

Class 3

Use Simplex method to solve the following. Make a menu driven program with the following options **(a)** List of all BF and BFSs **(b)** Print the initial simplex table **(c)** List of all Non-basic variables in the initial table **(d)** List of Basic variables along with min ratios in the first iteration **(e)** number of iterations **(f)** simplex table of the ith iteration.

Good output screen will be given credit.

Solve the following

1. Maximize $Z = 2x_1 + 5x_2$, Subject to $x_1 + 4x_2 \leq 24$, $3x_1 + x_2 \leq 21$, $x_1 + x_2 \leq 9$, $x_1, x_2 \geq 0$.
2. Maximize $Z = 4x_1 + 3x_2 + 6x_3$, Subject to $2x_1 + 3x_2 + 2x_3 \leq 440$, $4x_1 + 3x_3 \leq 470$, $2x_1 + 5x_2 \leq 430$, $x_1, x_2, x_3 \geq 0$.
3. Maximize $Z = 12x_1 + 15x_2 + 14x_3$, Subject to $-x_1 + x_2 \leq 0$, $-x_2 + 2x_3 \leq 0$, $x_1 + x_2 + x_3 \leq 100$, $x_1, x_2, x_3 \geq 0$.
4. Minimize $Z = x_1 - 3x_2 + 3x_3$, Subject to $3x_1 - x_2 + 2x_3 \leq 7$, $2x_2 - 4x_3 \leq 12$, $-4x_1 + 3x_2 + 8x_3 \leq 10$, $x_1, x_2, x_3 \geq 0$.
5. Maximize $Z = 3x_1 + 2x_2 + 2x_3$, Subject to $5x_1 + 7x_2 + 4x_3 \leq 7$, $4x_1 - 7x_2 - 5x_3 \leq 2$, $3x_1 + 4x_2 - 6x_3 \geq 3$, $x_1, x_2, x_3 \geq 0$.