

6.1.1

$$Z = -3x_1 + 2x_2 + 10x_3 - x_4 \rightarrow \max$$

s.t

$$-x_1 + 2x_2 - 3x_3 + 4x_4 \leq 7$$

$$-3x_2 + 2x_3 - 5x_4 \leq 12$$

$$2x_1 + 2x_2 + 7x_4 \leq 15$$

$$x_j \geq 0, j = 1, 2, 3, 4$$

- a) Rewrite the problem as an augmented LP problem ready to be solved by the simplex method.

See file 6.1.1.txt

- b) Work through the simplex method step by step to solve the augmented LP problem.

See file 6.1.1.txt

6.1.2

Work through the simplex method step by step to solve the following problem

Maximize

$$Z = 4x_1 + 3x_2 + 6x_3$$

$$3x_1 + x_2 + 3x_3 \leq 30$$

$$2x_1 + 2x_2 + 3x_3 \geq 10$$

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

See file 6.1.2.txt