MATH 162 PRACTICE QUIZ 1B

1. Let *R* be the region in the xy-plane bounded by the curves $y = 4 - x^2$ and $y = 0$. Find the volume of the solid obtained by rotating *R* about each of the following axes. *Sketch*. Express each answer as a definite integral. *Do not evaluate!*

(A) x-axis

(B) $y = -3$

(C) $y = 7$

(D) $x = 3$

2. Let *R* be the region bounded by the line $y = x + 6$ and the parabola $y = x^2$. Assume that *R* is rotated about the line $x = -6$. Using the method of shells, write an integral that expresses the volume of the solid of revolution generated by R. Do not evaluate the integral. Sketch!

Extra Credit: Find the volume that remains after a hole of radius 1 is bored through the center of a solid sphere of radius 2.