**CS 451**

**Activity 16-1**

**[Simplex Algorithm]** (Page 130 the textbook)

1. Convert the Giapetto problem (Example 1 in Chapter 3) to a standard form.

max *z* = 3 *x1* + 2 *x2*

subject to (s.t.)

2 *x1* + *x2* ≤ 100

 *x1* + *x2*  ≤ 80

 *x1* ≤ 40

 *x1* ≥ 0

 *x2* ≥ 0

1. Convert the Dorian problem (Example 2 in Chapter 3) to a standard form.

min *z* = 50 *x1* + 100 *x2*

s.t.

7 *x1* + 2 *x2* ≥ 28

2 *x1* + 12 *x2* ≥ 24

 *x1*, *x2* ≥ 0

1. Convert the following LP to a standard form:

min *z* = 3*x1* + *x2*

s.t.

 *x1* ≥ 3

 *x1* + *x2*  ≤ 4

2 *x1* – *x2* = 3

 *x1*, *x2* ≥ 0