Assignment 4 Due: 25.4.2022 (24.9.1443 AH)

Q1- Use Gauss-Seidel Numerical Method to solve the system:

$$6x_1 + 2x_2 = 12.5$$

$$2x_1 - 5x_2 = 41$$

Use X^0= [0,0], compute X^1 to X^5, (write numbers rounded to at least 5 decimal digits, show all steps).

Q2- Re-Solve Q1 using Gauss Elimination Method.

Q3- Re-Solve Q1 using LU Decomposition Method.

Q4- Use Gauss-Seidel Numerical Method to solve the system:

$$-2x_1 + 7x_2 + 2x_3 = -6.5$$

$$5x_1 + 3x_2 - x_3 = 4.25$$

$$3x_1 + 2x_2 + 9x_3 = 71.75$$

Use X^0= [0,0,0], compute X^1 to X^5, (write numbers rounded to at least 5 decimal digits, show all steps).

Q5- Re-Solve Q4 using Gauss-Jordan Elimination Method.

Q6- Re-Solve Q4 using the Matrix Inverse.