

**UNIT 1: NON-CALCULATOR, INTERMEDIATE 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

UNIT 1: NON-CALCULATOR, INTERMEDIATE TIER

GCSE Mathematics Unit 1: Intermediate Tier	Mark	Comments																		
1. (a) 200 (b) 0·18 (c) 3·45 (d) Correctly using common denominator. 5/8 or equivalent.	B2 B1 B1 M1 A1 6	B1 for sight of 25 or 8 M1 for $0\cdot875 - 0\cdot25$ A1 for 0·625																		
2. (a) 2 and -7 (b) $2x - 3y$ (c) $\frac{26 - 7 \times 2}{3} = E$ $(E =) 4$	B2 B2 B1 B1 6	B1 for 2 Must be in an expression for B2 B1 for $2x$ or $-3y$																		
3. (a) 120 cm ² (b) 20° (c) 30 m ³	B1 B1 B1 3																			
4. Afraz is 8, Beti is 16 and Huw is 13.	B2 2	B1 for ' x , $2x$ and $2x-3$ ' but total $\neq 37$ B1 for 'total = 37' but not ' x , $2x$ and $2x-3$ '																		
5. <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>(+)</td><td>6</td><td>(+)</td><td>3</td><td>0</td><td>(-)</td><td>3</td><td>(-)</td><td>6</td></tr><tr><td>-</td><td>6</td><td>-</td><td>3</td><td>0</td><td>(+)</td><td>3</td><td>(+)</td><td>6</td></tr></table> (Probability > 0) = 4/10 or equivalent. $\frac{4}{10} \times 70$ $= 28 \text{ (people)}$	(+)	6	(+)	3	0	(-)	3	(-)	6	-	6	-	3	0	(+)	3	(+)	6	B2 B2 M1 A1 6	For 6 correct entries otherwise, B1 for the two zeros OR B1 for the (+)6 AND (+)3. F.T. their table B1 for a numerator of 4 OR a denominator of 10 in a fraction less than 1 F.T. 'their 4/10'
(+)	6	(+)	3	0	(-)	3	(-)	6												
-	6	-	3	0	(+)	3	(+)	6												
6. (a) $7x - 2x = 11 + 4$ $5x = 15$ $x = 3$ (b) $6x + 21 = 9$ OR $2x + 7 = 3$ $6x = -12$ OR $2x = -4$ $x = -2$	B1 B1 B1 B1 B1 B1 6	F.T. until 2 nd error F.T. until 2 nd error																		
7. (a) False AND a counter example given. (b) True AND a statement that refers to both 'one of the numbers will be even' and 'any integer multiplied an even number will result in another even number.'	E1 E2 3	Accept any equivalent intention to refer to both facts E1 for reference to one of the two facts																		

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8. Appropriate sight of 90° Appropriate sight of 45° or $90/2$ $x = 135^{\circ}$ Organisation and communication Accuracy of writing	B1 B1 B1 OC1 W1 5	Implies 1 st B1 F.T. only from a clearly identifiable angle LNM
9. 3, 6, 7, 8 OR 4, 5, 6, 9	B2 2	B1 for sum of four selected numbers = 24 OR range of four selected numbers = 5
10. (a) $1 - (0.45 + 0.1 + 0.25)$ $= 0.2$ (b) $0.1 + 0.25$ $= 0.35$ (c) 0.1×0.25 $= 0.025$	M1 A1 M1 A1 M1 A1 6	
11. (a) -4 (b) Six correct plots. Curve drawn. (c) Correct solutions <u>from their graph</u> . (d) Line $y = -3$ drawn Correct roots <u>from their graphs</u> .	B1 B1 B1 B1 B2 B1 7	F.T. 'their $(2, -4)$ '. F.T. 'their plots'. Answers should be accurate to within 1 small square. B1 for sight of $x^2 - 3x - 2 = -3$ or $y = -3$ F.T. if a straight line is drawn that intersects their curve twice. Answers should be accurate to within 1 small square.
12. (a) Correct construction of 60° . Correct bisector of 60° . (b) Exterior angle = 45° (Number of sides =) $\frac{360}{45} = 8$ (c) $\begin{pmatrix} 8 \\ -2 \end{pmatrix}$	B2 B1 B1 M1 A1 B1 7	With sight of accurate 'method arcs' B1 for sight of 'method arcs' but not drawn accurately F.T. 'their 60° '. With sight of accurate 'method arcs' Penalise -1 if not drawn in correct position B1 A1 B1 7
13. (a) $(\text{£})250$ (b) $\frac{(\text{£})63 \times 100}{105} \text{ or equivalent e.g. } 63 \div 1.05 = (\text{£})60$	B2 M1 A1 4	B1 for sight of $(\text{£})400/8$ or $(\text{£})50$
14. (a) $1/8$ (b) $0.2222\dots$ (c) 1	B1 B1 B1 3	

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15. (a) 0·2 AND 0·16 (b) Suitable uniform scale AND correct plots. (c) 0·16 AND e.g. 'because calculated from the greatest number of throws'. (d) Yes AND e.g. 'because 0·16 (or 80/500) is close to 1/6.'	B1 B1 B1 B1 4	F.T 'their 0·2 and 0·16' F.T 'their 0·16' F.T 'their 0·16'
16. (a) $1\cdot23 \times 10^{-1}$ (b) 5×10^{-4}	B2 B2 4	B1 for a correct value not in standard form. e.g. $12\cdot3 \times 10^{-2}$ B1 for a correct value not in standard form. e.g. $0\cdot5 \times 10^{-3}$
17. $n^2 + 3$ or equivalent.	B2 2	B1 for $n^2 \pm \dots$ (not for n^2)
18. (a) $(x =) 118^\circ$ 'Opposite angles of a cyclic quadrilateral' (b) $(y =) 236^\circ$ 'Angle at the centre is twice the angle at the circumference'	B1 E1 B1 E1 4	If using 118° . F.T. 'their $118^\circ \times 2$ <i>If using 62° to find 124°, then 'angle at a point' also needs to be stated</i>