Assignment 8 of MATP6610/4820

(Due on April-23-2019 in class)

Problem 1

Consider the linear program:

$$\begin{aligned} \underset{x_1,x_2}{\text{minimize}} \ & -10x_1 - 12x_2 \\ \text{s.t. } & x_1 + 2x_2 \le 20 \\ & 2x_1 + x_2 \le 20 \\ & x_1 \ge 0, x_2 \ge 0 \end{aligned} \tag{1}$$

1. Plot the feasible region of (1) and find the optimal solution by graph
2. In class, we wrote (1) into an equivalent standard LP. Also, we start from a basic feasible solution and perform one step of the simplex method. Continue on the basic feasible solution obtained in class and find the optimal solution by the simplex method.

Problem 2 (not to be graded)

Read the instructor's code posted in LMS about the simplex method. `simplex1phase` is to solve an auxiliary problem with artificial variables.