1. Find $dy/dx$ for the following parametric curve at the point specified.

$$x(\theta) = \sin^3 \theta, \quad y(\theta) = \cos \theta, \quad \theta = \pi/6$$

2. Consider the parametric curve given by

$$x(t) = t^2 - 9, \quad y(t) = t^2 - 8t.$$  

(a) Find the points ($x$ and $y$ coordinates) where the tangent line to the curve has slope 2.

(b) Find an equation for the tangent line when $t = 0$.

3. Sketch the polar point $(-1, \pi/3)$ and then find an alternative representation for the point with a positive radial coordinate.

4. Convert to an equation in rectangular coordinates.

(a) $r = 2$

(b) $r = 2 \sin \theta$