

Circle One:

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

7:45-8:35 (361)

8:50-9:40 (362)

Math222-4, Spring 2007

Quiz #6: 03-21-07

No Calculators. You may use one  $3 \times 5$  index card.

**1.** Consider the curve described by  $r = 2 + \cos(\theta)$ .

**a.)** (3 Points) Sketch a graph.

**b.)** (3 Points) Find any points of intersection of this curve with the curve described by  $r = 2 + \sin(\theta)$ .

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

**a.)** (2 Points)

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 a.)** (2 Points) Sketch a graph of  $r = \frac{2\pi}{\theta}$ , where  $\theta \geq 2\pi$ . *Hint:* Try plotting some points like  $\theta = 2\pi, 4\pi, 6\pi, \dots$ . What happens to  $r$  in these regions?

**b.)** (2 Points) Sketch a graph of  $r = \frac{2\pi}{\theta}$ , where  $0 < \theta \leq 2\pi$ . *Hint:* Try plotting some points like  $\theta = 2\pi, \frac{2\pi}{2}, \frac{2\pi}{3}, \frac{2\pi}{4}, \dots$ .