

MATH 201 QUIZ 1

SECTION:

ID:

NAME:

1. Eliminating the parameter, describe the curve (sketch, find the name of the curve, indicate initial and terminal point and direction) given by the following parametric equation

$$x = 2 + \frac{1}{2} \cos \theta, \quad y = -3 - \sin \theta, \quad 0 \leq \theta \leq \pi.$$

2. Answer the questions for the curve given by

$$x = e^{t^2}, \quad y = t^3 - 3t^2 + 1.$$

- (a) What is the equation of the tangent line when $t = 0$?
- (b) What is the point of horizontal tangent line? Is the curve concave upward or downward there?

3. Find the area of the surface obtained by rotating the following curve about x -axis.

$$x = 3t - t^3, \quad y = 3t^2, \quad 0 \leq t \leq 1.$$