Date 24/02/23.

at a +ve level. Therefore, the given LPP does not possess any feasible soln.

Ques Use two phase simplex method to solve Max $z = 5x_1 - 4x_2 + 3x_3$

s.t

$$2x_1 + x_2 - 6x_3 = 20$$
$$6x_1 + 5x_2 + 10x_3 \leq 76$$
$$8x_1 - 3x_2 + 6x_3 \leq 50$$
$$x_1, x_2, x_3 \geq 0$$

$$2x_1 + x_2 - 6x_3 + x_6 = 20$$
$$6x_1 + 5x_2 + 10x_3 + x_4 = 76$$
$$8x_1 - 3x_2 + 6x_3 + x_5 = 50$$

Max $z^* = -A_1$

Initial Station:

			0	0	0	0	0	-1	
B	C_B	x_B	y_1	y_2	y_3	y_4	y_5	y_6	Min ratio
y_6	-1	20	2	1	-6	0	0	1	10
y_4	0	76	6	5	10	1	0	0	38/3
y_5	0	50	8	-3	6	0	1	0	25/4 →
		z=-20 ↑	-2	-1	6	0	0	0	
y_6	-1	15/2	0	7/4	-15/2	0	-1/4	1	30/7 →
y_4	0	77/2	0	29/4	11/2	1	-3/4	0	154/29
y_1	0	25/4	1	-3/8	3/4	0	1/8	0	
		z=-15/2	0	-7/4 ↑	15/2	0	1/4	0	

B	C_B	x_B	y_1	y_2	y_3	y_4	y_5	Min ratio
y_2	0	30/7	0	1	-30/7	0	-1/7	10
y_4	0	53/7	0	0	256/7	1	2/7	53/3
y_1	0	55/7	1	0	-6/7	0	1/14	55/4
		$z=0$	0	0	0	0	0	
			5	-4	3	0	0	
B	C_B	x_B	y_1	y_2	y_3	y_4	y_5	
y_2	-4	30/7	0	1	-30/7	0	-1/7	
y_4	0	53/7	0	0	256/7	1	2/7	
y_1	5	55/7	1	0	-6/7	0	1/14	
		$z=155/7$	0	0	69/4	0	13/4	

Since, All $z_j - c_j \geq 0$, an optimum basic feasible solution is obtained. Hence, optimum basic feasible soln in the given LPP is.

Max $z = 155/7$

$x_1 = 55/7$

$x_2 = 30/7$, $x_3 = 0$

Ques Use two phase Simplex method to solve

Max $z = 3x_1 - x_2$

St.

$2x_1 + x_2 \geq 3$

$x_1 + 3x_2 \leq 2$

$x_2 \leq 4$

$x_1, x_2 \geq 0$