Math 371 ASSIGNMENT 8, WINTER 2016

1. Give the simplex tableaus for Exercises 6 and 8 (both editions) of Section 4.1.
2. Finish the simplex method for the tableaus in Exercises 10 and 12 (8th edition) or 16 and 18 (9th edition) of Section 4.1 and **give the solution**.
3. For this exercise we wish to maximize the objective function $z = 4x_1 + 2x_2$ with the constraints

$$5x_1 + 4x_2 \leq 84\ , \qquad 2x_1 + 3x_2 \leq 42\ , \qquad x_1 \geq 0\ , \qquad x_2 \geq 0$$

   using the simplex method.

   (a) Rewrite the first two inequalities as equations with slack variables, and write the objective function with zero on the right side of the equation.

   (b) Give the simplex tableau.

   (c) Find the values of x_1 and x_2 that maximize the objective function, and determine the maximum.

   - Show all steps taken to do this.
   - Conclude with a sentence giving the maximum value and the x and y that give it.

4. Repeat the previous exercise with the same constraints but for the objective function $z = 3x + 3y$.