wjec cbac

GCSE MARKING SCHEME

AUTUMN 2020

GCSE MATHEMATICS – UNIT 1 (FOUNDATION TIER) 3300U10-1

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 1: Foundation Tier	Mark	Comments
1. (a) Angle of 35° drawn at A	B1	Accept 33° to 37° Point alone is not sufficient.
1.(b) Circle radius 7cm (diameter 14 cm)	B1	Accept radius 6.8 (cm) to 7.2 (cm)
2.(a) 5433	B1	
2.(b) 174	B1	
2.(c) 75	B1	
2.(d) 6 × 7 ÷ 2 = 21	M1 A1	If no marks, award SC1 for sight of 42.
3.(a) 600	B1	
3.(b) 4000	B1	
4.(a) D	B1	
4.(b) S	B1	
5.(a) 9	B1	
5.(b) ÷ –	B1	
6.(a) 53	B1	
6.(b) 125	B1	
7.(a) 70 (%)	B1	
7.(b) 6 sectors shaded	B1	
8. 1/3 × 180(°) OR 2/3 × 180(°) or equivalent	M1	
60(°) OR 120(°)	A1	A1 for either 60(°) OR 120(°)
(180 – 60 =) 120 (°) OR (180 – 120 =) 60 (°)	B1	FT 'their 60' or 'their 120'. Two angles which add to 180(°) will get this B1. If no marks award SC1 for one angle twice the size of the other.
	M1 A1 B1	FT 2 × 'their x' or 180 – 'their x'
9.(a) 16g	B1	
9.(b) (y =) 9	B1	Accept embedded answers. Mark final answer.
9.(c) (w =) 30	B1	Accept embedded answers. Mark final answer.

9 (d) $4x = 10 - 7 (=3)$	B1	
x = 3 or equivalent	B1	FT from $4x = b$
		Integer answer required if h is a multiple of 4
Т		Mark final answer
		Allow an embedded answer eq $4 \times 0.75 + 7 = 10$ for
		B2 but penalise -1 if contradicted by $x \neq 0.75$
		D_2 , but penalise 1 in contradicted by $x \neq 0.75$
10 (Easters of) 16 OP 32 OP 64	D1	Accort any multiple of 16 which does not have a
10. (Factors of) 10, OK 32, OK 04,	ы	factor of 3
(Multiplac of) 1	D1	
(Multiples of) 4	ы	
	50	
11. 9, 13 and 14 OR	B2	Allow in any order.
10, 13 and 15 OR		B1 for 3 whole numbers with a median of 13 OR
11, 13 and 16 OR		B1 for 3 whole numbers with a range of 5
12, 13 and 17		Penalise -1 for any repeated numbers.
		e.g. 8, 13, 13 gains B2 -1 = B1
		13, 13, 13 gains B1 -1 = B0.
12.		
	B1	May be implied by correct method which would lead
		to an answer of 62 (cm). (This is the only diagram
		which can gain B1.)
(Perimeter =) $8 \times 7 + 2 \times 3$ (cm) or equivalent	M1	If no diagram, then B1 M1 A1 for correct calculation
(Perimeter =) 62 (cm)	Δ1	which leads to answer of 62 (cm)
	/	
		ET these large rectangles only:
		T T these large rectangles only.
		BO
		(Porimeter =) 8v3 + 2v7 (cm) or equivalent M1
		(Perimeter -) 000 + 207 (Cm) of equivalent in it
		DU DU
		$(\text{Derimeter} =)$ $4\sqrt{2}$ $(4\sqrt{2})$ (orm) or equivelent M1
		$(\text{Perimeter} =) 427 \pm 433 \text{ (CIII) of equivalent in it }$
		(Perimeter =) 40 (cm) AT
		If we discusse allow CO4 for
		If no diagram, allow SCT for $(0,2)$, $(2,3)$,
		(8x3 + 2x7 or equivalent) = 38 (cm) OR
		(4x7 + 4x3 or equivalent) = 40 (cm).
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
		- make lew, it any, chois in spelling,
		use correct mathematical form in their
		working
		use appropriate terminology, units, etc.
	L	
13.(a) 20(:)18 OR 8(:)18 p.m	B1	B0 for (0)8:18 or 8:18 a.m. or 20:18 a.m.
		Allow 20(:)18 p.m. and 08:18 p.m.

13.(b) 6 (hours) 40 (minutes)	B1	
13.(c) 265 (seconds)	B2	B1 for sight of 435 AND 170ORB1 for sight of 300 AND 35ORB1 for 4 minutes 25 seconds.
14.(a) Line x = -4 drawn	B1	Line must be at least 2 units long. B0 if 'extra' lines drawn unless correct line unambiguously identified.
14.(b)(i) Point C shown at (-2,-4)	B2	Allow B2 if point C not labelled but is unambiguously at the correct position (eg 'end of line'). Otherwise, B1 if Point C at $(-2,y) \neq 3$. (BÂC = 90°) SC1 for point C at $(5,-4)$.
14.(b)(ii) (-2,-4)	B1	FT 'their unambiguously identified position of point C'. Allow missing brackets.
15.(a) 2700	B2	B1 for sight of 27 OR sight of 100. Mark final answer.
15.(b) 0·08	B1	Mark final answer
15.(c) <u>Correctly</u> using a common denominator. <u>13</u> or equivalent. 18	M1 A1	Mark final answer.
16. <u>Answer Yes No Not sure</u> <u>Number of</u> 150 50 100	В3	B1 for (Yes =) 150 C.A.O. B2 for (No =) 50 AND (Not sure =) 100. or FT 'their Yes' for (No =) $\frac{1}{3}(300 - \text{'Yes'})$ AND (Not sure =) $\frac{2}{3}(300 - \text{'Yes'})$ If B2 not gained, then B1 for (No =) 50 OR (Not sure =) 100 or FT 'their Yes' for (No =) $\frac{1}{3}(300 - \text{'Yes'})$ OR (Not sure =) $\frac{2}{3}(300 - \text{'Yes'})$ OR (Not sure =) $\frac{2}{3}(300 - \text{'Yes'})$ or B1 for 'No' + 'Not sure' = 150 or B1 if 'Not sure' = 2 × 'No'. or B1 for Yes + No + Not sure = 300.
17. a = 113 b = 67 c = 113	B1 B1 B1	C.A.O. OR FT 180 – 'their a'. OR FT = 'their a' OR FT 180 – 'their b'.
18.(Probability of Puffin Island=)1 - $0.4 - 0.15 - 0.25$ = 0.2	M1 A1	An unsupported answer of 0.56 implies M1
(Number of cards showing Puffin Island =) 0.2×80	M1	FT 'their <u>stated</u> P(Puffin Island)' × 80, only if 'their <u>stated</u> P(Puffin Island)' < 1.
= 16	A1	16/80 is M1A0 unless 16 has been seen.
	M1 A1	Allow M1 for sight of 32 AND 12 AND 20.
(Number of cards showing Puffin Island =) 80 – 64	M1	FT 80 – 'their <u>derived</u> 64', only if 'their <u>derived</u> 64'<80.
= 16	A1	16/80 is M1A0 unless 16 has been seen.

19.(a) Correct construction method.	M1	Relevant construction arcs must be seen.
e.g. (i) intersecting arcs of radii 6cm and 9cm with		
centres A and C respectively.		
OR (ii) copying the angle at B at the point A (will		
require AB or BA to be extended)		
Completed parallelogram.	A1	
19.(b) 'measured length' × 200	M1	Allow for error in measuring line XY.
= 1520 (cm)	A1	Accept only in range 1480 to 1560 inclusive.
= 15·2 metres	B1	FT 'their 1520' ÷ 100.
		Unsupported 14.8 to 15.6 inclusive gains all 3 marks.
Alternative method		
Sight of scale is 1cm represents 2m	B1	
'measured length' × 2	M1	Allow for error in measuring line XY.
= 15.2 metres	A1	Accept only in range 14.8 to 15.6 inclusive.
20.(a) 9·231	B1	
20.(b) 170	B1	
· · · ·		
20.(c) 10	B1	