Solve the following system of linear equations using both **Gauss Elimination**, **Gauss-Jordan Elimination** and **A=LU Decomposition**

1. $2x + 3y + z = 7, \quad 4x + y - z = 3, \quad 3x + 2y + 2z = 10$

2. $x + 2y - z = 3, \quad 2x - y + 3z = 9, \quad 3x + y + 2z = 8$

3. $2x + 3y = 13, \quad 4x - y = 5$

4. $3x - 4y = 2, \quad 5x + 6y = 7$

5. $x + 2y - z = 1, \quad x - y + 3z = 13, \quad x + y + 2z = 14$