

MATH 201 QUIZ 1

**SECTION:**

**ID:**

**NAME:**

1. Eliminating the parameter, find the Cartesian equation of the following curve.

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

2. Find the area of the region enclosed by the curve

$$x = t^2 - t, \quad y = t^3,$$

and the  $y$ -axis.

3. For the curve given by the polar equation  $r = 1 + 2 \cos \theta$ ,
  - (a) Sketch the curve.
  - (b) Find the area of the region enclosed by the inner loop.