The first 4 problems deal with the parametric equations $\boxed{x = 3\cos\theta}$, $\boxed{y = 2\sin\theta}$.

1. Sketch the curve.
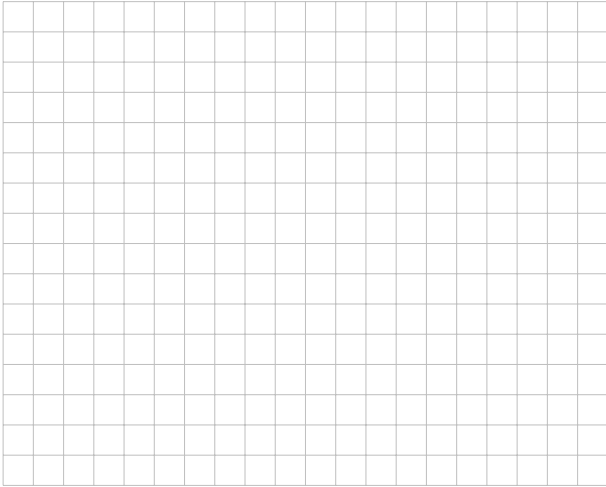
2. Find an equation for the line tangent to the curve at the point determined by the given value of θ.

a) $\theta = \frac{\pi}{3}$

b) $\theta = \frac{7\pi}{3}$

3. Determine the area enclosed by the curve. You may need to use the half-angle formula $\sin^2 x = \frac{1}{2}(1 - \cos 2x)$ and some scratch paper.

4. Set up an integral giving the arc-length of the curve. Do not evaluate this integral, but be careful to ensure that your answer will be positive.

5. In class on Tuesday we looked at the curve with parametric equations $x = t^2 - 2t$, $y = \sqrt{t}$. Determine the area enclosed between the curve and the y-axis.

6. Sketch the curve with parametric equations $x = \cos 2\theta$, $y = \sin \theta$.