



GCSE MARKING SCHEME

SUMMER 2017

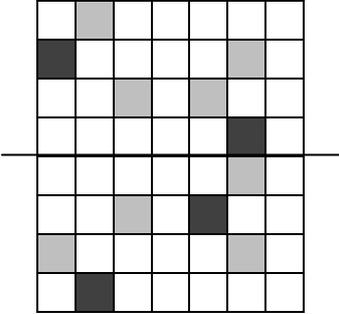
**GCSE (NEW)
MATHEMATICS - UNIT 1 (FOUNDATION)
3300U10-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2017 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 Unit 1: Foundation Tier Summer 2017	✓	Mark	Comment
1. (a) 50 004		B1	
1. (b) 80(p)		B2	B1 for $720(p) \div 9$ or (£)0.8(0)(p) or £80
1. (c) 4 and 5		B2	B1 for at least two different pairs of numbers which add to 9 OR B1 for at least two different pairs of numbers which have a product of 20 OR B1 for one pair that adds to 9 and one pair that has a product of 20.
2. Evidence of counting squares 81 – 91 (cm ²)		M1 A1	
3. 		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
4. (a) obtuse		B1	
4 (b) cuboid		B1	
5. (a) Dragons 35 Ospreys 45 Scarlets 40		B3	B2 for any two correct entries OR any one correct entry with evidence of correct scale indicated by at least one correct value and no incorrect value B1 for any one correct entry OR correct scale OR sight of '1 square = 5 pupils' OR sight of '2 squares = 10 pupils'
5. (b) 50/170 or equivalent ISW		B2	B1 for a numerator of 50 in a fraction less than 1. B1 for a denominator of 170 in a fraction less than 1. B1 for use of words such as '50 out of 170', '50 in 170' or '50:170'. If words and correct notation seen, then ignore the words.

6. (a) A (3, 2) B (1, -4)		B1 B1	
6. (b) C (2, -1)		B2	B1 for a clear indication of the position of C <u>Alternative method</u> FT 'their coordinates' for A and B $([x_1 + x_2]/2, [y_1 + y_2]/2)$ M1 Correct evaluation A1
7. (a) (i) $(x=) 8$		B1	Accept embedded answers Mark final answer
7. (a) (ii) $(y=) 64$		B1`	Accept embedded answers Mark final answer
7.(b) $4k$		B1	
8. (a) 81		B1	
8.(b) 84		B1	
9. 10.3 cm 46° 59		B1 B1 B1	± 2 mm $\pm 2^\circ$ $\pm 2^\circ$ If B3 awarded, penalise -1 if the triangle is incomplete OR if a ruler is not used
10.(Number of circles on the length= $100 \div 5$ (= 20) OR (Number of circles on the width =) $30 \div 5$ (=6) (Number of circles =) 6×20 120	✓ ✓ ✓ ✓	M1 m1 A1 OC1 W1	Accept either 5×20 (=100) OR 5×6 (=30). FT 'their 6' and 'their 20' if M1 awarded CAO Organisation and Communication. For OC1, candidates will be expected to: <ul style="list-style-type: none"> • 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 Accuracy of writing. For W1, candidates will be expected to: <ul style="list-style-type: none"> • 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

11.(a)	1 and -5		B2	B1 for 1. B1 FT 'their 1' - 6.
11.(b)	- 6 + 70 = 64		B1 B1	B1 for sight of - 6 OR 70 (but not -70). B0 for -6x + 70y. C.A.O. Mark final answer.
12.	Showing (0.4), 0.15 and 0.35 OR 40% , (15%) and 35% OR 8/20, 3/20 and (7/20) OR three correct calculations for a common amount. 15% 7/20 0.4 in order		B2 B1	B2 for all correct decimals, OR all correct %, OR all correct fractions <u>with a common denominator</u> , OR correct work using a common amount, OR a valid combination that allows full comparison. B1 for one correct conversion <u>that still allows a full comparison</u> . (i.e. allow one error in attempt at common format.) Allow any unambiguous indication. F.T. 'their work' if at least B1 gained. Unsupported correct answer gains B1 only.
13.	Correct enlargement.		B2	Allow any orientation. B1 for one side correctly enlarged. SC1 for an enlargement by a factor of 2 or 4.
14.(a)	1/6		B1	
14.(b)	10		B1	
14.(c)	6 blue 6 yellow 3 pink		B1	
15.	(Team A) 12 (Team B) 3		B2	B1 for values that satisfy $A - B = 9$ OR $A = 4 \times B$. e.g. final working line of 10 and 1 (or 8 and 2) would be awarded B1 if not contradicted in the answer space. SC1 for reversed answer $A = 3$ and $B = 12$.
16.	(David - Hr Jane - Rh Mary - P) David - Hr Jane - P Mary - Rh David - Rh Jane - Hr Mary - P David - Rh Jane - P Mary - Hr David - P Jane - Hr Mary - Rh David - P Jane - Rh Mary - Hr		B2	Allow any unambiguous notation e.g. 'DH'. For all other 5 different combinations. Do not penalise repeats. B1 for 3 or 4 other different combinations. B0 otherwise.

<p>17.(a) $x + 2x + 3x + 90 = 360$ or equivalent</p> $6x = 270$ $x = \frac{270}{6}$ $= 45$	<p>✓ ✓ ✓ ✓</p>	<p>M1 A1 A1 A1</p>	<p>Allow M1 for attempting sum of $a + b + c + 90$ with ratio $a:b:c = 1:2:3$ and <u>clearly</u> using trial and improvement to aim for a total of 360.</p> <p>F.T. from $ax = b$.</p> <p>Allow SC2 for an answer of 15 (from '$= 180$')</p>
<p>17.(b) Correct use of $2x = 90^\circ$ 'Yes' AND correct justification. e.g. 'Yes because of interior angles', 'Yes as lines are perpendicular to the base' 'Both A and B are 90°'.</p>		<p>B1 E1</p>	<p>F.T. 'their value of x'. Must be used in justification. Dependent on B1 with F.T. justification.</p> <p><u>Alternative method for the B1 mark</u> Use of $3x = 135^\circ$ AND $x = 45^\circ$</p>
<p>18(a) $\frac{40 \times 30}{200}$ OR $\frac{41 \times 30}{200}$ $= 6$ OR 6.15 or 6</p>		<p>M1 A1</p>	<p>Unsupported answer (M0) is also A0.</p>
<p>18.(b) (i) 454 680</p>		<p>B1</p>	
<p>18.(b) (ii) 842</p>		<p>B1</p>	
<p>18.(b) (iii) 5.4</p>		<p>B1</p>	
<p>19. (Use of area of PBCQ $\Rightarrow 52 - 20 (= 32 \text{ cm}^2)$ (Area of PBCQ $\Rightarrow 8 \times f = 32$ $f = 4$ (Area of APQD $\Rightarrow 4 \times g = 20$ $g = 5$</p>	<p>✓ ✓ ✓ ✓ ✓</p>	<p>B1 M1 A1 M1 A1</p>	<p><i>Answers /working may be seen on diagram.</i></p> <p>F.T. 'their derived 32' but not 52 [B1M1 implied by $8f = 32$] C.A.O. (implies B1M1A1)</p> <p>F.T. 'their f'.</p> <p><u>Alternative method</u></p> $f \times (g + 8) = 52 \quad M1$ $[fg + 8f = 52]$ $fg = 20 \quad M1$ <p>[M2 implied by $20 + 8f = 52$ or $8f = 32$]</p> $f = 4 \quad A1 \quad \text{C.A.O.}$ $4 \times g = 20 \quad M1 \quad \text{FT 'their f'}$ $g = 5 \quad A1$