

Delta 3 – Unit 2 Revision Answers

Q1.

Question	Working	Answer	Mark	Notes
(a)		66	B1	cao
(b)		77	B1	cao

Q2.

Question	Working	Answer	Mark	Notes
(a)		$n^2 + 2n$	3	M1 correct deduction from differences, e.g. 2 nd difference of 2 implies $1n^2$ or $1^2, 2^2, 3^2$ M1 $1^2, 2^2, 3^2$ linked with 2, 4, 6 A1 $n^2 + 2n$ oe
(b)		Explanation	1	C1 explanation that 31 is not a power of 2

Q3.

Paper 1MA1: 2H			
Question	Working	Answer	Notes
		$n^2 - n + 1$ oe	M1 for correct deduction from differences, eg. 2 nd difference of 2 implies $1n^2$ or sight of $1^2, 2^2, 3^2$, .. M1 for sight of $1^2, 2^2, 3^2$, .. linked with 1, 2, 3, ... A1 for $n^2 - n + 1$ oe

Q4.

	Working	Answer	Mark	Notes
	$4x - 3 = 2x + 2y$ $2x - 3 = 2y$ $2x = 2y + 3$ $x = y + 1.5$	$x = y + 1.5$	3	M1 for attempt to expand brackets eg $2 \times x + 2 \times y$ or divide through by 2 (each term). M1 for attempt to get x on one side of equation. A1 for $(x =) y + 1.5, 2y + 3/2$, oe

Q5.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	$10x^2 - 11x - 6$	M1 A1	for 3 out of no more than 4 terms correct with correct signs or 4 correct terms ignoring signs cao	$10x^2 - 15x + 4x - 6$ NB: $10x^2 - 11x$ and $-11x - 6$ are indicative of 3 correct terms.
(b)	$(x + 1)(x + 3)$	M1 A1	for $(x \pm 1)(x \pm 3)$ or for $(x + a)(x + b)$ where either $ab = 3$ or $a + b = 4$ cao	

Q6.

Question	Working	Answer	Mark	Notes
(a)		$12x + 20$	1	B1 cao
(b)		$5x + 7$	2	M1 for $2 \times x - 2 \times 4$ or $3 \times x + 3 \times 5$ A1 cao
(c)		$x^2 + 10x + 24$	2	B2 cao (B1 for 4 correct terms with or without signs, or 3 out of no more than 4 terms, with correct signs. The terms may be in an expression or in a table)

Q7.

Paper 1MA1: 3F			
Question	Working	Answer	Notes
		$(x - 1)(x + 4)$	M1 $(x \pm 1)(x \pm 4)$ A1 $(x - 1)(x + 4)$ oe

Q8.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		$(x+4)(x-4)$	B1 for $(x+4)(x-4)$

Q9.

Paper 1MA1: 3H			
Question	Working	Answer	Notes
		$(x - 1)(x + 4)$	M1 $(x \pm 1)(x \pm 4)$ A1 $(x - 1)(x + 4)$ oe

Q10.

PAPER: 5MB3H_01				
Question	Working	Answer	Mark	Notes
(a)		5 and -7	3	M1 for $(x \pm 5)(x \pm 7)$ M1 for $(x - 5)(x + 7)$ A1 cao OR M1 for correct substitution into formula M1 for reduction to $\frac{-2 \pm \sqrt{144}}{2}$ A1 cao
(b)		$\pm\sqrt{3}$	4	M1 for multiplying through by a common denominator eg by $(x + 1)(2x + 3)$ M1 (dep) for reduction eg to $4x + 6 + x^2 + x$ or $2x^2 + 3x + 2x + 3$ M1 for $x^2 - 3 (= 0)$ A1 cao for both answers; accept decimals to at least 2 dp

Q11.

Question	Working	Answer	Mark	Notes
		$x = -8, x = 3$	M1	for factorisation or for substitution into quadratic formula $(x \pm a)(x \pm b)$ where product of a and $b = 24$, eg $(x \pm 4)(x \pm 6)$ or difference of a and $b = 5$, eg $(x \pm 2)(x \pm 7)$ $\frac{-5 \pm \sqrt{5^2 - 4 \times 1 \times -24}}{2}$ oe (condone one sign error)
			M1	for $(x + 8)(x - 3)$ or for $\frac{-5 \pm \sqrt{121}}{2}$ oe
			A1	cao

Q12.

		Working	Answer	Mark	Notes
			0.5, -3	3	M1 for $(2x \pm 1)(x \pm 3)$ M1 for $(2x - 1)(x + 3)$ A1 cao OR M1 for $\frac{-5 \pm \sqrt{5^2 - 4 \times 2 \times -3}}{2 \times 2}$ allow sub. of c $= \pm 3$ M1 for $\frac{-5 \pm \sqrt{49}}{4}$ A1 cao NB: any other method put in review.