Homework 3

Name: Date: July 9, 2015

P 1. Find the volume of the solid of revolution obtained by revolving the region R defined as

$$R = \{(x, y) \mid 0 \leq x \leq \pi \text{ and } 0 \leq y \leq \sin x\}$$

about the $y = -\pi$.

P 2. Let R be the region bounded by the graphs of

$$x = 9 - 15y^2, \text{ and the } y\text{-axis.}$$

Find the volume of the solid with base R and with square cross-sections taken perpendicular to the x-axis.

P 3. Find the arc length of the graph of

$$y = \frac{x^4}{8} + \frac{1}{4x^2}$$

on $[1, 3]$.

P 4. Find the area of the surface of revolution obtained by revolving the curve $y = 1 - x^2/4$, $0 \leq x \leq 2$, about the y-axis.