Name:_____

MA 3330: Quiz 1

1. For the parametric equation

$$x = 2\cos(t), \text{ and } y = 3\sin(t)$$

Graph and find the tangent line at $t = \pi/2$.

2. For the function given parametrically by

$$x = 3\cos(e^t), \text{ and } y = 3\sin(e^t)$$

Find the arclength from $t = 0$ to $t = \pi/2$.

3. For the following functions, express as a parametric equation.

(a) $y = -x^2 + 1$

(b) $y^2 = -x + 1$

(c) $y^2 = -x^2 + 1$

4. Graph $r = 1 + \cos(\theta)$.

5. Find the area $r = e^{2\theta}$ from $t = 0$ to $t = 1$.

6. For the following points A(1,2), B(3,4) and C(-1,2)

(a) Find the vectors $\overrightarrow{AB}$ and, $\overrightarrow{BC}$.

(b) Find two vectors parallel to $\overrightarrow{AB}$ that is length 1.

(c) What is the angle between $\overrightarrow{AB}$ and, $\overrightarrow{BC}$.