Homework Assignment 9 Due on Thursday 5/2

Do the following exercise problems in the text book by Salas, Hille and Etgen, Sec 6.1: 12, 18, 22, 36 Sec 6.2: 8, 14, 24, 28, 34, 40, 43 Sec 6.3: 9, 12, 18, 31, 38, 46 Sec 6.4: 8, 18, 20, 25, 31, 33

Do the following problems.

Exercise 1. Determine the volume of the solid obtained by rotating the region bounded by $y = x^2 - x + 5$, x = 2, x = 5, and the x-axis about the

1. x-axis.

2. y-axis.

Exercise 2. Find the centroid of the bounded region determined by the curves $y = 25 - x^2$, y = 0

Exercise 3. The base of a solid is the region bounded by the equilateral triangle of side length a with one vertex at the origin and altitude along the positive x-axis. Find the volume of the solid given that cross-sections perpendicular to the x-axis are squares with one side on the base of the solid.