Name : _____

1. Consider the parametric equations $\begin{cases} x = t^2 + 2 \\ y = 4t \end{cases}$ where $-4 \le t \le 4$.
   a. Sketch the curve by plotting points. Indicate with an arrow the direction in which the curve is traced as t increases.
   b. Eliminate the parameter to find a Cartesian equation of the curve.

2. Find parametric equations for the line segment with initial point $(1,1)$ and terminal point $(3,5)$.

3. Consider the parametric equations $\begin{cases} x = \frac{1}{2}\cos\theta \\ y = \sin\theta \end{cases}$ where $0 \le \theta \le \pi$.
   a. Eliminate the parameter to find a Cartesian equation of the curve.
   b. Sketch the curve and indicate with an arrow the direction in which the curve is traced as t increases.

4. Find parametric equations for the circle centered at $(-2,-3)$ with radius 8, generated clockwise. (You've seen this before, so you don't have to re-do this if you already know how). Answer can be verified with Desmos, for example: https://www.desmos.com/calculator/aur1fhegdz