GCSE MARKING SCHEME

AUTUMN 2020

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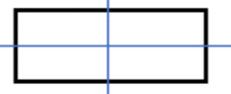**MATHEMATICS – UNIT 2 (FOUNDATION TIER)**
3300U20-1

INTRODUCTION

This marking scheme was used by WJEC for the 2020 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 2020 MARK SCHEME

	GCSE MATHEMATICS Unit 2: Foundation Tier	Mark	Comments
1.	1.98	B1	Ignore spurious units
	53	B1	
	5.88	B1	
	0.41	B1	
2.(a)	3 700 000	B1	
2.(b)	9998	B1	
2.(c)	1, 3, 5 and 15	B2	Ignore repeats. Allow 1×15 and 3×5. B1 for 2 correct factors with none incorrect, OR for 3 or 4 correct with no more than one incorrect.
3.(a)	unlikely	B1	
3.(b)	20	B1	
3.(c)	Rolling a 1 on the dice	B1	
4.(a)		B2	B1 for two correct lines with one incorrect line OR for one correct line with no incorrect lines.
4.(b)	(an) equilateral (triangle)	B1	
5.(a)	102 OR 120	B1	
5.(b)	201 OR 210	B1	
6.	Three different even numbers with a sum of 24, not including 8. Possible solutions are 2, 4 (and) 18 2, 6 (and) 16 2, 10 (and) 12 4, 6 (and) 14	B3	In any order. Allow inclusion of negative numbers. If B3 not awarded, award B2 for three numbers which sum to 24 which satisfy two of the three conditions: • The numbers are different • The numbers are even • None of the numbers is 8 If B2 not awarded, award B1 for three numbers which sum to 24.
7.(a)	0.12 or $\frac{3}{25}$ or equivalent	B1	
7.(b)	$\frac{3}{5}$ × 632 or equivalent = 379.2	M1 A1	Award M1 A0 for 1896/5 or $379\frac{1}{5}$.
7.(c)	2.5	B1	
8.	$\frac{3}{10}$ 30 $\frac{9}{(20)}$ 0.45	B1 B1 B1 B1	Accept 30/100 for 3/10

9. (Length of sides of Ivy's Cuboid B =) 3cm, 12cm, 20cm	B1	May be implied in further working.	
(Volume of Ivy's Cuboid =) 3 x 12 x 20	M1	F.T. provided two of the dimensions are correct.	
= 720 (cm³)	A1		
Alternative method			
(Volume of Gareth's cuboid = 3 x 2 x 4 =) 24 (cm³)	*B1*		
(Volume of Ivy's cuboid =) 24 x 6 x 5	*M1*	*F.T. for their stated volume for 'Gareth's cuboid'*	
= 720 (cm³)	*A1*		

9. OCW 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.
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.

10.(a)(i)	16	B1	
10.(a)(ii)	2160	B2	B1 for sight of 2155(·…..) OR 2150 OR 2156. Mark final answer.
10.(b)	0·62 × 7·8 or equivalent.	M1	
	= 4·836 ISW	A1	Unsupported 4·8…. implies M1. Accept $4^{209}/_{250}$ (ISW). Allow 1209/250 (ISW)
10.(c)(i)	247	B1	
10.(c)(ii)	2197	B1	
11.(a)	6 −5	B2	B1 for 6. B1 FT for correct evaluation of 'their 6' − 11 **only** if it leads to a <u>negative</u> answer.
11.(b)	15	B2	B1 for sight of 28·8 OR −13·8. Mark final answer.
12.	$\dfrac{400}{17·5}$ or $\dfrac{4}{0·175}$.	M2	M1 if incorrect place value (in either length). Digits 228….. implies M1.
	= 22·8(….) or 22·9	A1	C.A.O.
	(Number of rods =) 22	B1	FT if of equivalent difficulty. (i.e. 'their 22·8' must be greater than 1 AND their 1st decimal place number greater than or equal to 5.) Answer of 22 gains all 4 marks. Unsupported answer of 23 gains M2A0B0.
12. Alternative method (trial and improvement)			
Working with a multiple of 17·5 or 0·175.	*S1*	*Award this S1 only if* *n > 2 and n ≠ 4 and n ≠ 400.*	
(n × 17·5 or n × 0·175)			
22 × 17·5 (= 385) or 22 × 0·175 (= 3·85)	*B1*	*This implies previous S1.*	
23 × 17·5 (= 402·5) or 23 × 0·175 (= 4·025)	*B1*	*This implies previous S1 and previous B1 if 402·5 seen.*	
(Number of rods =) 22	*B1*	*Must be seen in answer space or unambiguously identified (not simply embedded).* *Answer of 22 gains all 4 marks.* *Unsupported answer of 23 gains S1B0B1B0.*	

13.(a)		B2	B1 for each individual shape. Ignore clearly deleted shading. .
13.(b) Reflection (in the line) x = 5		B2	B1 for stating 'Reflection'. Ignore extra wording once 'reflection' (or 'reflected') seen. B1 for stating x = 5 (simply drawing the line is B0)
14.(a) $10x + 15 = 20$ OR $2x + 3 = 4$ $10x = 5$ OR $2x = 1$ $x = \underline{5}$ OR $x = \underline{1}$ or equivalent 10 2		B1 B1 B1	FT until 2nd error. Mark final answer. Allow an embedded answer but penalise −1 if contradicted by x ≠ ½ or 0·5.
14.(b) $5(n − 3)$ or $5×(n − 3)$ or $(n − 3)5$ or $(n − 3) × 5$ or $5n − 15$		B2	B1 for sight of $n − 3 × 5$ OR sight of $5 × n − 3$. B0 for unsupported $n − 15$ OR unsupported $5n − 3$. Allow 'n = 5(n – 3)' etc Mark final answer.
15.(a) YES AND a valid explanation. e.g. ' the other two angles would be (both) 20(°)' e.g. diagram showing (isosceles) triangle with angles of 140°, 20° and 20°.		E1	A valid explanation implies YES circled if not otherwise contradicted (by circling NO). Explanations must engage with the specific triangle given (with an angle of 140°) and not isosceles triangles in general.
15.(b) a + b = 150		B1	
16. [n(G ∩ S) =] 10 [n(S) =] 13		B1 B1	Entries must be a whole numbers. [n(ℰ)] must be 30 (i.e. no additional 'non-Spanish'). Any blank space to be taken as 0.
17. (Length of AD or BC =) 10 (cm) (Area of ABCD = 5 × 10 =) 50 (cm²) (Area APB =) $\frac{π × 5^2}{4}$ = 19·6(…..)(cm²) (Shaded area = 50 − 19·6 =) 30·3(…) or 30·4(cm²)		B1 B1 M1 A1 B1	May be seen on the diagram or implied in later work. FT 5 × 'their AD (or BC)'. The 50(cm²) may be shown as two areas of 25(cm²) for B1 B1. SC1 for sight of π × 5² or equivalent (78·5….) FT 'their stated area ABCD' – 'their stated <u>area</u> APB' *Note: Sight of (25 – 'area of APB') + 25 implies the first two B marks. [rectangle divided in half]*