Question	Answer	Marks	Partial Marks
8(b)	$\int \frac{3}{2x-3}+\frac{3}{2x+3}\,\mathrm{d}x$ $=\frac{3}{2}\ln(2x-3)+\frac{3}{2}\ln(2x+3)$	**B2**	B1 for each correct term, having made use of (a)
	$\frac{3}{2}\ln\left(4x^2-9\right)+c$ or $\frac{3}{2}\ln\left((2x-3)(2x+3)\right)+c$ or $\ln\left(4x^2-9\right)^{\frac{3}{2}}+c$	**B1**	
8(c)	$\ln\left(4a^2-9\right)^{\frac{3}{2}}-\ln 7^{\frac{3}{2}}=\ln 5^{\frac{3}{2}}$	**M1**	For correct application of limits, allow equivalent forms
	$4a^2-9=35$	**A1**	For a correct method of dealing with logarithms and eliminating them
	$a=\sqrt{11}$	**M1**	For solving a quadratic equation, dep on first M mark
		A1	
9(a)	Second term: $a+d=-14$	**B1**	
	Sum: $4=a+10d$	**B1**	
	$d=2$	**B1**	
	$a=-16$	**B1**	
	Last term = 24	**B1**	Ft on *their d* and *their a*
9(b)(i)	$ar=27p^2$ $ar^4=p^5$	**B1**	For both equations
	$r=\frac{p}{3}$	**B1**	
9(b)(ii)	$a=81p$	**M1**	M1 for attempt to find a in terms of p
		A1	
	$S_\infty=\frac{81p}{1-\frac{p}{3}}$ or $\frac{243p}{3-p}$	**B1**	Follow through on *their a* and *their r*

Question	Answer	Marks	Partial Marks
9(b)(iii)	$81=\dfrac{81p}{1-\dfrac{p}{3}}$ or $81=\dfrac{243p}{3-p}$	**M1**	For attempt to solve using *their* answer to (ii) as far as p = …
	$p=\dfrac{3}{4}$	**A1**	
10(a)(i)	$\dfrac{(\sec\theta+1)-(\sec\theta-1)}{\sec^2\theta-1}$	**M1**	For dealing with the fractions
	$\dfrac{2}{\tan^2\theta}$	**M1**	For use of the correct identity
	$2\cot^2\theta$	**A1**	A1 for given answer, must see $\dfrac{8}{\tan^2\theta}$ first
10(a)(ii)	$2\cot^2 2x=6$ $\tan 2x=\pm\dfrac{1}{\sqrt{3}}$	**M1**	M1 for use of (i) and attempt to simplify
		A1	
		M1	M1 for attempt to solve, may be implied by one correct solution
	$2x=-150^\circ,\ -30^\circ,\ 30^\circ,\ 150^\circ$ $x=-75^\circ,\ -15^\circ,\ 15^\circ,\ 75^\circ$	**A2**	A1 for each pair of correct solutions
10(b)	$\sin\left(y+\dfrac{\pi}{3}\right)=\dfrac{1}{2}$	**M1**	For dealing with cosec and an attempt to solve
	$y+\dfrac{\pi}{3}=\dfrac{5\pi}{6},\ \dfrac{13\pi}{6}$	**M1**	M1 for a complete method of solution, may be implied by a correct solution
	$y=\dfrac{\pi}{2}$	**A1**	
	$y=\dfrac{11\pi}{6}$	**A1**	

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