Question			Answer	Marks	AOs	Guidance	
6	(a)		Asymptotes $x = 0$ (or y-axis) $x = \pi$ and $x = 2\pi$	**B1** **[1]**	**1.2**	Must have all three	
6	(b)		When $x = \frac{\pi}{3}$, $y = \frac{2\sqrt{3}}{3}$	**B1**	**1.1b**	soi; any exact form eg $\frac{2}{\sqrt{3}}$	
			When $x = \frac{\pi}{3}$, $\frac{dy}{dx} = -\text{cosec}\frac{\pi}{3}\cot\frac{\pi}{3} = -\frac{2}{3}$	**M1** **A1**	**3.1a** **1.1b**	Uses the derivative when $x = \frac{\pi}{3}$ May be embedded in the tangent equation	
			Equation of the tangent is $y - \frac{2\sqrt{3}}{3} = -\frac{2}{3}\left(x - \frac{\pi}{3}\right)$	**M1**	**2.1**	Uses both their coordinates and their gradient to find the equation of the tangent	If $y = -\frac{2}{3}x + c$ used, there must be an attempt to find c using both their coordinates and their gradient
			When $y = 0$, $-\frac{2\sqrt{3}}{3} = -\frac{2}{3}\left(x - \frac{\pi}{3}\right)$	**M1**	**2.1**	Substituting $y = 0$ into their tangent	
			giving $x = \frac{\pi}{3} + \sqrt{3}$ **(AG)**	**A1** **[6]**	**2.1**	Working must be correct and exact throughout	