

LAB QUESTIONS ON SIMPLEX BIG-M METHOD:

Write code to solve the following LPP by big M method. Print the input and solutions and optimized value. Submit your code file and output file.

1. **MIN Z** = $2X_1 + 9X_2 + X_3$
Subject to $X_1 + 4X_2 + 2X_3 \geq 5$
 $3X_1 + X_2 + 2X_3 \geq 4$
and $X_1, X_2, X_3 \geq 0$
2. **MIN Z** = $4X_1 + 2X_2$
Subject to $3X_1 + X_2 \geq 27$
 $X_1 + X_2 \geq 21$
 $X_1 + 2X_2 \geq 30$
and $X_1, X_2 \geq 0$
3. **MAX Z** = $-2X_1 - X_2$
Subject to $3X_1 + X_2 = 3$
 $4X_1 + 3X_2 \geq 6$
 $X_1 + 2X_2 \leq 4$
and $X_1, X_2 \geq 0$
4. **MAX Z** = $3X_1 - X_2$
Subject to $2X_1 + X_2 \geq 2$
 $X_1 + 3X_2 \leq 3$
 $X_2 \leq 4$
and $X_1, X_2 \geq 0$
5. **MAX Z** = $X_1 + 2X_2 + 3X_3 - X_4$
Subject to $X_1 + 2X_2 + 3X_3 = 15$
 $2X_1 + X_2 + 5X_3 = 20$
 $X_1 + 2X_3 + X_3 + X_4 = 10$
And $X_1, X_2, X_3, X_4 \geq 0$
6. **MAX Z** = $-2X_1 + X_2 + 3X_3$
Subject to $X_1 - 2X_2 + 3X_3 = 2$
 $3X_1 + 2X_2 + 4X_3 = 1$
And $X_1, X_2, X_3 \geq 0$