4.) Lós: $3x - 4y + z = 2$
$x - 2y = 1$
$-2x + 2y - z = -1$

Utvidet matrise:

$$\begin{bmatrix} 3 & -4 & 1 & 2 \\ 1 & -2 & 0 & 1 \\ -2 & 2 & -1 & -1 \end{bmatrix} \sim \begin{bmatrix} 1 & -2 & 0 & 1 \\ 3 & -4 & 1 & 2 \\ -2 & 2 & -1 & -1 \end{bmatrix}$$

$$\sim \begin{bmatrix} 1 & -2 & 0 & 1 \\ 0 & 2 & 1 & -1 \\ 0 & -2 & -1 & 1 \end{bmatrix} \sim \begin{bmatrix} 1 & -2 & 0 & 1 \\ 0 & 2 & 1 & -1 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\sim \begin{bmatrix} 1 & -2 & 0 & 1 \\ 0 & 1 & 1 & -1 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

$x - 2y = 1$ $\Rightarrow$ $x = 1 + 2y$
$y + z = -1$ $y = -1 - z$

$\Rightarrow x = 1 + 2(-1 - z) = 1 - 2 - 2z = \underline{\underline{-1 - 2z}}$
$y = \underline{\underline{-1 - z}}$

z er fri!

dvs. kan være hva som helst

5.) Lós: $x + 2y + z = 2$
$2x - 4y + 3z = 1$
$3x - 2y + 4z = 6$

Utvidet matrise:

$$\begin{bmatrix} 1 & 2 & 1 & 2 \\ 2 & -4 & 3 & 1 \\ 3 & -2 & 4 & 6 \end{bmatrix} \sim \begin{bmatrix} 1 & 2 & 1 & 2 \\ 0 & -8 & 1 & -3 \\ 0 & -8 & 1 & 0 \end{bmatrix}$$