9(a)	$\frac{dy}{dx} = \frac{\frac{dy}{d\theta}}{\frac{dx}{d\theta}}$	M1
	At least one of, $\frac{dy}{d\theta} = 4\cos\theta$ **or** $\frac{dx}{d\theta} = -2\sin\theta$	M1
	$\frac{dy}{dx} = \frac{4\cos\theta}{-2\sin\theta} = -\frac{2}{\tan\theta}$	M1
	Begins process to find equation, e.g. $y - 4\sin\alpha = -\frac{2}{\tan\alpha}(x - 2\cos\alpha)$	M1
	Begins process to rearrange to desired form, $y\sin\alpha - 4\sin^2\alpha = -2x\cos\alpha + 4\cos^2\alpha$	M1
	Full process resulting in desired form, e.g. $y\sin\alpha + 2x\cos\alpha = 4(\sin^2\alpha + \cos^2\alpha)$ $y\sin\alpha + 2x\cos\alpha = 4$	B1 **[6]**
9(b)	$A = \left(0, \frac{4}{\sin\alpha}\right)$ **and** $B = \left(\frac{2}{\cos\alpha}, 0\right)$	M1 Or vice versa
	Area of triangle $OAB = \frac{1}{2} \times \frac{4}{\sin\alpha} \times \frac{2}{\cos\alpha} = \frac{8}{\sin 2\alpha}$	M1
	$\frac{8}{\sin 2\alpha} < 16$	M1
	As α is acute, $\sin 2\alpha > 0$ $\frac{1}{2} < \sin 2\alpha$	M1
	$2\alpha = \frac{\pi}{6}$ $2\alpha = \frac{5\pi}{6}$	B1 Must have both for mark
	$\alpha = \frac{\pi}{12}$ $\alpha = \frac{5\pi}{12}$	B1 Must have both for mark
	$\frac{\pi}{12} < \alpha < \frac{5\pi}{12}$	B1 **[7]** **[13 marks]**