

UNIT 2: CALCULATOR-ALLOWED, FOUNDATION TIER

GENERAL INSTRUCTIONS for MARKING GCSE Mathematics

1. The mark scheme should be applied precisely and no departure made from it. Marks should be awarded directly as indicated and no further subdivision made.

2. Marking Abbreviations

The following may be used in marking schemes or in the marking of scripts to indicate reasons for the marks awarded.

cao = correct answer only

MR = misread

PA = premature approximation

bod = benefit of doubt

oe = or equivalent

si = seen or implied

ISW = ignore subsequent working

F.T. = follow through (✓ indicates correct working following an error and ✗✗ indicates a further error has been made)

Anything given in brackets in the marking scheme is expected but, not required, to gain credit.

3. Premature Approximation

A candidate who approximates prematurely and then proceeds correctly to a final answer loses 1 mark as directed by the Principal Examiner.

4. Misreads

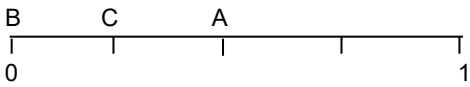
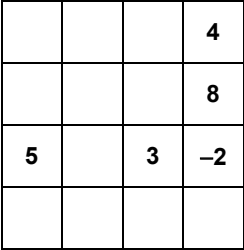
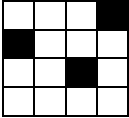
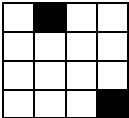
When the data of a question is misread in such a way as not to alter the aim or difficulty of a question, follow through the working and allot marks for the candidates' answers as on the scheme using the new data.

This is only applicable if a wrong value, is used consistently throughout a solution; if the correct value appears anywhere, the solution is not classed as MR (but may, of course, still earn other marks).

5. Marking codes

- 'M' marks are awarded for any correct method applied to appropriate working, even though a numerical error may be involved. Once earned they cannot be lost.
- 'm' marks are dependant method marks. They are only given if the relevant previous 'M' mark has been earned.
- 'A' marks are given for a numerically correct stage, for a correct result or for an answer lying within a specified range. They are only given if the relevant M/m mark has been earned either explicitly or by inference from the correct answer.
- 'B' marks are independent of method and are usually awarded for an accurate result or statement.
- 'S' marks are awarded for strategy
- 'E' marks are awarded for explanation
- 'U' marks are awarded for units
- 'P' marks are awarded for plotting points
- 'C' marks are awarded for drawing curves

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GCSE Mathematics Unit 2: Foundation Tier	Marks	Comments
1. (Profit =) $84 \times (£)5 - (£)120$ $= (£)300$	M1 A1 2	For correct substitution.
2. (a) Diameter (b) Tangent (c) Trapezium	B1 B1 B1 3	
3. (a)  (b) $\frac{7}{8}$	B3 B1 4	Accept names e.g. Wales (A), France (B), England (C) B1 for each. Accept C roughly between $\frac{1}{8}$ and $\frac{3}{8}$.
4. 	B3 3	For all five correct entries. B2 for three or four correct entries. B1 for two correct entries
5. (a) (i)  (ii)  (b) 2	B1 B1 B1 3	Only these three squares to be shaded. Only these two squares to be shaded. SC1 if reflections in <u>both</u> cases are correct but extra squares have been shaded.

GCSE Mathematics Unit 2: Foundation Tier	Marks	Comments
6.(a) Correct three-digit number shown. (i.e. sum of digits = 9) Correct answer for their three-digit number $\div 9$	B1 B1	The numbers should have the digits 1, 3, 5 or 2, 3, 4. F.T. their three-digit number correct to the nearest whole number or 1 or more decimal places. e.g. sight of $412 \div 9 = 45.7$ or 45.8 or 46 gains B0B1. SC1 for a correct evaluation if a three-digit multiple of 9 is used with a repeated digit. e.g. $441 \div 9 = 49$ gains SC1.
(b) Dylan is 18 Lois is 6	B2 4	B1 for 'their Dylan' = 'their Lois' + 12. B1 for 'their Dylan' = $3 \times$ 'their Lois'.
7.(a) (i) $(x=) 3$ (ii) $(x=) 4$ (b) $6 - 4 + 5$ $= 7$ (c) $(£)8n$	B1 B1 M1 A1 B1 5	 Sight of 6, 4 and 5. C.A.O.
8.(a) $(a =) 180 - 90 - 38$ or equivalent. $= 52^{(o)}$ (b) $(b =) 360 - 101 - 154$ or equivalent. $= 105^{(o)}$	M1 A1 M1 A1 4	
9. $\frac{10}{0.68}$ or equivalent. 14 (key rings) (Change =) $(£)10 - 14 \times (£)0.68$ or equivalent $= £0.48$ or 48p Organisation and communication Accuracy of writing	M1 A1 M1 A1 OC1 W1 6	Allow M1 for repeated addition if aiming for £10 C.A.O. $14 \cdot 7 \dots$ implies M1A0 F.T. 'their whole number of key-rings' Units must be given. Allow £0.48p
10. $360 - (46 + 117 + 34)$ $= 163^{(o)}$ $(x =) 17^{(o)}$	M1 A1 B1 3	F.T. $180 -$ 'their 163'.
11.(a) -9 (b) 12 (c) $3(n - 7)$	B1 B1 B1 3	
12. (Original mean =) 13 (New total =) 5×14 $= 70$ New number = 18	B1 M1 A1 B1 4	F.T. $5 \times$ 'their 13 + 1'. F.T. 'their <u>derived</u> new total' - 'their original total'.
13. $4 \times 4 \times 4$ $64 \text{ (cm}^3\text{)}$ $64 / (8 \times 4)$ or $32h=64$ 2 (cm)	M1 A1 M1 A1 4	<i>Alternative method:</i> 4×4 M1 $16 \text{ (cm}^2\text{)}$ A1 $16/8$ M1 2 (cm) A1

GCSE Mathematics Unit 2: Foundation Tier		Marks	Comments
14.	More girls in class B than in class A. Equal number of girls and boys in class B. Ratio of Girls : Boys = 3 : 1 in class A.	B1 B1 B1 3	
15.	$x + 2x + 3x = 180$ $x = 30$ Three angles are $30(^{\circ})$, $60(^{\circ})$, $90(^{\circ})$	M1 A1 A1 3	<i>SC1 for the answers of $30(^{\circ})$, $60(^{\circ})$ and $90(^{\circ})$ without forming an equation</i> <i>SC1 for the answers of $60(^{\circ})$, $120(^{\circ})$ and $180(^{\circ})$ from equating to 360</i>
16.(a)	All 13 numbers placed correctly and no extra.	B4	B3 for 10,11 or 12 correct OR all correct but omission of numbers outside $A \cup B$. B2 for 8 or 9 correct. B1 for 6 or 7 correct. <i>Any duplicates are marked as incorrect.</i>
(b)	$\frac{4}{13}$	B2 6	F.T. 'their diagram'. B1 for a numerator of 4 OR a denominator of 13 in a fraction less than 1.
17.	$4 \cdot 38$	B2 2	B1 for $4 \cdot 37(7 \dots)$
18.	<u>Clockwise rotation of 90° about the origin.</u>	B3 3	For all four components. B2 for any three, B1 for any two. (Penalise ' $\frac{1}{4}$ turn' –1 only.)