MATH 521 HOMEWORK D
DUE 10/15/18

(1) Consider the linear program

$$\begin{aligned} \text{Maximize} \quad & z = -2x_1 + 4x_2 - x_3 \\ \text{subject to} \quad & 2x_1 + 3x_2 - 2x_3 \geq 4 \\ & 5x_1 + 2x_2 - x_3 \leq 12 \\ & x_1, x_2 \geq 0; x_3 \text{ free} \end{aligned}$$

(a) Transform the LP into equality form with variables taking non-negative values.
(b) (Phase I) Introduce artificial variable(s) and solve Phase I via simplex method to obtain an initial basic feasible solution.
(c) (Phase II) Use the simplex method to solve the original LP.

Date: October 1, 2018.