3. $\begin{cases} x+2y+z=1 \\ 2x+y+z=-1 \\ x+3y+z=2 \end{cases}$

$\Delta = \begin{vmatrix} 1 & 2 & 1 \\ 2 & 1 & 1 \\ 1 & 3 & 1 \end{vmatrix} = 1+2+6-(1+3+4)$

$= 9-8 = 1$

$\Delta x = \begin{vmatrix} 1 & 2 & 1 \\ -1 & 1 & 1 \\ 2 & 3 & 1 \end{vmatrix} = 1+4-3-(2+3-2)$

$= 2-3 = -1$

$\Delta y = \begin{vmatrix} 1 & 1 & 1 \\ 2 & -1 & 1 \\ 1 & 2 & 1 \end{vmatrix} = -1+1+4-(-1+2+2)$

$= 4-3 = 1$

$\Delta z = \begin{vmatrix} 1 & 2 & 1 \\ 2 & 1 & -1 \\ 1 & 3 & 2 \end{vmatrix} = 2-2+6-(1-3+8)$

$= 6-6 = 0$

$x = \frac{\Delta x}{\Delta} = -1, \quad y = \frac{\Delta y}{\Delta} = 1, \quad z = \frac{\Delta z}{\Delta} = 0$