

ITEC451

Activity 15-2

[Simplex Algorithm] Solve the following LP using Simplex Algorithm

■ Decision Variables:

- ☐ x_1 = number of desks produced
- ☐ x_2 = number of tables produced
- ☐ x_3 = number of chairs produced

■ The LP is:

$$\max z = 60x_1 + 30x_2 + 20x_3$$

$$\begin{array}{llll} \text{s.t.} & 8x_1 + 6x_2 + x_3 & \leq 48 & \text{(lumber constraint)} \\ & 4x_1 + 2x_2 + 1.5x_3 & \leq 20 & \text{(finishing constraint)} \\ & 2x_1 + 1.5x_2 + 0.5x_3 & \leq 8 & \text{(carpentry constraint)} \\ & & x_2 & \leq 5 & \text{(table demand constraint)} \\ & x_1, x_2, x_3 & \geq 0 & \end{array}$$