



GCSE MARKING SCHEME

AUTUMN 2016

**MATHEMATICS (NEW)
UNIT 1 - FOUNDATION TIER**

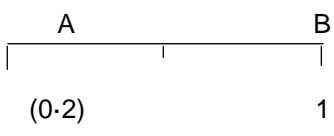
3300U10-1

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 Unit 1 : Foundation Tier Autumn 2016	✓	Mark	Comment
1.(a) straight lines correct curve correct		B1 B1	
1. (b) 3.7 cm or 37 mm		B2	±2 mm B1 for 3.7 or 37 B1 for incorrect answers in the range 3cm to 8cm or 30mm to 80mm. Units must be included.
2. (a) unlikely		B1	
2. (b) impossible		B1	
3. (a) 6		B1	Accept embedded answer.
3. (b) 1 and 13 OR 2 and 5		B1	Do not accept 0 and 21.
4. (Perimeter of triangle =) $(72 \div 4) \times 3$ 54 (cm) Organisation and communication Accuracy of writing	✓ ✓ ✓ ✓ ✓	M2 A1 OC1 W1	M1 for (side length =) $72 \div 4$ M1 for (perimeter of triangle =) 'their $72 \div 4$ ' $\times 3$ CAO 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. 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.
5. (a) $(x =) 6$		B1	Accept embedded answer. Mark final answer.
5. (b) $(y =) 15$		B1	Accept embedded answer. Mark final answer.
6.  		B1 B1	Allow 2/10 and 1 to represent A and B respectively. A should be within 0.1 and 0.3 exclusive. B should be at 1. SC1 for both marks correctly placed but not labelled.
7. $204 \div 15$ 13.6 or 13 rem. 9 or 13 full rows 14 $15 \times 14 - 204$ or $15 - 9$ or equivalent 6	✓ ✓ ✓ ✓ ✓	M1 A1 A1 M1 A1	Attempt to find how many 15s go into 204. FT 'their 13.6' rounded up to next integer FT $15 \times$ 'their 14' - 204 or 15 - 'their 9' provided first M1 awarded. Award for a positive whole number <15 on FT
8. (a) 2		B1	
8. (b) 3		B1	

GCSE Mathematics Unit 1 : Foundation Tier Autumn 2016	✓	Mark	Comment
9.(a) (5,4)		B1	
9. (b) B plotted at (5, - 2) C plotted at (- 3, - 2)		P1 P1	
9. (c) (- 3, 4)		B1	FT 'their completed rectangle' where possible, if at least P1 awarded.
10. ($\hat{PAB} =$) 74° ($PA =$) 6.5 cm		B1 B1	$\pm 2^\circ$ ± 2 mm
11. ($x =$) $180^\circ - 105^\circ - 43^\circ$ or equivalent 32°		M1 A1	
12.(a) 0.28 or equivalent e.g. 28/100		B1	Allow .28.
12.(b) 6.35		B1	
12.(c) ($27 - 16 =$) 11		B2	B1 for sight of 27 OR 16.
12.(d) <u>Correctly</u> using a common denominator 3/10 OR 15/50 OR 0.3 or equivalent.		M1 A1	M1 for 9/10 – 6/10 OR 45/50 – 30/50 OR 0.9– 0.6 OR equivalent Mark final answer.
13. TRUE TRUE FALSE FALSE TRUE		B3	B3 for 4 or 5 correct. B2 for 3 correct. B1 for 2 correct.
14. Blue 16 Yellow 11 Red 4		B3	<i>Note Check for the required conditions being met and not the individual numbers. Required conditions are: 'B = Y + 5', 'B = 4R' and 'B + Y + R = 31'. Must be whole numbers or B0. B3 all three conditions correct. B2 for two conditions correct. B1 for one condition correct. Answer space answers take precedence. If answer spaces are left blank allow <u>unambiguous</u> indication of their answers. A number must be given for 'Blue', else B0. Blank spaces for 'Yellow' and 'Red' to be taken as 0 unless <u>unambiguously</u> indicated elsewhere.</i>
15.(a) 5 -2		B2	B1 for 5. B1 F.T. for 'their 5' – 7 if negative.
15. (b) $13y - 9y = 27 + 5$ $4y = 32$ $y = 8$		B1 B1 B1	To gain the first two B1 marks there must be an equation. Accept embedded answer. F.T. until 2 nd error. 32/4 not accepted as final answer. If FT leads to a whole number answer, it must be shown as a whole number. Otherwise accept a fraction. Mark final answer.

GCSE Mathematics Unit 1 : Foundation Tier Autumn 2016		✓	Mark	Comment														
16.(a)	(9) 10 (11) 12 13 (6) 7 (8) 9 10 (3) (4) (5) (6) (7) (1) (2) (3) (4)		B1	All six entries correct.														
16.(b)	$\frac{5}{12}$		B2	F.T. 'their fully completed table'. Penalise -1 for <u>only</u> words (5 out of 12) or <u>only</u> ratio (5:12). B1 for $x/12$ if $x < 12$. B1 for $5/y$ if $y > 5$.														
16.(c)	$\frac{5 \times 60}{12} = 25$		M1 A1	F.T. 'their 5/12' (including e.g, $\frac{1}{2}$, 50%, 50-50, evens) 25/60 OR 25:60 gets M1A0. 25 out of 60 gets M1A1.														
17.	(BD or AE) $\times 9 = 45$ OR (BD or AE =) 45/9 (BD or AE =) 5(cm) (CD =) 6(cm) (Area of triangle =) $\frac{5 \times 6}{2} = 15(\text{cm}^2)$	✓ ✓ ✓ ✓ ✓	M1 A1 B1 M1 A1	Accept any unambiguous reference to or notation for BD and AE. Allow use of 'height' or 'width'. May be seen on the diagram. May be seen on the diagram. F.T. 'their 5' provided it clearly represents BD. F.T. 'their 6' provided it clearly represents CD. No marks for an unsupported 15 BUT 15cm^2 gains all 5 marks. <u>Alternative method.</u> $9 \times (\text{BD or AE}) = 45$ OR (BD or AE =) 45/9 M1 (BD or AE) = 5(cm) A1 (Area of trapezium =) $\frac{9 + 15}{2} \times 5$ M1 (F.T. 'their 5') $= 60(\text{cm}^2)$ A1 (Area of triangle = $60 - 45 = 15(\text{cm}^2)$ A1														
18.	<table border="1"> <thead> <tr> <th>Sum</th> <th>Answer</th> </tr> </thead> <tbody> <tr> <td>even + even</td> <td>(even)</td> </tr> <tr> <td>even + odd</td> <td>odd</td> </tr> <tr> <td>odd + odd</td> <td>even</td> </tr> <tr> <td>even \times even</td> <td>even</td> </tr> <tr> <td>even \times odd</td> <td>even</td> </tr> <tr> <td>odd \times odd</td> <td>odd</td> </tr> </tbody> </table>	Sum	Answer	even + even	(even)	even + odd	odd	odd + odd	even	even \times even	even	even \times odd	even	odd \times odd	odd		B3	For all 5 correct. B2 for 4 correct. B1 for 3 correct. B0 for fewer than three correct.
Sum	Answer																	
even + even	(even)																	
even + odd	odd																	
odd + odd	even																	
even \times even	even																	
even \times odd	even																	
odd \times odd	odd																	
19.	All four conditions met. <ul style="list-style-type: none"> All numbers between 1 and 9 inclusive. Median value = 6 Range = 7 Total = 25 		B3	B2 for three conditions met. B1 for two conditions met. Possible answers for B3 are 1, 2, 6, 8, 8 OR 1, 3, 6, 7, 8 OR 1, 4, 6, 6, 8 OR 2, 2, 6, 6, 9 Must have five numbers, otherwise B0. Numbers need not be integers. Numbers shown in the boxes take precedence. If answer boxes are left blank allow <u>unambiguous</u> indication of their <u>five</u> numbers.														