Lab Sheet-5
Dual Simplex Method

- Write a code to solve the following problems through the Dual Simplex method.

- Where the input method should be like the following: (Ask from user)

  1. Enter the number of the variables.
  2. Enter the number of the constraints.
  3. Enter the number of "$\leq$" constraints.
  4. Enter the number of "$=$" constraints.
  5. Enter the number of "$\geq$" constraints.
  6. Enter the constraints chronologically.

The output should be like following:

  1. Print the initial simplex table.
  2. Print all the tables.
  3. Print the optimal solution.
  4. Test your code on the following example.

$$\text{Minimize } Z = -2x_1 - x_3$$
$$\text{subject to } x_1 + x_2 - x_3 \geq 5$$
$$x_1 - 2x_2 + 4x_3 \leq 8$$
$$x_1, x_2, x_3 \geq 0$$

Ans: $x_1 = 0, x_2 = 14, x_3 = 9$ **and** $Z_{min} = -9$

$\ast\ast\ast\ast\ast$ END $\ast\ast\ast\ast\ast$