wjec cbac

GCSE MARKING SCHEME

SUMMER 2016

GCSE MATHEMATICS UNITISED UNIT 1 FOUNDATION TIER 4351/01

INTRODUCTION

This marking scheme was used by WJEC for the 2016 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.

GCSE Mathematics - Unitised Unit 1 Foundation Tier Summer 2016 Mark Scheme

Summer 2016 Unitised Unit 1		Maada	Commenter .
Foundation Tier	▲	Mark	Comments
Ribbon marking for 1(a) and 1(b)(i)			
1.(a) $(\pounds)15 \times 7.5 + (\pounds)107.5(0)$		M1	M0 for $(\pounds)15 \times 7.3 + (\pounds)107.5(0)$
$=(\pounds)220$		A1	
Ribbon marking for 1(a) and 1(b)(i)			
$1(b)(i)$ $0.25 \times (f)220$		M1	FT 'their £220'. Mark final answer.
$=(\pounds)55$		A1	SC1 for (£)165 (or equivalent FT credit payment.)
1(b)(ii) ¹ / ₄ or equivalent fraction (not decimal)		B1	CAO (no FT). Mark final answer.
1(c) 16:30 or 4:30(p.m.)		B1	Allow unambiguous notation.
			B0 for 04:30. B0 for 4:30a.m.
Ribbon marking for 2(a) and 2(b)			
2(a) Attempt at tallying		B1	These need not be correct number of tallies.
(14)			
11			
5		B2	B1 for 1 or 2 correct.
10			
Ribbon marking for 2(a) and 2(b)			
2(b) Uniform scale for the frequency axis starting at 0		B1	Starting at 0 may be implied.
			B0 for ambiguous placement of scale numbers.
Four bars at correct height.		B2	B1 for three correct heights. FT 'their numbers' in (a).
			If no scale shown, assume intervals of 1 from 0 to 15 for
			the 2^{IN} B2 (or B1).
			Allow FT, if possible, from a scale that was non-uniform
			(B0) but only because of one slip.
			Note: If uniform scale is $0, 5, 10$ etc., then accept
			$12.5 < 14$ bar $< 15^{\circ}$ and $10 < 11$ bar $< 12.5^{\circ}$.
			Densities uneven her widths -1 from the $2^{nd} P2$ (or P1)
2(a) Valid statement		P1	renanse uneven bar widths -1 from the 2 B2 (of B1).
2(c) value statement.		DI	Allow reference to not knowing either 'highest number'
e.g. we do not know the highest and lowest			OP 'lowest number'
Days are bunched (not specific)			Δ has allow any reference to 'up to 0' Ω '30 or more'
'It only gives 30 or more' 'You don't know the			Do not accept 'It's only an estimate'
evact number of days' 'It isn't specific of the			'It does not give the number of days' (that is no mention
actual number of days', it isn't specific of the			of 'actual' or 'specific' number of days)
Bibbon marking for 3(a) 3(b) and 3(c)			of actual of specific finance of days).
3(a) 22.4 (m ³)		B 1	
$\frac{3(a)}{22 + (m)}$ Bibbon marking for 3(a) 3(b) and 3(c)		DI	
3(h) 4 (weeks)		B1	
Ribbon marking for 3(a) 3(b) and 3(c)			
$3(c)$ 22.4 ± 4		M1	FT 'their (a)' \div 'their (b)'
$= 5.6 (\text{m}^3)$		A1	Allow rounding when FT answer not exact
3(d) Any date between			
17^{th} (Aug.) and 23^{rd} (Aug.) inclusive		B 1	Allow 24 th (Aug.)
	1	DI	1110 W 2 1 (1146.)

Summer 2016 Unitised Unit 1	~	Mark	Comments
Foundation Tier 4 (Number of oranges Emyrate $-\frac{3}{\times}16$ -) 12	✓	B1	Candidates may earn these marks in the order they
4. (Number of oranges Enryr at $= 74 \times 10^{-5}$) 12 Use of 'Price \div N ^o of oranges'.	· ✓	M1	present their answer.
(Price per orange)			
(Single pack) $\pounds 1.44/8 =$) (\pounds)0.18 or 18(p)		A2	A1 for 1 or 2 correct. FT 'their 12'.
(Two packs) $\pounds 2.40/16 =$) (\pounds)0.15 or 15(p)	√		Allow, in this instance only, 0.18p etc. but penalise in
(Oranges eaten) $\pounds 2.40/12 =$) (\pounds)0.20 or 20(p)	~		QWC award (unless corrected to 18p in further work).
Statement that Emvr was not wise to use the special			
offer (as the price of the oranges eaten is more than the	✓	A1	For a correct comparison of 18p with $240 \div$ 'their 12'.
original cost)			(8 < 'their 12' < 16).
Look for	1	owc	
 spelling clarity of text explanations and correct units shown 	✓ ✓	QWC	OWC2 Procents relevant material in a scherent and
 the use of notation (watch for the use of '=' and '÷' 		Z	logical manner, using acceptable mathematical form
being appropriate)			and with few if any errors in spelling, punctuation and
OWC2. Condidates will be expected to			grammar.
• present work clearly with words explaining process			
or steps			QWC1. Presents relevant material in a coherent and
AND			logical manner, but with some errors in use of
• make few if any mistakes in mathematical form,			OR
in their final answer			Evident weakness in organisation of material but using
QWC1: Candidates will be expected to			acceptable mathematical form, and with few if any
• present work clearly, with words explaining process			errors in spelling, punctuation and grammar.
OR or steps			
 make few if any mistakes in mathematical form. 			QWC0. Evident weakness in organisation of material
spelling, punctuation and grammar and include units			punctuation and grammar
in their final answer			Panetanion and Brannin
			An unsupported answer is QWC0.
Ribbon marking for 5(a) and 5(b)		D 1	Use overlay and measuring tools.
$S(a)$ Angle $ABC = 75^{\circ}$ BC = 9cm		BI B1	Allow $\pm 2^{\circ}$. Allow ± 2 mm
$\frac{BC = 9000}{BC}$ Ribbon marking for 5(a) and 5(b)		DI	Use overlay and measuring tools.
$5(b)$ Length AC \times 20		M1	M1 for clear intent to use 'length of AC \times 20'.
			('Intent' taken to be a stated length \times 20 OR for an
			unsupported answer equal to 'their AC' ± 5 mm \times 20.
= 190 metres		Al	FT their length $\pm 2mm^2 \times 20$.
6 (Paris) Down 5		B1	<u>Correct units must be given.</u>
(Helsinki) -7		B1	
(Glasgow) -1		B1	
7.			Calculations <u>must</u> be linked to the 16000 at some stage
16000 ÷ 1000	\checkmark	M1	before any M marks can be awarded.
× 1.75	\checkmark	Ml M1	If a calculation using any of the three values is repeated (a, a, b) followed by y_{0}^{2} or b^{2} wood twice) then MO
$\div \delta$	\checkmark	111	(e.g. -6 10110wed by $\times 6$, or -8 used twice) then MU.
			Award the M1 at any stage. Allow FT if a previous M1
			has not been awarded.
= 3.5(gallons)	~	A1	C.A.O. but allow 3(gallons) or 4(gallons) if 3.5(gallons)
			is seen. Mark final answer.

Summer 2016 Unitised Unit 1	✓	Mark	Comments
Foundation The 8 (Area of wall -) 25×2	✓	M1	
6. (Area of wall -) 2.5×2 - 50(m ²)	✓	A1	
= 50(m)		A1	
(Cement) 15.5×50 OR (Sand) 56×50	~	M1	FT 'their area' only if >25 and used consistently for cement and for sand
= 775(kg) AND $= 2800(kg)$	~	A1	Both required for A1.
(Cement bags) $\frac{775}{25}$ OR (Sand bags) $\frac{2800}{40}$	~	M1	FT 'their derived amounts' (but not 15.5kg or 56kg).
= 31 AND $= 70$	~	A1	Both required for A1. (Rounded up for FT answers.)
(Cost of cement) 31×(£)4.87 (Cost of sand) 70×(£)2.65	✓ ✓	M1	M1 for either. FT 'their derived number of bags' (even if not whole numbers)
$=(\pounds)150.97$ AND $(\pounds)185.5(0)$	~	A1	Both required for A1.
$(Total cost =) (\pounds) 336.47$		B1	FT if a derived cost found for both cement and sand (but not £4.87 or £2.65).
Ribbon marking for 9(a) and 9(b)			
9(a) A correct point plotted at $(k, 175k)$ $k \neq 0$		B1	Allow ($\pm \pounds 0.50$, ± 50 yen) i.e. $\frac{1}{2}$ a small square'. B0 if any incorrect plots used e.g. 'dog-leg'. Allow unambiguous attempt at plotting an inappropriate
		D 1	point e.g. (1, 175) which may lead to B1,B1,B0.
A line joining $(0,0)$ and their plotted point.		BI D1	If no line drawn award B1 for any 4 correct plots. CAO but award B1 if line starts at $(10, 1750)$
Confect line drawn between $(0, 0)$ and $(50, 8750 \pm 50)$.		DI	CAO but award B1 II line starts at (10, 1750).
Ribbon marking for 9(a) and 9(b)			This implies an previous marks.
9(b) Correct method using their graph		M1	F T 'their graph' (allow $\pm \frac{1}{2}$ a small square)
e.g. $4 \times$ reading at 5000 ven			
(\pounds) (£)114(to nearest £)		A1	Must be to the nearest pound.
			E.g. using graph to give
			$5000yen = \pounds 29$, so $20000yen = \pounds 116$ is M1A1
			Alternative method
			$\frac{11000000}{20000 \div 175}$ M1
			$(\pounds)114$ (to nearest $\pounds)$ A1
			(£)114.28 or (£)114.29 gains M1A0
			If graph not used then allow SC1 for
			$\pounds 114 < \text{Answer} \le \pounds 115$ (may be from trial and
			improvement).
10(a) Valid reason for misleading impression		E1	<u>Must</u> refer to there being no information regarding scale
e.g. 'No scale (numbers / %) for pass rate.'			for this E1'.
			Do not accept e.g. 'different number of pupils'.
Suitable example		F1	Allow any form of suggestion that <i>Corry School</i> (may)
e.g. ' <i>Porws</i> may have gone from 10% to 20% but			still have better results than <i>Porws School</i> .
<i>Gorry</i> may (be better) at constant 80%'.			
'Gorry's results are better'.			
10(b) A statement that refers to the actual numbers		E1	'There could be more councillors at Eastbridge' is E1.
not being known.			'There could be more councillors at Westbridge' is E0.
e.g. 'no figures given'.			

Summer 2016 Unitised Unit 1 Foundation Tior	~	Mark	Comments
11(a) Use overlay Position at 108° from A. Position at 230° from B. Position marked OR two intersecting lines.		M1 M1 A1	$\pm 2^{\circ}$ (use overlay). Allow the M marks for dots, crosses or any unambiguous indication that the correct bearings have been offered. F.T. if at least M1 and two intersecting lines. (Lines must originate from point A and point B respectively)
 11(b) Some comment about the different nature of the terrain between the points and the finish OR that the route was different in some way. E.g. 'Uphill from B downhill from A', 'there was (<i>insert obstacle name</i>) between B and P', 'Krysta wasn't able to run in a straight line', 'easier terrain', 'it was straighter', 'it was flat', 'a more direct route', 'Krysta went the wrong way' etc. 		E1	Do not accept any reference to different running speeds or tactics.
12. 4.87		B2	B1 for sight of 4.86(68) or 4.9(0) or 4.8(0) or 4.870.
13. Sight of $35 \cdot 5(kg)$ $23 \times 35 \cdot 5$ $= 816 \cdot 5(kg) \text{ AND 'No'.}$		B1 M1 A1	F.T. only if $35 \le$ 'their least value' < 36. (Note SC1) Accept 'Yes' for certain allowed FTs e.g. 23×35.9 B0 M1(FT) = 825.7(kg) AND 'Yes'. A1 <u>Alternative method 1.</u> $\frac{825}{35.5}$ (B1 sight of 35.5) = 23.2 AND 'No' A1 <u>Alternative method 2.</u> $\frac{825}{23}$ M1 (Since) bags may only contain $35.5(kg)$ B1 SC1 for $23 \times 36 = 828$ AND 'Yes'. OR $\frac{825}{23} = 22.9$ AND 'Yes'. Note that $\frac{825}{23} = 35.8$ AND 'Yes' is M1A0B0
14. Beca's total score >21 Beca's median score < 5 Beca's range < 7		B1 B1 B1	Mark scores given in table. Possible to allow if table not completed if total > 21. Possible to allow if enough of table completed to ensure median < 5. All of table must be completed for this B1. Penalise -1 from any marks gained if a score > 10 is included in the table.

GCSE Mathematics Unitised Unit 1 FT MS Summer 2016/LG