## Section 10.1: Additional Problems

1. Determine if these points are on the parametric curve $x(t) = t^2 - 4t$, $y(t) = t + 2$

   (a) $(21, 9)$

   (b) $(30, 10)$

2. For each of the following parametric equations sketch the curve and indicate with an arrow the direction in which the curve increases as $t$ increases. Then eliminate the parameter to find a a Cartesian equation of the curve.

   (a) $x(t) = t^2 - 4t$, $y(t) = t + 2$, for $t \geq 0$

   (b) $x = 5\cos\theta, \qquad y = 5\sin\theta, \qquad \dfrac{\pi}{2} \leq \theta \leq \dfrac{3\pi}{2}$

   (c) $x = 5\cos\theta, \qquad y = 3\sin\theta, \qquad \dfrac{\pi}{2} \leq \theta \leq \dfrac{3\pi}{2}$

3. Sketch the parametric curve and indicate with an arrow the direction in which the curve increases as $t$ increases. Then eliminate the parameter to find a a Cartesian equation of the curve.

   $x = 2 + 4\sin(t), \qquad y = 5 + 2\cos(t).$