Assignment-2

1. Solve following LP by Simplex Tableau

$$\max_{x,y} 3x + 2y$$
$$\text{s. t.} \begin{cases} 2x + y \leq 18 \\ 2x + 3y \leq 42 \\ 3x + y \leq 24 \\ x, y \geq 0 \end{cases}$$

2. Solve following LP by Simplex Tableau

$$\max. -x_1 + 3x_2 + x_3$$
$$\text{s. t.} \begin{cases} 3x_1 - x_2 + 2x_3 \leq 7 \\ -2x_1 + 4x_2 \leq 12 \\ -4x_1 + 3x_2 + 8x_3 \leq 10 \\ x_1, x_2, x_3 \geq 0 \end{cases}$$

3. Solve following LP by Simplex Tableau

$$\max. -3x_1 + 5x_2 + 2x_3 + x_4$$
$$\text{s. t.} \begin{cases} x_1 + x_2 + x_3 \leq 4 \\ 4x_1 - x_2 + x_3 + 2x_4 \leq 12 \\ -x_1 + x_2 + 2x_3 + 3x_4 \leq 12 \\ x_1, x_2, x_3, x_4 \geq 0 \end{cases}$$

- Hints
  1. Submission due: 2024/Oct./22
  2. Solve the above problems manually by Tableau

3. Verify your answers by Matlab "linprog"
4. Organize your answers into a PDF file with Latex
5. Submit to lecwlzhao@163.com, email title "assigment2_your-name + your student number"