GCSE MARKING SCHEME

AUTUMN 2018

**GCSE
MATHEMATICS
UNIT 2 - FOUNDATION TIER
3300U20-1**

INTRODUCTION

This marking scheme was used by WJEC for the 2018 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.

WJEC GCSE MATHEMATICS (3300U20-1)

AUTUMN 2018 MARK SCHEME

GCSE Mathematics Unit 2: Foundation Tier	Mark	Comments

1.   3.42
         0.57
                          4.65
         42
	B1
	B1
	B1
	B1
		
		Allow 0.57p but not 57p.
		
		Ignore any units given.

2.(a) 13.25	B1	
2.(b) sixty thousand (and) forty three	B1	
2.(c)(i) 8753	B1	
2.(c)(ii) 358	B1	

3.(a) Sum of numbers (225)
 	
     Sum of numbers / 9
     25
	M1
	
	m1
	A1
		Allow for an unsupported value between 192 and 258 inclusive.
		Award this m1 for 'their sum' ÷ 9
		CAO

3.(b) Correct explanation e.g. Neil hasn't written the numbers in (ascending or descending) order.	E1	
4.(a) 6110	B1	
4.(b) 50	B1	
5.(a) Lines Curve	L1 C1	For all 3 straight lines. F.T. their lines, must have opposite curvature, starting at the correct place and ending at the start of their line.
5.(b) Rectangle	B1	
5.(c) Cylinder	B1	

6.(a) 1 and 108   OR   2 and 54   OR
     3 and 36   OR   4 and 27   OR
     6 and 18   OR   9 and 12
	B2	B1 for 108 <u>and</u> attempting to find two numbers which multiply to give 108.

6.(b) 35 × 4 (=140)
          ÷ 10
          (=)14
	M1
	M1
	A1
		
		F.T. 'their 140' provided not 35.
		C.A.O.

6.(b) Alternative method
     35 ÷ 5 × 2
          (=) 14
	M2
	A1
		
		C.A.O.

7.(a) 3.9	B1	
7.(b) 26w	B1	Mark final answer.
7.(c) 38	B1	
7.(d) Multiply (the previous term) by 3	B1	Allow ×3 or equivalent.

7.(e) Any suitable reason e.g.
     "8 is a factor of every number (in the
     sequence)"
or   "All numbers (in the sequence)
     are even (and 2 is the only even prime)"
or   "There are no primes in the 8 times table".
	E1	

8. (The sides of the rectangle are:)	B1	Could be implied by subsequent working.
1 (cm) and 20 (cm), or 2 (cm) and 10 (cm), or 4 (cm) and 5 (cm)		Could be seen on diagrams.
(Perimeter = 1 + 20 + 1 + 20 =) 42 (cm), and (Perimeter = 2 + 10 + 2 + 10 =) 24 (cm), and (Perimeter = 4 + 5 + 4 + 5 =) 18 (cm)	B2	B1 for one or two correct perimeters.
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 explanation and working in a way that is clear and logical
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
9. 0·57 × 83·5 or equivalent. 47·6	M1 A2	A1 for sight of 47·5(….) or sight of 47·60. A1 for 47·6%. Mark final answer.

10.   (Height =) 97.6 .
                   6.1 × 5
                    = 3.2 (cm)
	M1
	
	A1
		Allow M1 for 6.1 x 5 x h = 97.6.
		
		Check their diagram.
		Accept embedded answers,
		e.g. 6.1 × 5 × 3.2 = 97.6

11. Correct pie chart showing two sectors with angles 120° and 240°	B3	*Allow ± 2°.* *If B3 not gained.* *8 × 360 OR 16 × 360 M1* *24 24* * = 120(°) OR = 240(°) A1* *Correct drawing of 'their angle' F.T. A1* *(Possible M1A0A1 for incorrect calculation* *OR possible M1A1A0 for incorrect drawing)*
Correct labelling.	B1	For any diagram showing just two sectors with the largest sector labelled 'awake' and smallest sector labelled 'asleep'. Allow equivalent unambiguous labels or key BUT NOT just 120(°) and 240(°) or just 8(hr) and 16(hr).

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12. <u>A number 'n' is chosen.</u> 0·25 × n (or equivalent) OR 0·2 × n (or equivalent)	M1	
÷ 5 (or equivalent) OR ÷ 4 (or equivalent)	m1	For an **appropriate** 2nd step.

= <u>n</u>
   20   = <u>n</u>
       20
	A2	A1 for each correct value (C.A.O.). Dependent on both M1 and m1.

<u>If no number 'n' chosen.</u>
 •   1/5 of 25% = 5%   AND   1/4 of 20% = 5%
        with no further work
 	
 •   1/5 of 25% = 5   AND   1/4 of 20% = 5
          ISW
 	
 •   1/5 of 25% = 5%   OR   1/4 of 20% = 5%
         ISW
		Award
		SC4
		
		SC2
		
		SC1
		
		No marks for showing <u>just one</u> of the following.
		   1/5 of 25% = 5 OR 1/4 of 20% = 5

13.
      (ABC or BAC =) <u>180 – 76</u>
                 2
	M1	Angles may be shown on the diagram.

= 52(°)	A1	
(CBP = 180 – 52 =) or (CBP = 76 + 52 =) 128(°)	B1	F.T. 'their derived, stated or shown 52' BUT <u>not 76</u>.
14.(a) (m =) 9·6	B1	Mark final answer. Allow embedded answer. B1 for 9·6/2 or 9·6/2 = 4·8 with <u>no</u> further work. B0 for 9·6/2 followed by 'm ≠ 9·6'.
14.(b) −2	B1	B0 for −2n. Mark final answer.

15.   <u>All</u> possible numbers shown with no extras.
(11,12,13,14,21,22,23,24,31,32,33,34,41,42,43,44)
OR
   Clearly justifies that there are 16 possible
     numbers from 4 × 4 = 16
	B2	B1 for at least 10 correct and no more than 4 'extras'.
		10 + 1, 10 + 2, etc and <u>not</u> added gain no credit.

(Probability multiple of 7 =) <u>3</u> or equivalent. ISW 16	B2	F.T. 'their list' only if at least 6 numbers given which includes at least one multiple of seven. OR B1 for x/16 with x<16. B1 for 3/y with y >3. Penalise, −1, any incorrect notation e.g. '3 out of 16'. Unsupported 3/16 gains B0B2.

16.(a) (1 mile =) 8/5(km) or 1600(m) or equivalent	B1	For sight of a correct conversion e.g. 5 miles = 8 km , 1 km = 5/8 mile. Allow more accurate correct approximations (for all marks) only if in the range [1609(m) to 1610(m)]. No FT from an incorrect conversion.
(Difference =) $\dfrac{8 \times 1000 - 1 \cdot 5 \times 1000}{5}$	M1	Allow M1 for $\dfrac{8 - 1 \cdot 5 \ (= 0 \cdot 1)}{5}$ or equivalent.
100 (metres)	A1	Allow −100 (metres). If no marks gained then allow SC1 for sight of (1·5 × 5/8)
16.(b) 4×100^{2}	M1	Also for alternative correct methods e.g. (A 4x1 rectangle followed by) a 400×100 calculation, 200 × 200, etc.
= 40000	A1	
17. (Area of square =) 40·96(cm²) (Perp. height of triangle =) 4·3(cm)	B1 B1	May be seen on the diagram. Do not accept 4·3 as a 'slant height' <u>unless used correctly for M1.</u>
(Area of triangle =) $\dfrac{6 \cdot 4 \times 4 \cdot 3}{2}$	M1	F.T. 'their unambiguously stated 4·3'. (Not 10·7).
= 13·76(cm²)	A1	
(Area of ABCDE = 40·96 + 13·76 =) 54·72(cm²)	B1	F.T. from two derived areas. Allow 54·7 only if 54·72 seen. *Otherwise penalise **pre**-approximation −1 once only.*