9	**(a)**		$Ax^{-\frac{1}{2}}$	**M1**	**1.1**		
			$(+/-)\ Bx^{\frac{1}{2}}$	**M1**	**1.1**		
			$\frac{12}{\sqrt{x}} - 12\sqrt{x}$	**A1**	**1.1**	allow equivalent in index form, but coefficients must be 12 and – 12	Accept mixed, eg $12x^{-0.5} - 12\sqrt{x}$
				[3]			

Question			Answer	Marks	AOs	Guidance	
9	(b)		their $\frac{dy}{dx} = 0$ seen $x = 1$ $y = 32$	M1 A1 A1 [3]	3.1a 1.1 1.1		
9	(c)		their 1 substituted in their $\frac{d^2y}{dx^2}$ $= -12$ so (1, 32) is a (local) maximum	M1 A1 [2]	3.1a 3.2a	NB $-6x^{-\frac{3}{2}} - 6x^{-\frac{1}{2}}$ allow explanation that for $x > 0$ both terms in 2nd derivative are negative so must be a local maximum; 2nd derivative must be correct for this approach	Alternatively, substitution of their $1 \pm \delta$ in their $\frac{dy}{dx}$ (either) Correct values obtained for $\frac{dy}{dx}$ and correct conlusion made