1. An inconsistent system of linear equations $Ax = b$ is given. Use the method of least squares to obtain the vectors $z$ for which $||Az - b||$ is a minimum.

$$A = \begin{bmatrix} 1 & 1 \\ 1 & 2 \\ 3 & 1 \end{bmatrix}, \quad b = \begin{bmatrix} 3 \\ 5 \\ 4 \end{bmatrix}$$

2. Obtain the solution of least norm to the equation

$$x_1 - 3x_2 + 2x_3 = 5$$