Problem 1:

In this problem, you have to write down the program for Gaussian Elimination Method.

Input:
The systems of linear Equations will be given in a text file. The unknown variables may be like in the format (either uppercase or lowercase of [a,b,c… or x1, x2,x3,....]), coefficients are real number or integer, so as constants. The format of the input in text file will be like this:

$$x_1 + x_2 - x_3 = -3$$
$$6x_1 + 2x_2 + 2x_3 = 2$$
$$-3x_1 + 4x_2 + x_3 = 1$$

Or,

A + 3B + C + 3D = 14
4A - 2B - 3C + D = 20
2A + B - C - D = 9
A + 2B - C - 2D = 3

Output:
You will generate output in a separate text file, with the unknowns and their corresponding values.

Problem 2:
You have to write down the program for solution of system of linear equations using matrix inversion method. Matrix inversion method will be through the second approach (using minors, co-factors, adjugate matrix) taught in the theory class.

Input:
The systems of linear Equations will be given in a text file. The unknown variables may be like in the format (either uppercase or lowercase of [a,b,c… or x1, x2,x3,....]), coefficients are real number or integer, so as constants. The format of the input in text file will be like this:

$$x_1 + x_2 - x_3 = -3$$
$$6x_1 + 2x_2 + 2x_3 = 2$$
$$-3x_1 + 4x_2 + x_3 = 1$$

Or,

A  + 3B +  C + 3D = 14
4A - 2B - 3C +  D = 20
2A +  B -  C -  D = 9
A  + 2B -  C - 2D = 3

Output:
You will generate output in a separate text file, with the unknowns and their corresponding values. You also need to print the minor matrix, co-factor matrix, adjugate matrix, the inverse matrix in that text file.

Submission:

Deadline: 23rd September, 2018 11:59 PM

No Lab Report is needed in this assignment.