Lecture 17. 19 October 2004

- **November 2 class.** Presentation of projects - 5 minutes for presentation and 2 minutes of discussion. Present a precise definition of the problem, and its formulation.

- **Review of Lecture #16:** LP: standard definition - introduction of slack and surplus variables, unrestricted variables. General solution of $Ax = b$; canonical form; basic solutions - Gauss-Jordan elimination process to find basic solutions. Properties of linear programs - convex, global solution, solution is always on the boundary.

- Basic concepts related to LP problems: Solve the Profit Maximization (Example 6.2) problem graphically; identify all basic solutions and basic feasible solutions.

- LP terminology - definition of various terms. Basic theorems of LP. Optimal solution is at least at one of the vertices (i.e., a basic feasible solution).

- Optimality conditions for LP problems. Reduction in terms of basic and nonbasic variables.

- **Read:** Sections 6.2, 6.3.