Question	Answer	Marks	Guidance
9(b)(i)	Common ratio = $4\sin^2\phi$	**B1**	
	$1+4\sin^2\phi=4$	**M1**	For use of $1+$*their* $r=4$
	$\sin\phi=\pm\frac{\sqrt{3}}{2}$ $\phi=\pm\frac{\pi}{3}$	**2**	**M1** for a correct attempt to solve *their* $\sin\phi=\pm\frac{\sqrt{3}}{2}$ to obtain at least one solution.
9(b)(ii)	Common ratio = 3 soi	**M1**	For attempt to find numerical value of *their* common ratio.
	$3>1$ so no sum to infinity [as $-1<r<1$ to have a sum to infinity.] oe	**A1**	Must have correct common ratio.
10(a)	$\frac{(x-4)\left(\frac{1}{2}\times 6x\left(3x^2-2\right)^{-\frac{1}{2}}\right)-\left(3x^2-2\right)^{\frac{1}{2}}}{(x-4)^2}$	**3**	**B1** for $\frac{1}{2}\times 6x\left(3x^2-2\right)^{-\frac{1}{2}}$, allow unsimplified. **M1** for a correct attempt to differentiate a quotient. **A1** for all other terms correct.
	$\frac{\left(3x^2-2\right)^{-\frac{1}{2}}}{(x-4)^2}\left(3x(x-4)-\left(3x^2-2\right)\right)$	**M1**	For a correct attempt to simplify to obtain the given form.
	$\frac{-12x+2}{\sqrt{3x^2-2}(x-4)^2}$	**A1**	
10(b)	When $x=3$, $\frac{dy}{dx}=\frac{-36+2}{5}$	**M1**	For attempt using *their* $\frac{dy}{dx}$
	$-6.8h$	**2**	**Dep M1** for attempt at small changes using their -6.8. **A1** cao