GCSE MARKING SCHEME

AUTUMN 2017

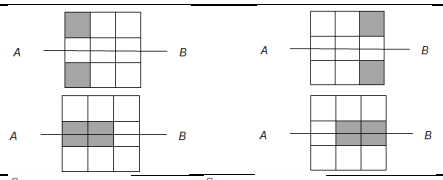
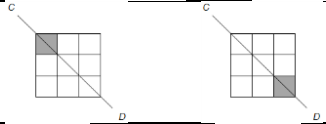
GCSE
MATHEMATICS
UNIT 1 - FOUNDATION TIER
3300U10-1

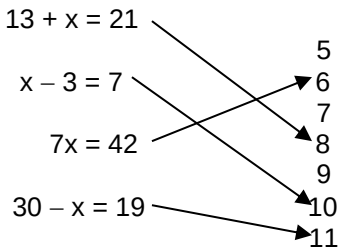
INTRODUCTION

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 Autumn 2017 Final Marking Scheme	Mark	Comment
1. (a) straight line drawn joining 2 points on circumference passing through centre	B1	
1. (b) straight line touching circumference	B1	
2. (a) 317	B1	
2. (b) 157	B1	
2. (c) 4	B1	
2. (d) 60	B1	
3. (a) 15	B1	
3. (b) 0	B1	
3. (c) 1	B1	
4. (a) 54	B1	
4. (b) 20	B2	B1 for an ordered list that is sufficient to identify the middle term e.g. 13, 16, 17, 18, 20, (22, 24, 25, 27) Allow omission of one value
5. (a) 5/15 1/3	B1 B1	FT 'their 5/15' provided simplification is possible and that it is a fraction less than 1
5. (b) 8 squares shaded	B1	
6. (a) 44000	B1	
6. (b) 9	B1	
7. (y=) 360(°) – [60(°) + 90(°)] or equivalent 210(°)	M1 A1	
8. (a) correct shading of two squares so that AB is the only line of symmetry	B1	
8. (b) correct shading of one square so that CD is the only line of symmetry	B1	
8. (c) correct shading of two more squares so that there is still rotational symmetry of order 2	B1	

9. (Length of rectangle B = 25 × 5=) 125 OR (Width of rectangle B = 8 × 5 =) 40 (Perimeter of rectangle B =) 125 + 125 + 40 + 40 330 (cm)	 B1 M1 A1	. FT 'their 125' and 'their 40' CAO *Alternative solutions:* *(Perimeter of rectangle A =)* *25 + 8 + 25 + 8 (cm = 66) M1* *5 × 66 (cm) M1* *FT 5 × 'their derived perimeter'* *(Perimeter of rectangle B = 5 × 66 =)* *330 (cm) A1* *OR* *25 × 5 + 8 × 5 (= 125 + 40 = 165) M1* *2 × 165 M1* *FT 'their 165'* *(2 × 165 =) 330 A1*
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 explanations 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) AŶX = 63° AY = 7·2 cm.	B1 B1	± 2° ± 2 mm If B0 B0, award B1 for a point at the correct angle, and of the correct length from an incorrect point on the line XY (i.e. not at Y).
10. (b) 320 (°)	B1	± 2°
11.  	B1 B1 B1 B1	

12.(a) 81 000	B2	B1 for sight of either 81 or 1000.
12.(b) 1·78	B1	Mark final answer.
12.(c) Correctly using a common denominator. 1/6 or equivalent	M1 A1	Mark final answer.
12.(d) 0.06	B1	Mark final answer.
13. FALSE FALSE TRUE TRUE TRUE	B3	For all 5 correct. B2 for 4 correct. B1 for 3 correct.
14. (Volume of cuboid A =) $6 \times 3 \times 2$ (= $36cm^3$) OR (Volume of cuboid B =) $2 \times 2 \times h$ $6 \times 3 \times 2 = 2 \times 2 \times h$ OR $6 \times 3 = 2 \times h$ $\frac{6 \times 3 \times 2}{2 \times 2} = h$ OR $36 = 4h$ (h =) 9(cm)	M1 M1 m1 A1	M1 for sight of 36 OR 4h. This implies M1M1. Award M1M1m1 for $6 \times 3 \times 2 = 2 \times 2 \times 9$ (but not the A1) Allow correct FT value of 9 if 'their $6 \times 3 \times 2$' ≠ 36 C.A.O. May be seen on diagram.
15. $\frac{3}{5}$ or equivalent fraction (a/b)	B3	B2 for two of the conditions met. B1 for one condition met. Penalise −1 if the answer is given as a decimal or a percentage or a fraction containing a decimal.
16. 15x – 10	B1	Must be an expression. Mark final answer.
17.(a) 9	B1	Allow a list of all 9 numbers (no repeats or extras).
17.(b) 11, 13, 23, 31.	B2	All correct with no incorrect numbers. B1 for all correct with at most 2 incorrect. B1 for three correct and at most 1 incorrect. B1 for two correct and 0 incorrect.
17.(c) 4/9 ISW	B2	Correct answer OR F.T. 'their number of primes' / 'their (a)', provided the resulting fraction is between 0 and 1. B1 4/x with x>4 OR y/9 with y<9 or equivalent for FT Penalise -1 if incorrect notation used e.g. '4 out of 9'
17.(d) (Number of winners =) $\frac{4}{9} \times 180$ = 80 (Expected profit =) (£)180 – 80 × (£)2 = (£)20	M1 A1 M1 A1	F.T. 'their 4/9' if less than 1. M0 for '4/9 of 180' unless correct evaluation shown. A0 if incorrect reduction in (c) is used. F.T. 'their stated 80'. If the FT results in a loss then 'Loss' must be stated or the answer left as a negative.

18.		*This is a 'proof' question so the work for the M1 mark must be <u>seen</u> before the A1 mark can be awarded.*
(BÂD =) 360 – (85 + 122 + 93)	M1	
= 60(°)	A1	F.T. 'their 60' only if previous M1 awarded
(APQ = AQP =) $\frac{180 - 60}{2}$	M1	Allow reference to isosceles triangle
= 60(°)	A1	
A convincing statement AND the three angles shown as, or stated to be 60(°)	E1	Independent of previous marks. Must refer to three (all) angles being equal. Three angles of 60° must be shown or stated as part of a convincing statement. Reference to equal sides alone is E0.