

General Mathematics and Computational Science II

Exercise 15

April 17, 2007

1. The second problem on the April 12 exercises has the standard form *minimize*

$$\zeta = -2y_1 - y_2 + y_3 + 5$$

subject to

$$y_1 + y_2 + s_1 = 4,$$

$$y_2 - y_3 + s_2 = 0,$$

$$-y_1 - y_3 + s_3 = 1,$$

$$y_i \geq 0 \text{ and } s_i \geq 0 \text{ for } i = 1, 2, 3.$$

Solve this linear programming problem using the simplex method.

2. Solve the following linear programming problem using the simplex method.

Maximize

$$z = 3x_1 + 4x_2$$

subject to

$$2x_1 + x_2 \leq 4,$$

$$3x_1 + 2x_2 \leq 8,$$

$$x_i \geq 0 \text{ for } i = 1, 2.$$