$0x_1 - 3x_2 + 7x_3 = 4$

$x_1 + 2x_2 - x_1 = 0$

$5x_1 - 2x_2 + 0x_3 = 3$

$$A = \begin{vmatrix} 0 & -3 & 7 \\ 1 & 2 & -1 \\ 5 & -2 & 0 \end{vmatrix} \quad B = \begin{vmatrix} 4 \\ 0 \\ 3 \end{vmatrix}$$

$$U = \begin{vmatrix} 5 & -2 & 0 \\ 1 & 2 & -1 \\ 0 & -3 & 7 \end{vmatrix} \quad P = \begin{vmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{vmatrix}$$

use $1/5$ to eliminate a21

$$L = \begin{vmatrix} 1 & 0 & 0 \\ \frac{1}{5} & 1 & 0 \\ ? & ? & 1 \end{vmatrix}$$

pivot

$$U = \begin{vmatrix} 5 & -2 & 0 \\ 0 & 12/5 & -1 \\ 0 & -3 & 7 \end{vmatrix}$$

$$U = \begin{vmatrix} 5 & -2 & 0 \\ 0 & -3 & 7 \\ 0 & 12/5 & -1 \end{vmatrix} \quad P = \begin{vmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{vmatrix} \quad L = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ \frac{1}{5} & -4/5 & 1 \end{vmatrix}$$

use $-4/5$ to eliminate a32

$$U = \begin{vmatrix} 5 & -2 & 0 \\ 0 & -3 & 7 \\ 0 & 0 & 4.6 \end{vmatrix} \quad P = \begin{vmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{vmatrix} \quad L = \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ \frac{1}{5} & -4/5 & 1 \end{vmatrix}$$

$[L]\{d\} = [P]\{b\}$

$[L]\,[3\times 3] = \{d\}$

$d_1 = 3 \quad d_2 = 4 \quad d_3 = 2.6$

$$\begin{vmatrix} 5 & -2 & 0 \\ 0 & -3 & 7 \\ 0 & 0 & 4.6 \end{vmatrix} \begin{Bmatrix} x_1 \\ x_2 \\ x_3 \end{Bmatrix} = \begin{Bmatrix} 3 \\ 4 \\ 2.6 \end{Bmatrix}$$

$x_3 = 0.5652$

$x_2 = -0.01449$

$x_1 = 0.5942$