

Name: _____
MAT 296

Quiz 4: Area & Arclength
Fall 2017

Problem 1: Find the arclength of the curve $x(y) = \ln|\sin y|$ for $\frac{\pi}{6} \leq y \leq \frac{\pi}{3}$.

Problem 2: Find the area between the curves $x = y^2 - 1$ and $x = 14 - 2y$.

Problem 3: Suppose R is the region in \mathbb{R}^2 whose boundary is formed by the curve $y = \sqrt{x}$, the x -axis, and the line $y = x - 2$.

(a) Sketch the region R .

(b) Set up completely as possible *but do not evaluate* integrals calculating via the Disk/Washer method the volume of the solid formed by rotating the region R about the lines $x = -3$ and $y = 5$.

(c) Set up completely as possible *but do not evaluate* integrals calculating via the Shell Method the volume of the solid formed by rotating the region R about the lines $x = -3$ and $y = 5$.