Question	Answer	Marks	Guidance
6	$\frac{dy}{dx} = 3\sec^2 3x$	**2**	**M1** for $a\sec^2 3x$
	When $x = \frac{\pi}{12}$, $y = 2$	**B1**	
	When $x = \frac{\pi}{12}$, $\frac{dy}{dx} = 6$	**M1**	
	Gradient of perpendicular is $-\frac{1}{6}$	**M1**	For $-\frac{1}{their\ \frac{dy}{dx}}$, must be numeric
	Equation of normal $y - 2 = -\frac{1}{6}\left(x - \frac{\pi}{12}\right)$	**M1**	For attempt at a normal equation using *their* $-\frac{1}{6}$ and 2
	Area of triangle = 12	**2**	**M1 dep** for attempt at correct area using *their* 2 and *their* $12 + \frac{\pi}{12}$
7	$-\frac{1}{2}(2-3x)^{\frac{2}{3}}$	**2**	**M1** for $a(2-3x)^{\frac{2}{3}}$, $a \neq -\frac{1}{2}$ Allow unsimplified
	When $x = -2$, $\frac{dy}{dx} = -6$ leading to $c = -4$	**2**	**M1 Dep** for correct attempt to find the value of the arbitrary constant
	$\frac{1}{10}(2-3x)^{\frac{5}{3}}$ nfww	**2**	**M1** for $b(2-3x)^{\frac{5}{3}}$, $b \neq \frac{1}{10}$ Allow unsimplified
	When $x = -2$, $y = 10.2$ leading to $d = -1$	**M1**	**Dep** on previous M mark for attempt to find the value of a second arbitrary constant
	$y = \frac{1}{10}(2-3x)^{\frac{5}{3}} - 4x - 1$	**A1**	
8(a)	$\begin{pmatrix} -40 \\ 42 \end{pmatrix}$	**B1**	Allow $2\begin{pmatrix} -20 \\ 21 \end{pmatrix}$