

Circle One:

Name: \_\_\_\_\_

7:45-8:35 (361)

8:50-9:40 (362)

Math222-4, Spring 2007

Quiz #7: 03-28-07

No Calculators. You may use one  $3 \times 5$  index card. Due: March 29th, after class.

1.(5 Points) Set up (AND INTEGRATE) an integral equation for the area inside both the curves described by  $r = 1 - \cos(\theta)$  and  $r = \cos(\theta)$ .

2. Consider the conic section described by  $r = \frac{1}{1 - \frac{1}{2} \sin(\theta - \frac{\pi}{3})}$ .

a.)(2 Points)

What is  $e$ , the eccentricity? What kind of conic section is it? Locate one of the foci and the two major vertices. (Polar or cartesian coords is fine).

b.)(3 Points)

Sketch a graph of this curve.

3.(5 points) For  $f(x) = (1/3)x^3 - x^2 + 6x - 2$ , find the Taylor series for  $f$  centered at  $a = 1$ .

4.(5 Points) Find the MacLauren series for  $f(x) = \frac{x^2}{1+x}$ . *Hint:* use a series you already know...