

WORKSHEET FOR 4/22/2009

Exam 3: Exam 3 will be held Friday, May 1 during our normal class. It will cover sections 11.4-V.3 only.

Reading assignment. Read section M.1

Homework due Friday. V.3: 2, 3, 4, 31, 32

Exercises:

- (1) Find the slope of $r = f(\theta)$ for the following functions and points:
 - (a) $r = \theta^2$, $\theta = \pi/2$
 - (b) $r = \cos \theta$, $\theta = \pi/4, \pi/3, \pi/2$.
- (2) Convert $r = 1/(1 + \cos \theta)$ into a vector function $\mathbf{f}(\theta) = (x(\theta), y(\theta))$. Simplify as best you can. Compute $\mathbf{f}'(\theta)$. How is $\mathbf{f}'(\theta)$ related to the slope at point? Where is this slope undefined? What does this mean, geometrically?
- (3) Find the area of the region bounded by $r = 9 \sin 2\theta$.