

### HW3

Solve

$$\begin{bmatrix} 1 & 1 & 3 & 4 & 1 \\ -2 & -3 & -4 & -1 & 1 \\ 2 & 3 & 4 & 5 & 1 \\ -4 & -3 & -2 & -1 & 1 \\ 4 & -3 & -2 & -1 & 5 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \end{bmatrix} = \begin{bmatrix} -1 \\ 2 \\ 3 \\ 4 \\ 1 \end{bmatrix}$$

by Gauss elimination method. The desired accuracy is 5 digits after the decimal point.

Solution

$$x_1 = -\frac{167}{72} = 2.31944,$$

$$x_2 = \frac{25}{6} = 4.16667,$$

$$x_3 = -\frac{95}{72} = 1.31944,$$

$$x_4 = -\frac{25}{36} = 0.694444,$$

$$x_5 = \frac{35}{9} = 3.88889$$