

Delta 3 - Unit 1 Revision Answers

Q1.

Question	Working	Answer	Mark	Notes
(a)		3^7	M1 A1	for a first step using a rule of indices, e.g. $3^5 \times 3^4 = 3^{5+4} (= 3^9)$ or $3^5 \div 3^2 = 3^{5-2} (= 3^3)$ or $3^4 \div 3^2 = 3^{4-2} (= 3^2)$ cao
(b)		1	B1	cao
(c)		$\frac{1}{9}$	B1	for $\frac{1}{9}$ (or 0.11...)

Q2.

PAPER: 1MA0_1H					
Question	Working	Answer	Mark	Notes	
(a)		$\frac{1}{5}$	1	B1 oe	
(b)		$\frac{1}{9}$	1	B1 cao	
(c)	$9 \times 10^4 \times 3 \times 10^3$	2.7×10^8	2	M1 27×10^7 oe or $9 \times 3 \times 10^{4+3}$ A1 cao	

Q3.

Paper 1MA1: 1H			
Question	Working	Answer	Notes
		25	B1 cao

Q4.

Question	Working	Answer	Mark	Notes
		8×10^4	B1	cao

Q5.

Question		Working	Answer	Mark	Notes
			$\frac{1}{16}$	1	cao

Q6.

Question		Working	Answer	Mark	Notes
	(a)		6.4×10^8	1	B1 cao
	(b)		5×10^2	2	M1 for $3 \div 6 \times 10^{7-4}$ or 0.5×10^3 or 500 or 30 000 000 +60 000 A1 cao

Q7.

PAPER: 1MA0 2H					
Question		Working	Answer	Mark	Notes
	(a)		0.00078	1	B1 cao
	(b)		9.56×10^7	1	B1 cao

Q8.

Paper 1MA1: 1H				
Question		Working	Answer	Notes
	(a)		8	B1
	(b)		$\frac{25}{4}$ oe	M1 for correct first step A1

Q9.

Question	Answer	Mark	Mark scheme	Additional guidance
	5	M1	for $\sqrt{40}$ or $\sqrt{90}$	
			OR $2\sqrt{2}$ or $3\sqrt{2}$	
		M1	for $2\sqrt{10}$ or $3\sqrt{10}$ or $\sqrt{4} \times \sqrt{10}$ or $\sqrt{9} \times \sqrt{10}$ or $\sqrt{4 \times 10}$ or $\sqrt{9 \times 10}$	
			OR $2\sqrt{2} + 3\sqrt{2}$	
		A1	cao	Answer of $5\sqrt{10}$ from correct working gets M2 A0

Q10.

PAPER: 5MB2H_01					
Question	Working	Answer	Mark	Notes	
		$30 - 10\sqrt{5}$	2	M1	for 4 terms correct with or without signs or 3 out of exactly 4 terms correct (the terms may be in an expression or table)
					or $25 - 10\sqrt{5} + 5$
				A1	cao

Q11.

Question	Working	Answer	Mark	Notes
		$2\sqrt{5}$	2	M1 for multiplication of denominator and numerator by $\sqrt{5}$
				A1 cao

Q12.

Question	Working	Answer	Mark	Notes
(a)	$5\sqrt{9 \times 3}$	$15\sqrt{3}$	2	M1 for sight of $\sqrt{9 \times 3}$ or $\sqrt{9} \sqrt{3}$ or $3\sqrt{3}$
				A1 for $15\sqrt{3}$ (accept $n = 15$)
(b)		$7\sqrt{3}$	2	M1 for $\frac{21\sqrt{3}}{\sqrt{3}\sqrt{3}}$
				A1 for $7\sqrt{3}$ (accept $\frac{21\sqrt{3}}{3}$)

Q13.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	$3\sqrt{3}$	M1	for working unambiguously with $\sqrt{12}$, eg $\sqrt{4 \times 3}$ or $\sqrt{4} \times \sqrt{3}$ or $2\sqrt{3}$	May be seen as the first step
		A1	cao	
(b)	$\frac{\sqrt{3}}{81}$	M1	for simplifying the power eg $(\sqrt{3})^7 = 27\sqrt{3}$	
		M1	for method to rationalise the denominator eg multiplying by $\frac{\sqrt{3}}{\sqrt{3}}$	
		A1	for $\frac{\sqrt{3}}{81}$ or equivalent fraction in form $\frac{\sqrt{b}}{c}$, eg $\frac{\sqrt{2187}}{2187}$	

Q14.

5MB2H November 2016					
Question	Working	Answer	Mark	Notes	Type
	$\frac{(\sqrt{5}+\sqrt{5}+6)}{2} \times (\sqrt{5} - 2)$ $(\sqrt{5} + 3)(\sqrt{5} - 2)$ $5 + 3\sqrt{5} - 2\sqrt{5} - 6$ $\sqrt{5}(\sqrt{5} - 2) + \frac{6(\sqrt{5}-2)}{2}$ $5 - 2\sqrt{5} + 3\sqrt{5} - 6$	$\sqrt{5} - 1$	3	M1 for $\frac{(\sqrt{5}+\sqrt{5}+6)}{2} \times (\sqrt{5} - 2)$ M1 for expansion $5 + 3\sqrt{5} - 2\sqrt{5} - 6$ with 3 terms out of 4 correct including signs or all 4 terms correct ignoring signs A1 cao OR M1 for $\sqrt{5}(\sqrt{5} - 2) + \frac{6(\sqrt{5}-2)}{2}$ M1 for expansion $5 - 2\sqrt{5} + 3\sqrt{5} - 6$ with 3 terms out of 4 correct including signs or all 4 terms correct ignoring signs A1 cao	E