

Assignment-3

1. Solve following LP by Two-Phase Simplex Tableau

$$\begin{array}{ll} \max. & 3x_1 - x_2 \\ & x, y \\ \text{s. t.} & \begin{cases} 2x_1 + x_2 \geq 2 \\ x_1 + 3x_2 \leq 2 \\ x_2 \leq 4 \\ x_1, x_2 \geq 0 \end{cases} \end{array}$$

2. Solve following LP by Two-Phase Simplex Tableau

$$\begin{array}{ll} \max. & 5x_1 + 8x_2 \\ \text{s. t.} & \begin{cases} 3x_1 + 2x_2 \geq 3 \\ x_1 + 4x_2 \geq 4 \\ x_1 + x_2 \leq 5 \\ x_1, x_2 \geq 0 \end{cases} \end{array}$$

3. Solve following LP by Two-Phase Simplex Tableau

$$\begin{array}{ll} \max. & 2x_1 - x_2 + x_3 \\ \text{s. t.} & \begin{cases} x_1 + x_2 - 3x_3 \leq 8 \\ 4x_1 - x_2 + x_3 \geq 2 \\ 2x_1 + 3x_2 - x_3 \geq 4 \\ x_1, x_2, x_3 \geq 0 \end{cases} \end{array}$$

- Hints

1. Submission due: **2025/Oct./31**
2. Verify your answers by Matlab “linprog”
3. Submit to lecwlzhao@163.com, email title “assignment3_your-name + your student number”