Assignment 3
System of Linear equations
Due: 28 Sep 2025. Viva: TBA

1. Given the equations:

$$10x_1 + 2x_2 - x_3 = 27$$
$$-3x_1 - 6x_2 - 2x_3 = -61.5$$
$$x_1 + x_2 + 5x_3 = -21.5$$

A. Define matrix A and b in terms of (*i*,*j*), where *Ax* = *b*, and *i*= number of row and *j* = number of column. Show the output of *A* and *b*.
B. Solve by Gauss elimination (without pivoting).
C. Solve by Matrix inversion method. You may use matlab inbuilt function for finding matrix inverse.

2. Given the equations:

$$2x_1 - 6x_2 - x_3 = -38$$
$$-3x_1 - x_2 + 7x_3 = -34$$
$$-8x_1 + x_2 - 2x_3 = -20$$

A. Solve by Gauss elimination with partial pivoting.