Math 241 Worksheet 16 (two-sided) – extra practice only

Name: _____ Section (circle one): **3** **4**

1. Consider the region bounded by the two curves $y = x^2$ and $y = -x + 2$. Set up integrals (but do not evaluate) that find the volume of the solid generated by rotating this region…

(a) about the x-axis

(b) about the line $y = -1$.

(c) about the line $x = 3$.

Hint: This region is easiest to handle as a dx-problem (use x as the variable for the setup).

2. Consider the region in the first quadrant ($x \geq 0,\ y \geq 0$) bounded by the three curves $y = \sqrt{x}$, $y = 0$, and $y = 2 - x$. Set up integrals (but do not evaluate) that find the volume of the solid generated by rotating this region…

(a) about the x-axis

(b) about the line $y = -1$.

(c) about the y-axis

(d) about the line $x = 3$.

Hint: This region is easiest to handle as a dy-problem.