GCSE MARKING SCHEME

SUMMER 2019

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

INTRODUCTION

This marking scheme was used by WJEC for the 2019 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 (NEW)

SUMMER 2019 MARK SCHEME

GCSE MATHEMATICS Unit 2: Foundation Tier		Mark	Comments
1.	(£)4.67 (£)5.84 (£)7.08 (£)1.45	B1 B1 B1 B1	
2.(a)	Pentagon	B1	
2.(b)	Rhombus	B1	Allow equilateral kite, but not kite or parallelogram.
2.(c)	Cylinder	B1	Allow circular prism.
3.(a)	(47,) 94, 141	B1	Ignore additional multiples.
3.(b)	52	B1	
3.(c)	209	B1	
4.(a)	Midpoint unambiguously indicated	B1	Allow +/- 2 mm.
4.(b)	Unambiguous parallel line drawn through C	B1	Allow +/- 2°.
5.(a)	9 (and) 16	B2	Allow 3^2 (and) 4^2. B1 for a sum of two square numbers less than 30 seen in workings or two square numbers less than 30 written on the answer line.
5.(b)	Accept suitable explanations, e.g. • the sum of three even numbers will be even (and 23 is odd) • when you add any amount of even numbers the answer is always even (whilst 23 is odd). • (23 is odd, but) even + even + even = even	E1	Allow • even + even = even, • because 23 is odd.
6.	FALSE TRUE FALSE TRUE	B2	For all four correct. B1 for 3 correct.
7.(a)	60 (%)	B2	B1 for equivalent fraction or decimal (0.6, 3/5, 12/20). If B2 not awarded, F.T. their fraction (except for ½, ¼ and ¾) correctly converted to a percentage for B1.
7.(b)	Multiply by 4	E1	Accept other correct explanations e.g. divide (the number) by 5 then multiply by 20, double (the number) and double (it) again or divide by ¼.
7.(c)	Accept suitable explanations, e.g. • 0.125 (is greater than) 0.1 • 5/40 (is greater than) 4/40	E1	Award E1 for other correct explanations e.g. a larger denominator means each part of the whole is smaller, or for correct evaluation of 1/8 and 1/10 of a chosen number.
8.(a)	65 (°)	B1	Allow ±2 ^{0}
8.(b)	225°	B1	
8.(c)	(Small angle = 180 ÷ 6 =) 30(°) (Large angle = 5 × Small angle =) 150 (°)	B1 B1	Check diagram, though answer space takes precedence. F.T. 'their small angle' × 5 or 180 - 'their small angle ', provided answer is less than 180º. If no marks awarded, award B1 for both correct angles given in reverse.

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9. Length of sides in Cuboid B = 5 (cm), 3(cm), 6 (cm) Volume of Cuboid B = 5 x 3 x 6 $\qquad$ = 90 (cm³)	B1 M1 A1	Award B1 for (height =) 6 (cm), provided length and width aren't also multiplied by 3. F.T. 'their height' x 5 x 3
Alternative method $\qquad$ (Volume of Cuboid A =) 5 x 3 x 2 $\qquad$ = 30 (cm³) $\qquad$ (Volume of Cuboid B =) 90 (cm³)	M1 A1 B1	 _F.T. for their stated or derived volume for Cuboid A'_
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) Subtract six (from the previous term)	B1	Accept 'take away 6' or '(goes) down in 6s'. Allow -6. B0 for n-6
10.(a)(ii) Double (the previous term)	B1	Accept 'multiply by 2' or 'times by 2'. Allow ×2. B0 for n×2
10.(b)(i) x + 3	B1	Mark final answer.
10.(b)(ii) (£)15g	B1	Mark final answer. Accept 15 × g
11.(a) $\qquad$ 28·34 or 1417/50 or 28¹⁷/₅₀ ISW	B2	B1 for sight of 23·04 OR sight of 5·3. If B0 allow SC1 for 28 or 28·3
11.(b) $\qquad$ 34·8 or 174/5 or 34⁴/₅ ISW	B1	
12.(a) $\qquad$ (19 − 18·2 =) 0·8	B2	B1 for sight of 19 OR sight of −18·2. BUT B0 for 19f − 18·2g. Mark final answer.
12.(b) $\qquad$ 7x = 16 $\qquad$ (x =) 16/7 $\qquad$ (x=) 2·3 (to 1dp)	B1 B1 B1	 FT from 7x = k. Allow 16 ÷ 7 FT from any fraction that requires rounding. Mark final answer. (x =) 2·2…. implies B1B1B0. Allow an embedded 2·3, B1B1B0
13.(a) $\qquad$ 4 hours 45 min	B1	
13.(b) $\qquad$ 2·4 km	B1	
13.(c) <table><tr><td>7km less than 5 miles</td><td>TRUE</td><td></td></tr><tr><td>1kg less than 2lb</td><td></td><td>FALSE</td></tr><tr><td>1 litre less than 1 pint</td><td></td><td>FALSE</td></tr><tr><td>8 litres less than 900cm³</td><td></td><td>FALSE</td></tr></table>	B2	For all 4 correct. B1 for 3 correct.

14. Two relevant (sides of one double the other) rectangles or squares considered.	M1	Sketch shown or lengths stated. If M0, only the B marks are available.
Perimeter AND area of 1st rectangle correctly calculated.	B1	Ignore missing units BUT penalise −1, once only, for incorrect units. (Applies to these B1 marks.)
Perimeter AND area of 2nd rectangle correctly calculated.	B1	
Clear statement that the perimeter has been doubled but the area has not been doubled (and that Catrin is incorrect.)	A2	FT 'their stated values' for both perimeter and area. If not A2, then A1 for correct perimeter statement for 'their values'. OR A1 for correct area statement for 'their values'. Accept statement that area is 4 times as big. Allow for A2 'only the perimeter has been doubled'. (implies that the area has not been doubled.) *Also for A2.* *'The area is not doubled so Catrin is incorrect'* *answers the question.* *In this case* *Award SC1 and SC1 (instead of B1 and B1) if* *areas correctly calculated.* Correct statements, for BOTH perimeter and area, with **no** supporting work gains SC1.
15. (18% of £256 =) 0·18 × 256	M1	
= (£)46.08	A1	Allow (£)46.10
(Larger share =) $\frac{2 \times 46 \cdot 08}{3}$	M1	FT 'their stated 18%'.
= (£)30.72	A1	If M0 allow SC1 for sight of (£)15.36
(To the nearest 10p =) (£)30.7(0)	B1	FT 'their larger share' (not 'their 18%') and only if rounding required.

15. *Alternative method 1*		
(Larger share of £256 =) $\frac{2 \times 256}{3}$	*M1*	
=(£)170.66(..)	*A1*	*Allow (£)170.70* *If M0 allow SC1 for sight of (£)85.33.*
(18% of £170.66 =) 0·18 × 170.66	*M1*	*FT 'their stated larger share'.*
= (£)30.72	*A1*	
(To the nearest 10p =) (£)30.7(0)	*B1*	*FT 'their 18%' (not 'their larger share') and only if rounding required.*

15. *Alternative method 2*		
(Larger share of 18% =) $\frac{2 \times 18}{3}$	*M1*	
= 12(%)	*A1*	*If M0 allow SC1 for sight of 6(%).*
(12% of £256 =) 0·12 × 256	*M1*	*FT 'their derived larger %'.*
= (£)30.72	*A1*	
(To the nearest 10p =) (£)30.7(0)	*B1*	*FT 'their amount' only if rounding required.*

16.(a)		B1	Values may be seen on the diagram.
	a = −6	B1	
	b = −5	B1	
16.(b)	Correct shape in correct position.	B3	B2 for a correct enlargement in incorrect position. B1 for one correct side in correct position. If no marks allow SC1 for showing all the 'rays' from (1,2).
17.	P(Alison chooses letter R) = 2/10 or equivalent. P(Sarfraz chooses letter R) = ¼ or equivalent.	B1 B1	B1 for sight of 2/10 if unambiguously for Alison. B1 for sight of 1/4 if unambiguously for Sarfraz. As probability not asked for, allow e.g. '2 chances in 10' and 'one chance in four'. B1 marks may be implied in subsequent work.
	Use of 2/10 × 100 OR ¼ × 100	M1	Calculation may be done in stages.
	20 AND 25 clearly implying that Sarfraz is the most likely to choose letter R	A1	There is no requirement to tick the box as long as there is no contradiction. Do not accept, on its own, e.g. 'Sarfraz has less letters to choose from' for the A1.
17. *Alternative method*			
	P(Alison chooses letter R) = 2/10 or equivalent. *P(Sarfraz chooses letter R) = ¼ or equivalent.*	*B1* *B1*	*B1 for sight of 2/10 if unambiguously for Alison.* *B1 for sight of 1/4 if unambiguously for Sarfraz.* *As probability not asked for, allow* *e.g. '2 chances in 10' and 'one chance in four'*
	Attempting to give probabilities in a common format.	*M1*	
	Correct common format *e.g. 4/20 AND 5/20 or 0·2 AND 0·25* *clearly implying that Sarfraz is* *the most likely to choose letter R*	*A1*	*There is no requirement to tick the box as long as there is no contradiction.* *Do not accept, on its own, e.g.* *'Sarfraz has less letters to choose from' for the A1.*