MATH 112-030 RECITATION 3

NAME:

Problem 1. Find the arc length of the graph $y = \int_0^x \sqrt{1 - 2\cos(2x)}$ on the interval $\left[0, \frac{\pi}{2}\right]$.

Problem 2. Find the arc length of the graph of $y = \frac{x^3}{6} + \frac{1}{2x}$ on the interval $\left[\frac{1}{2}, 2\right]$.

Problem 3. Find the area of the surface generated by revolving the curve $y = \sqrt{3 - x^2}$ about the x-axis on the interval $\left[\sqrt{3}, \sqrt{12}\right]$.

Problem 4. Use the shell method. Find the volume of the solid generated by revolving the enclosed region in the first quadrant bounded by $y = 4 - x^2$, $y = 4$ and $x = 2$ about the line $x = -1$. (Can you use the washer method as well? Set up the integral using this method.)