

(1, 2) U14

$$\begin{cases} x_1 + x_2 = 1 \\ x_1 - x_2 = 3 \\ -x_1 + 2x_2 = -2 \end{cases}$$

	x_1	x_2	
-1	1	1	1
2	1	-1	3
3	-1	2	-2

$\begin{matrix} -1 \\ +1 \end{matrix}$

1	1	1
0	-2	2
0	3	-1

1	1	1
0	1	-1
0	3	-1

1	1	1
0	1	-1
0	0	+2

rijger.
-3 vorm

row
echelon form

$$\begin{pmatrix} 1 & 1 & 2 & | & 1 \\ 2 & 0 & 1 & | & 3 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 1 & 2 & | & 1 \\ 0 & -2 & -3 & | & 1 \end{pmatrix} \rightarrow \frac{1}{2}$$

$$\begin{pmatrix} 1 & 0 & \frac{7}{2} & | & \frac{1}{2} \\ 0 & -2 & -3 & | & 1 \end{pmatrix}$$

$x_1 \quad x_2 \quad x_3$

$$\begin{pmatrix} 1 & 0 & \frac{7}{2} & | & \frac{1}{2} \\ 0 & 1 & \frac{3}{2} & | & -\frac{1}{2} \end{pmatrix}$$

$$x_1 = -\frac{7}{2}x_3 + \frac{1}{2}$$

$$x_2 = -\frac{3}{2}x_3 - \frac{1}{2}$$

$$x_3 = x_3$$

rechenform

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} = \begin{pmatrix} \frac{1}{2} \\ -\frac{1}{2} \\ \frac{1}{2} \\ 0 \end{pmatrix} + x_3 \begin{pmatrix} -\frac{7}{2} \\ -\frac{3}{2} \\ 1 \\ 1 \end{pmatrix}$$

(1,3)(1,3)

vrije variabel

a)

$$\begin{array}{c} \rightarrow \\ \rightarrow \end{array} \left(\begin{array}{ccccc|c} x_1 & x_2 & x_3 & x_4 & x_5 & \\ \hline 1 & 2 & 0 & 3 & 1 & -2 \\ 0 & 0 & 1 & 2 & 4 & 5 \end{array} \right)$$

$$x_1 + 2x_2 + 3x_4 + x_5 = -2$$

$$\begin{cases} x_1 = -2x_2 - 3x_4 - x_5 - 2 \\ x_2 = x_2 \\ x_3 = -2x_4 - 4x_5 + 5 \\ x_4 = x_4 \\ x_5 = x_5 \end{cases}$$

in vullen geeft rechterlid.

op

$$\begin{pmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \\ x_5 \end{pmatrix} = \begin{pmatrix} -2 \\ 0 \\ 5 \\ 0 \\ 0 \end{pmatrix} + x_2 \begin{pmatrix} -2 \\ 1 \\ 0 \\ 0 \\ 0 \end{pmatrix} + x_4 \begin{pmatrix} -3 \\ 0 \\ -2 \\ 1 \\ 0 \end{pmatrix} + x_5 \begin{pmatrix} -1 \\ 0 \\ 1 \\ 0 \\ 1 \end{pmatrix}$$

in vullen moet opleveren

$$0 \ 0 \ 1 \ 2 \ 4 \ | \ 5$$

$$x_3 + 2x_4 + 4x_5 = 5$$

$$\underline{x_3 = -2x_4 - 4x_5 + 5}$$