wjec cbac

GCSE MARKING SCHEME

JANUARY 2016

MATHEMATICS UNITISED - UNIT 2 FOUNDATION TIER 4352/01

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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.

2016 January Unit 2 (non calculator) Foundation Tier	Marks	Mark Scheme Comments
1.(a) 845 000 (b) 702 (c) 9 (d) 1, 2, 7, 14	B1 B1 B1 B2	Allow –9 or ±9 B1 for 3 or 4 correct factors and no more than 1 wrong factor
 (e) (i)18(00) ÷ 12 AND evidence of engagement with method for division (£)1.5(0) or 150p (ii) (£) 48 	M1 A1 B1 8	If units used, they must be correct
 2. (a) Obtuse angle in correct position (b) Line through R parallel to PQ (c) m³ or litre (I) kg 	B1 B1 B1 B1 4	Use overlay
3. (a) A B (b)(i) an even chance	B1 B1 B1	Allow 3/8 and 7/8 to represent A and B respectively. Use overlay. A should be between 1/4 and 1/2 exclusive. B should be between 3/4 and 1 exclusive.
(ii) impossible 4.(Cost of apple trees = $75 + 15 = \pounds$) 90 (Total cost of trees = $150 - 25 = \pounds$) 125 (Cost of plum trees = $125 - 90 = \pounds$) 35	B1 4 B1 B1 B1	OR (150 – 90 = £) 60 OR (60 – 25 =£) 35 FT 'their 90' and 'their 125' and 'their 60'
 (Cost of 1 plum tree = £35 ÷ 2 = £) 17.50 Look for relevance of work shown generally correct spelling clarity of text explanation (see statements in brackets) use of notation (appropriate use of '=', '÷', '+', '-', £) QWC2: Candidates will be expected to present work clearly, with words explaining process or steps AND make few if any mistakes in mathematical form, spelling, punctuation and grammar and include units in their working QWC1: Candidates will be expected to present work clearly, with words explaining process or steps QWC1: Candidates will be expected to present work clearly, with words explaining process or steps QWC1: Candidates will be expected to make few if any mistakes in mathematical form, spelling, punctuation and grammar, and include units in their working. 	B1 QWC 2	 FT 'their 35' QWC2 Presents relevant material in a coherent and logical manner, using acceptable mathematical form, and with few if any errors in spelling, punctuation and grammar. QWC1 Presents relevant material in a coherent and logical manner but with some errors in use of mathematical form, spelling, punctuation or grammar OR evident weaknesses in organisation of material but using acceptable mathematical form, with few if any errors in spelling, punctuation and grammar. QWC0 Evident weaknesses in organisation of material, and errors in use of mathematical form, spelling, punctuation and grammar.
	6	A final unsupported statement is QWC0

2016 January Unit 2 (non calculator) Foundation Tier	Marks	Mark Scheme Comments
5.(a) 9m (b) (i) $(x =) 8$ (ii) $(x =) 73$	B1 B1 B1 3	Accept embedded answers in (b)
	B2	B1 for all 4 correct squares and no more than 2 extra squares OR B1 for 3 correct squares and no more than 1 incorrect squares OR B1 for 2 correct squares and no incorrect squares
	2 M1	
7. 300 × 9.5 2850 2⋅85(0) (kg)	A1 B1	FT 'their derived 2850'
8 (a) (0) 2 aa	3 B1	
8. (a) (0)·3 oe (b) (0)·068 (c) 3800 (d) (0)·4 (e) 1/100	B1 B1 B1 B1 B1	
(f) 0·35 × (£)400 or equivalent (= 140) (£)400 − 0·35 × 400	M1 M1	Correct method for finding 35% of 400 Full, correct method. $0.65 \times (\pounds)400$ earns M1M1
(£)260	A1 8	CAO
9. (a) 14 11 8 17 13 9 35 25 15	B2	B1 for at least 4 correct entries
(b) 2/9	B2 4	FT their table. B1 for a numerator of 2 in a fraction less than 1. B1 for a denominator of 9 in a fraction less than 1. Do not penalise incorrect reduction of fractions from a FT. NB Penalise –1 for use of words such as '2 out of 9', '2 in 9'. or '2:9'. When both fraction and wrong notation seen, DO NOT penalise wrong notation.
10. (<i>x</i> =) 360(°) ÷ 3 120 (°)	M1 A1 2	Alternative method: e.g. (6 – 2)×180/6 M1 120 (°) A1
11. 4/9 × 450 200 200 × (£) 1.75 (£) 350	M1 A1 M1 A1 4	FT 'their 200'

2016 January Unit 2 (non calculator)	Marks	Mark Scheme
Foundation Tier		Comments FT until 2 nd error.
4x - 6 = 1 $4x = 7$	B1 B1 B1	Mark final answer.
(x =) 7/4 or 1 ³ ⁄ ₄ or 1.75	Ы	Alternative solution: $2x - 3 = \frac{1}{2}$ B1
	3	2x = 3.5 B1 (x=) 7/4 or 1 ³ / ₄ or 1.75 B1
13.		Check diagram
3x + 8 + 4x - 2 + 90 = 180 or equivalent 7x = 84 OR $7x + 96 = 180$ OR $7x + 6 = 90x = 12(^{\circ})$	M1 A1 A1	CAO FT 'their ax = b', a ≠ 1
		Alternative method (for first 3 marks), using trial and improvement to equate the sum of the base angles to 90: 2 appropriate trials M1 Trials of 11 and 13 or trials of 11 and 12 or trials of 12 and 13 A1 $x = 12(^{\circ})$ A1 Unsupported $x = 12(^{\circ})$ gains 3 marks
(4 × 12 – 2 =) 46(°) (y = 180° – 46° =) 134(°)	B1 B1	FT 'their x' (provided $x < 23(^{\circ})$) FT 'their 46°' Alternative (for final 2 marks): $(y =) 3 \times 12 + 8 + 90$ B1 $(=) 134(^{\circ})$ B1
	5	Unsupported $x = 12(^{\circ})$ AND $y = 134(^{\circ})$ gains 5 marks
14. (a) – 1	B1	
(b) At least 5 correct plots	P1	Plots should be accurate to within one small square
All 7 points correctly plotted and joined with curve	C1	FT 'their table'. C0 for a polygon
(c) Line drawn correctly Both <i>x</i> -coordinates	P1 B1	Strict FT 'their curve' for 2 points of intersection B1 does NOT imply P1 ($x = -0.4$ and $x = 4.4$)
15. (a)	5	FT until 2 nd error
Method that produces at least 2 correct prime factors	M1	Ignore 1s seen
Sight of correct factors (2, 5, 5, 7) in any order	A1	
$2 \times 5^2 \times 7$	B1	FT their factors (with at least 1 index >1 used). Do not ignore 1s within the product. B0 for a sum or list. Accept any order, provided indices are correctly used.
(b) Valid explanation e.g. not all powers are even	B1	
	4	