LB 220 Homework 6 (due Friday, 02/24/12)

**Directions.** Please work on the problems below. Your solutions must begin with a clear statement of the problem, followed by a clear, legible solution (or partial progress towards a solution). Please refer to the syllabus for the policy on grading and late homework.

**Collaboration.** I encourage you to discuss the homework problems with your classmates. However, each student must submit his or her own homework solutions.

1. Please solve exercises # 2, 10, and 22 in section 11.8. I insist that you use the method of Lagrange multipliers to solve these problems.
   
   Note: The method of Lagrange multipliers is important. In practice, it can be very tricky to apply since it requires you to solve a system of non-linear equations. Be sure to solve many of the recommended problems in section 11.8.

2. Please solve exercises # 2, 6, 16, 18, and 20 in section 12.1. For each integral indicate whether you should choose integrate with respect to $x$ first or with respect to $y$ first or whether it will not matter.
   
   Explain your reasoning.