1(a)	64	B1	accept 4^3
	Additional Guidance		
	4^3 and incorrect value given eg $4^3 = 32$		B0

Q	Answer	Mark	Comments
2	$\frac{16}{81}$	B1	

Q	Answer	Mark	Comments
3	(8th term =) 2^8 or 256	M1	oe may be implied
	Common difference of A indicated as 3	M1	may be implied eg $3n$ … or … + $3(n-1)$
	$3n + 10$ = their 256 or (their 256 – 10) ÷ 3 or (their 256 – 13) ÷ 3 or 81	M1dep	oe equation eg $13 + 3(n-1) = 2^8$ dep on 2nd M1 their 256 may be any number and may be in index form
	82	A1	
	Additional Guidance		
	$n + 3$ implies 2nd M1		
	Do not award M1 for 256 if it is in a list of powers of 2 unless it is indicated or it is the highest power evaluated		
	Common difference of 3 may be shown on the progression for the 2nd M1		
	10, (13, 16, 19, 22), 25 without common difference of 3 shown does not imply 2nd M1		
	82 from trial and improvement		M3A1
	Embedded answer $3 \times 82 + 10 = 256$		M3A0
	$3n + 10 = 256$ or $3n + 10 = 2^8$ or $3n = 246$		M1M1M1
	$3n - 10 = 256$		M1M1M0
	$3n + 10 = 16$ (2^8 not seen)		M0M1M1
	$3n + 6 = 2^8$		M1M1M0
	256 – 22 = 234, 234 ÷ 3 (indicating common difference of 3)		M1M1M0
	$3n - 8 = 128$ (2^8 not seen)		M0M1M0

Q	Answer	Mark	Comments
4(a)	$\frac{25}{16}$ or $1\frac{9}{16}$	B1	oe with no surds or indices
	Additional Guidance		
	Ignore an incorrect conversion of $\frac{25}{16}$ to a mixed number		
	$\frac{5\sqrt{5}\sqrt{5}}{16}$ or $\frac{5^2}{16}$	B0	

Q	Answer	Mark	Comments
4(b)	$4 + 2\sqrt{3} + 2\sqrt{3} + (\sqrt{3})^2$ or $4 + 4\sqrt{3} + (\sqrt{3})^2$ or $7 + 4\sqrt{3}$	M1	oe 4 terms with at least 3 correct or 3 terms with 2 correct including $4\sqrt{3}$ terms may be seen in a grid
	$7 \times 2 + 7\sqrt{3} + 2 \times 4\sqrt{3} + 4\sqrt{3} \times \sqrt{3}$ or $8 + 8\sqrt{3} + 6 + 4\sqrt{3} + 4 \times 3 + 3\sqrt{3}$ or $14 + 7\sqrt{3} + 8\sqrt{3} + 12$ or $8 + 4\sqrt{3} + 4\sqrt{3} + 6 + 4\sqrt{3} + 6 + 6 + 3\sqrt{3}$	M1dep	oe full expansion with correct multiplication of their 2, 3 or 4 terms by $(2 + \sqrt{3})$ terms may be seen in a grid
	$8 + 4\sqrt{3} + 4\sqrt{3} + 6 + 4\sqrt{3} + 6 + 6 + 3\sqrt{3}$ and $26 + 15\sqrt{3}$ **or** $14 + 7\sqrt{3} + 8\sqrt{3} + 12$ and $26 + 15\sqrt{3}$	A1	oe with full expansion terms may be seen in a grid condone $15\sqrt{3} + 26$
	Additional Guidance		
	Remember that the answer is given in the question		
	3 may be seen as $(\sqrt{3})^2$ for M1 only		
	Condone missing brackets if multiplications are correct		