

Problem Set #4

IE 316

Due October 15, 2002

1. 3.4
2. Quiz Problem #2

Consider the Top Brass example from lecture and let y be the basic feasible solution $(250, 1500)$.

- Determine the set of all feasible directions at y .
 - Determine the set of all improving directions at y .
 - Using the results from the first two parts, show that y is not optimal.
 - Determine the set of all objective functions for which y would be optimal.
3. Consider a basic feasible solution x to an LP in standard form with upper and lower bounds, as discussed in Exercise 2.3 from Homework 2. State and prove a sufficient condition for optimality involving the reduced costs.
 4. Problem 4 from the first chapter of the AMPL book.