The Gauss method.
We write the system in the form:

$$\begin{pmatrix} 1 & 2 & 3 \\ 3 & -1 & 2 \\ 4 & -6 & -4 \end{pmatrix} = \begin{pmatrix} 5 \\ 8 \\ -2 \end{pmatrix}$$

We multiply the first row in (3). Multiplying the second row by (-1). Add the second line to the first:

$$\begin{pmatrix} 0 & 7 & 7 \\ 3 & -1 & 2 \\ 4 & -6 & -4 \end{pmatrix} = \begin{pmatrix} 7 \\ 8 \\ -2 \end{pmatrix}$$

Multiplying the second row in (4). Multiplying the 3-th row in (3). Add the 3rd row to the second:

$$\begin{pmatrix} 0 & 7 & 7 \\ 0 & 14 & 20 \\ 4 & -6 & -4 \end{pmatrix} = \begin{pmatrix} 7 \\ 38 \\ -2 \end{pmatrix}$$

We multiply the first row in (2). Multiplying the second row by (-1). Add the second line to the first:

$$\begin{pmatrix} 0 & 0 & -6 \\ 0 & 14 & 20 \\ 4 & -6 & -4 \end{pmatrix} = \begin{pmatrix} -24 \\ 38 \\ -2 \end{pmatrix}$$

From the first line express x3 --- c

$$x_3 = \frac{-24}{-6} = 4$$

From the second row express x2 --- b

$$x_2 = \frac{38 - 20 \bullet 4}{14} = \frac{-42}{14} = -3$$

From the 3rd row express x1 --- a

$$x_1 = \frac{-2 - (-6) \bullet (-3) - (-4) \bullet 4}{4} = \frac{-4}{4} = -1$$

b=-3