Question	Answer	Marks	Partial Marks
10(a)(i)	$v = 3t^2 + c$	**M1**	
	$v = 3t^2 - 1$	**A1**	
	When $t = 3$ $v = 26$	**A1**	
10(a)(ii)	$s = t^3 - t + c$	**M1**	**FT** $kt^2 + c$
	$s = t^3 - t - 4$	**A1**	
	When $t = 3$ $s = 20$	**A1**	
10(b)	$v = \frac{-18e^3}{e^t} + c$ oe	**M1**	
	$v = \frac{-18e^3}{e^t} + 44$ oe	**A1**	**FT** (*their* 26) + 18
	$s = \frac{18e^3}{e^t} + their\,44t + d$ oe	**M1**	**dep** on previous **M1**
	$s = \frac{18e^3}{e^t} + 44t - 130$ oe, cao	**A1**	

Question	Answer	Marks	Partial Marks
11	Solves $\sin(4x-\pi)=0$ oe	**M1**	
	$a=\frac{3\pi}{4}$	**A1**	
	$\frac{dy}{dx}=4\cos(4x-\pi)$	**B2**	**B1** for $\frac{dy}{dx}=k\cos(4x-\pi)$, where $k>0$ or $k=-4$
	$\left[\frac{-1}{4\cos(4\times their\frac{3\pi}{4}-\pi)}=\right]-\frac{1}{4}$	**B2**	**FT** *their* $a=\frac{n\pi}{4}$, n is a positive integer **B1** for $\frac{-1}{their k\cos(4\times their\frac{3\pi}{4}-\pi)}$
	$y-0=-\frac{1}{4}\left(x-\frac{3\pi}{4}\right)$ or $0=-\frac{1}{4}\left(\frac{3\pi}{4}\right)+c$ oe	**M1**	**FT** *their* perpendicular gradient and *their a*
	$B\left(0,\frac{3\pi}{16}\right)$ soi	**B1**	
	[Exact area =] $\frac{9\pi^2}{128}$	**B1**	