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

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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 0·875 – 0·25 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><tr><td>**(+)6**</td><td>**(+)3**</td><td>**0**</td><td>(–3)</td><td>(–6)</td></tr><tr><td>**–6**</td><td>**–3**</td><td>**0**</td><td>(+3)</td><td>(+6)</td></tr></table> (Probability > 0 =) 4/10 or equivalent. 4/10 × 70 =28 (people)	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. (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 2nd error F.T. until 2nd 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 $90^{(\circ)}$ Appropriate sight of $45^{(\circ)}$ or 90/2 $x = 135^{(\circ)}$ Organisation and communication Accuracy of writing	B1 B1 B1 OC1 W1 5	 Implies 1st 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) $1 - (0{\cdot}45 + 0{\cdot}1 + 0{\cdot}25)$ $= 0{\cdot}2$ (b) $0{\cdot}1 + 0{\cdot}25$ $= 0{\cdot}35$ (c) $0{\cdot}1 \times 0{\cdot}25$ $= 0{\cdot}025$	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 = $45^{(\circ)}$ (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
13. (a) (£)250 (b) $\frac{(£)63 \times 100}{105}$ or equivalent e.g. $63 \div 1{\cdot}05$ $= (£)60$	B2 M1 A1 4	B1 for sight of (£)400/8 or (£)50
14. (a) 1/8 (b) 0·2222…. (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) $1{\cdot}23 \times 10^{-1}$ (b) 5×10^{-4}	B2 B2 4	B1 for a correct value not in standard form. e.g. $12{\cdot}3 \times 10^{-2}$ B1 for a correct value not in standard form. e.g. $0{\cdot}5 \times 10^{-3}$
17. $n^2 + 3$ or equivalent.	B2 2	B1 for $n^2 \pm \ldots\ldots$ (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'×2 *If using 62° to find 124°, then 'angle at a point' also needs to be stated*