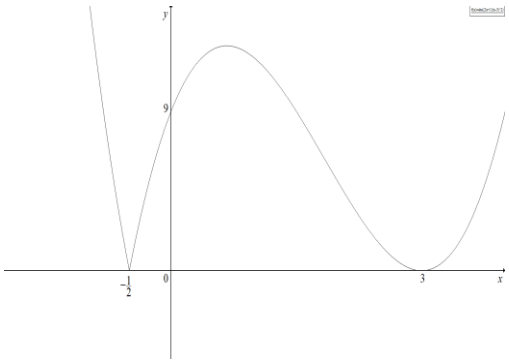
Question	Answer	Marks	Guidance
7(b)	$b = 192a$	**B1**	May be implied by the term in x
	$c = 240a^2$	**B1**	May be implied by the term in x^2
	$\frac{c}{240} = \frac{b^2}{192^2}$	**M1**	For elimination of a
	$5b^2 = 768c$	**A1**	For correct manipulation to verify the given answer
7(c)	$a = \frac{1}{16}$	**B1**	
	$c = \frac{15}{16}$	**B1**	
8(a)	$\sin\frac{AOC}{2} = \frac{3}{5}$ or $6^2 = 5^2 + 5^2 - (2\times5\times5)\cos AOC$	**M1**	For a complete method to find AOC
	$AOC = 1.2870$ $AOC = 1.287$	**A1**	**AG** Must see $AOC = 1.2870$ or better before rounding for **A1**
8(b)	Arc length = 1.287×5	**B1**	
	Perimeter = 32.4	**B1**	
8(c)	Sector area = $\frac{1}{2}\times5^2\times1.287$	**B1**	
	Area of triangle = $\frac{1}{2}\times5^2\times\sin1.287$	**B1**	
	Total area = 28.1	**B1**	
9(a)	$\frac{dy}{dx} = 2(2x+1)(x-3) + 2(x-3)^2$ or $\frac{dy}{dx} = 6x^2 - 22x + 12$	**M1**	For differentiation of a quotient, or expansion and subsequent differentiation
	$0 = 2(x-3)(3x-2)$	**M1**	**Dep** for simplification, equating to zero and attempt to solve
	$(3, 0)$	**A1**	
	$\left(\frac{2}{3}, \frac{343}{27}\right)$	**A1**	

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