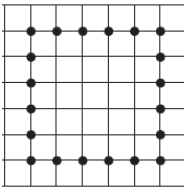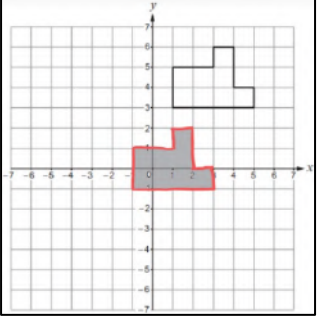3300U20-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2022 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 2022 MARK SCHEME

Unit 2: Foundation Tier	Mark	Comments
1.(a) 452 × 63 = 28 466	B1	
1.(b) 3838	B1	
1.(c) 22	B1	
2.(a) 	B1	
2.(b) 46°	B1	
2.(c) 	B1	
2.(d) Two squares shaded to form a correct net, e.g. 	B1	One square above the four given squares and one below.
3. 5 **3** × 4 7 = 2 4 **9** 1	B1	
4. Reference to the coordinates being reversed e.g. • The coordinates have been reversed Reference to the poor syntax e.g. • He has used a semi colon instead of a comma • He hasn't written his coordinates in brackets	E1 E1	Allow E1 for 5, 1 OR (5; 1). Allow E1 for (1, 5). Allow E1 E1 for "it should be (5, 1)". If no marks, award E1 E0 for reference to Steve plotting the point in the wrong place e.g. "he should have gone (1) across and then (5) up". Plotting (1,5) with '(1,5)' written alongside is E1 E0. Plotting (1,5) with no attempt at an explanation is E0 E0.
5.(a) 4a	B1	
5.(b)(i)	B1	Ignore lines joining dots up. B0 for solely drawing a 6x6 square without dots.
5.(b)(ii) 4 × 7 OR 4 x 8 – 4 OR 4 x 6 + 4 OR 64 – 36 or equivalent = 28	M1 A1	Award M1 for any correct method that would yield an answer of 28 if evaluated correctly.

5.(c) (7 × 36 + 5 × 29 = 252 + 145 =) 397	B2	Mark final answer. Award B1 for sight of one of the following: • 252 (not 252*w*) • 145 (not 145*y*) • 397*wy* or 397*w* or 397*y*
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
6.(a) Bars drawn correctly, 8 for rabbit and 1 for hamster.	B2	For B2, bars must be two squares wide. Condone inconsistent gap between bars. B1 for one of the following: • any indication of 8 rabbits and 1 hamster • any indication of 9 rabbits and 0 hamsters (if drawn on bar chart, the 9 must be unambiguous).
6.(b) $\frac{7}{22}$ ISW	B2	B1 for one of the following: • a numerator of 7 in a fraction < 1. • a denominator of 22 in a fraction < 1. Penalise incorrect notation (e.g. '7 in 22') −1.

7.
  (The number is) 16
 	
  (The factors of this number are) 1, 2, 4, 8, 16
	
	B1
	
	B1
		Answer lines take precedence.
		
		FT 'their 16' provided it's between 14 and 20 inclusive.

8.(a) 7.29 or $\frac{729}{100}$ or $7\frac{29}{100}$	B1	B0 for 729 ÷ 100.
8.(b) 3.4 or $\frac{17}{5}$ or $3\frac{2}{5}$	B1	B0 for 17 ÷ 5.
8.(c) $\frac{60}{100} \times 28$ or equivalent = 16.8 or $\frac{84}{5}$ or $16\frac{4}{5}$	M1 A1	 M1 A0 for 84 ÷ 5.
9. (Shelley's number =) 46 × 5 or equivalent = 230	M1 A1	
10. 6 yellows, 1 blue, 1 red	B2	B1 for a fully completed spinner satisfying one of the following conditions: • yellow being greater than 4, • blue and red being equal to each other.
11.(a) Correct enlargement	B2	Allow correct enlargement in any orientation. B1 for three adjacent sides correctly enlarged in the same orientation. SC1 for an enlargement by a factor of 2 or 4.
11.(b) Correct translation. 	B1	Do not award B1 for sight of a correct translation with other shapes on the grid.

12. (Angle *EBC* = 180 − 112 =) 68 (°) (Angle *BED* or Angle *AED* =) 360 − (123 + 110 + 68) or equivalent 59 (°) *x* = 121 (°)	B1 M1 A1 B1	Check diagram for answers. Award M1 for complete method to find Angle *BED* or intention of complete method provided not contradicted e.g. 360 − 123 + 110 + 68 with 123 + 110 + 68 added incorrectly but attempt to subtract from 360. FT 360 − (123 + 110 + 'their 68'), provided 'their 68': • ≠ 112 • and < 127. FT 180(°) − 'their derived 59(°)', provided < 180 Unsupported answer (may be on diagram) is awarded B1M1A1B1.
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
13.(a) Blue = 45 Yellow = 20 (Angle for Red =) $\dfrac{25}{90} \times 360$ or equivalent **OR** (Angle for Yellow =) $\dfrac{20}{90} \times 360$ or equivalent (Angle for Red =) 100(°) (Angle for Yellow =) 80(°)	 B1 B1 M1 A1 B1	Answer boxes take precedence. Number of counters must be whole numbers. FT 90 − 25 − 'their stated 45'. FT $\dfrac{\text{'their 20'}}{90} \times 360$ or equivalent. FT 360 − 180 − 'their stated 100'.
13.(b) Pie chart drawn correctly and both sectors labelled correctly Angle for Red = 100° Angle for Yellow = 80°	B2	For B2, FT their angles from (a), provided they add up to 180°. Allow tolerance of ±2° for all angles. Award B1 for one of the following: • correct angles but both not correctly labelled (1 or 2 omitted or reversed) • one correct angle (from FT) and correctly labelled.

13.(c) $\dfrac{70}{90}$ OR $\dfrac{7}{9}$ OR $\dfrac{280}{360}$ or equivalent. ISW	B2	FT 'their 45' + 25 or 'their 100°'+ 180°, where possible. Award B1 for one of the following: • a numerator of 70 or 280 in a fraction < 1 • a denominator of 90 or 360 in a fraction < 1 • sight of adding two correct fractions for red and blue. Penalise incorrect notation (e.g. '70 in 90') −1.
14. 30	B2	Answer line takes precedence. If answer line is left blank allow unambiguous indication of the answer. Award B1 for one of the following as a final answer: 6, 15, 18, 21, 22, 24, 26, 33, 34, 42, 66, 78… (satisfies 2 conditions)
15. 34·3	B2	Mark final answer. Award B1 for one of the following: • 34(·27167.....) • 34·2.
16.(a) $1 - (0·08 + 0·2 + 0·28)$ or equivalent $= 0·44$ or equivalent.	M1 A1	For the complete method. If no marks awarded, award SC1 for 55 pupils for Ysgol Bryn.
16.(b) $0·28 \times 125$ or equivalent. $= 35$ ISW	M1 A1	Unsupported 35/125 or equivalent implies M1A0.

17.(a)
 	
    Position of C 300° from B
 	
    Position of C 7cm from B
	B1
	
	B1
		Allow tolerance of ±2°.
		Allow any unambiguous indication that the correct bearing has been drawn (e.g. dot, cross).
		Allow tolerance of ±2 mm.

17.(b)
 	
    (AC =) 53 (km)
 	
      Bearing = 018°
	B1
	
	B1
		Strict FT 'their AC' × 5, with tolerance of ±1 km.
		
		Strict FT from their diagram.
		Must be a three-figure bearing.
		Allow tolerance of ±2°

18.(a) $\dfrac{21·76}{32}$ (× 100%) or equivalent $= 68$ (%)	M1 A1	Allow 0·68 to imply M1.

18.(b) $5t - 3t = 14 - 3$ OR $3 - 14 = 3t - 5t$
 	
    $2t = 11$ OR $-11 = -2t$
 	
      $t = \dfrac{11}{2}$ or equivalent
	B1
	
	B1
	
	B1
		FT until 2nd error.
		
		Mark final answer.
		Correct answer implies B1B1B1.
		Do not allow $-t = -11/2$ or $t = -11/-2$.
		A final answer of '11 ÷ 2' is B1B1B0.
		If FT leads to a whole number answer, it must be shown as a whole number. Otherwise, accept a fraction.
		Allow B1B1B1 for a correct embedded answer BUT only B1B1B0 if contradicted by $t \neq 11/2$ or equivalent.