Math 001B Assignment 8.2 Name_____

DIRECTIONS To receive full credit, you must provide complete legible solutions to the following problems in the space provided. Transfer all your answers to the space provided on the test paper.

1. Find the exact area of the surface obtained by rotating the curve about the x-axis.

$$y = \frac{x^3}{6} + \frac{1}{2x}, \quad \frac{1}{2} \le x \le 1$$

2. The given curve is rotated about the y-axis. Find the area of the resulting surface.

$$y = 5 - x^2, \quad 0 \le x \le 3$$

3. If the infinite curve $y = e^{-8x},\ x \geq 0,$ is rotated about the x-axis, find the area of the resulting surface.

4. Find the exact area of the surface obtained by rotating the curve about the x-axis.
$x = y^2 + 4, \quad 1 \leq x \leq 2$