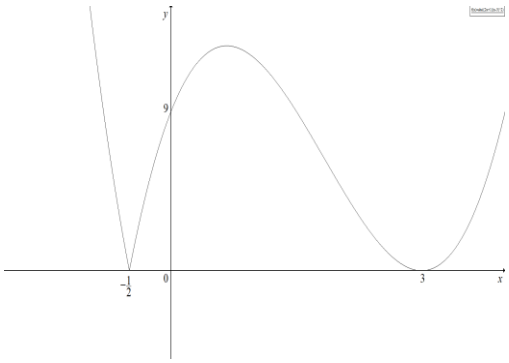
Question	Answer	Marks	Guidance
9(b)		**4**	**B1** for correct shape with maximum in the first quadrant **B1** for $\left(-\frac{1}{2},\ 0\right)$ and $(3,\ 0)$ with a $\lvert$cubic curve$\rvert$ with one max only **B1** for $(0,\ 9)$ with a $\lvert$cubic curve$\rvert$ with one max only **B1** All correct with a cusp at $x=-\frac{1}{2}$ and a minimum at $x=3$
9(c)	$\frac{343}{27}$	**B1**	**FT** on *their* answer from **(a)**
10(a)(i)	$2+(n-1)0.5=16$ oe	**M1**	For use of $a+(n-1)d$
	$n=29$	**A1**	
10(a)(ii)	$\frac{8}{2}(2(2)+7(0.5))$	**M1**	For use of sum formula, may be implied if distances have been multiplied by 5 first.
	$\frac{8}{2}(2(2)+7(0.5))\times 5$	**M1**	For multiplication by 5
	150 (km)	**A1**	
10(b)(i)	$r=1.25$ oe	**B1**	
10(b)(ii)	$2(1.25)^{n-1}>16$ or $2(1.25)^{n-1}=16$	**M1**	For use of ar^{n-1}
	$n-1>\frac{\ln 8}{\ln 1.25}$ or $n-1=\frac{\ln 8}{\ln 1.25}$	**M1**	**Dep** for correct method of solution to obtain $n-1$
	11	**A1**	
10(b)(iii)	$\frac{2(1.25^8-1)}{1.25-1}$	**M1**	For use of sum formula may be implied by multiplication by 5
	$\frac{2(1.25^8-1)}{1.25-1}\times 5$	**M1**	For multiplication by 5
	198 (km)	**A1**	Allow greater accuracy

Question	Answer	Marks	Guidance
11(a)	$3\cot^2\theta - 5\cot\theta - 2 = 0$	**M1**	For use of correct identity and simplification to a 3 term quadratic equated to zero.
	$\tan\theta = -3,\ \tan\theta = \frac{1}{2}$	**M1**	**Dep** for solution of quadratic and dealing with cot
	108.4^o	**A1**	
	26.6^o	**A1**	
11(b)	$\phi + \frac{\pi}{3} = -\frac{\pi}{6}$	**M1**	For a correct order of operations
	$\phi = -\frac{\pi}{2}$	**A1**	
	$\phi + \frac{\pi}{3} = \frac{7\pi}{6}$	**M1**	For a correct order of operations
	$\phi = \frac{5\pi}{6}$	**A1**	