

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 $0.875 - 0.25$ 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 border="1" style="display: inline-table; vertical-align: middle;"><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. $4/10 \times 70$ =28 (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 $90^{(o)}$ Appropriate sight of $45^{(o)}$ or $90/2$ $x = 135^{(o)}$ Organisation and communication Accuracy of writing	B1 B1 B1 OC1 W1 5	Implies 1 st B1 F.T. only from a clearly identifiable angle <i>LNM</i>
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 = $45^{(o)}$ (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) $\frac{(\pounds)63 \times 100}{105}$ or equivalent e.g. $63 \div 1.05$ $= (\pounds)60$	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) 1.23×10^{-1} (b) 5×10^{-4}	B2 B2 4	B1 for a correct value not in standard form. e.g. 12.3×10^{-2} B1 for a correct value not in standard form. e.g. 0.5×10^{-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>