

HW #5 EE/Econ 458,

Due Tuesday, October 15, 2019

Construct the dual problem for the primal problem given below. Report your primal and dual problems. Solve both the primal and the dual problems using CPLEX. In both cases, use CPLEX commands to get the values of the slack variables and the dual variables. And so, for both problems (primal and dual), you should report, at the optimum:

- Value of objective
- Values of all decision variables
- Values of all dual variables
- Values of all slack variables

$$\max F = 4x_1 + x_2 + 5x_3 + 3x_4$$

s.t.

$$x_1 - x_2 - x_3 + 3x_4 \leq 1$$

$$5x_1 + x_2 + 3x_3 + 8x_4 \leq 55$$

$$-x_1 + 2x_2 + 3x_3 - 5x_4 \leq 3$$

$$x_1 \geq 0, x_2 \geq 0, x_3 \geq 0, x_4 \geq 0$$