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

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

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

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

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

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