

HW 8, Due Friday 4/18/08:

Using branch-and-bound to solve problem 1 and problem 2. For both problems:

- a. Solve them using successive LP-relaxations, where each LP-relaxation is solved using the CPLEX (or Matlab) LP-solver.
- b. Solve them using a MIP-solver. For this one, you should be aware that Matlab does have a MIP-solver, but I am not sure how good it is. I am quite sure the CPLEX solver is very good.

Problem 1:

$$\text{Max } z = 5x_1 + 2x_2$$

$$\text{s.t. } 3x_1 + x_2 \leq 12$$

$$x_1 + x_2 \leq 5$$

$$x_1, x_2, \geq 0; x_1, x_2 \text{ integer}$$

Problem 2:

$$\text{Max } z = 3x_1 + x_2$$

$$\text{s.t. } 5x_1 + 2x_2 \leq 10$$

$$4x_1 + x_2 \leq 7$$

$$x_1, x_2, \geq 0; x_2 \text{ integer}$$