

$$\left[\begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 2 & -6 & 11 & 35 \\ -3 & 5 & 1 & 8 \end{array} \right] \begin{array}{l} \swarrow -2 \\ \nwarrow -2 \end{array} \begin{array}{l} 3 \\ 3 \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 0 & -2 & 9 & 31 \\ 0 & -1 & 4 & 14 \end{array} \right] \begin{array}{l} \swarrow \\ \nwarrow \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 0 & -1 & 4 & 14 \\ 0 & -2 & 9 & 31 \end{array} \right] \begin{array}{l} \swarrow (-1) \\ \nwarrow -2 \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 0 & 1 & -4 & -14 \\ 0 & 0 & 1 & 3 \end{array} \right] \begin{array}{l} \swarrow \\ \nwarrow 4 \end{array} -1$$

$$\Rightarrow \begin{cases} x = -5 \\ y = -2 \\ z = 3 \end{cases}$$

$$\left[\begin{array}{ccc|c} 1 & -2 & 0 & -1 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 1 & 3 \end{array} \right] \begin{array}{l} \swarrow 2 \\ \nwarrow \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & -5 \\ 0 & 1 & 0 & -2 \\ 0 & 0 & 1 & 3 \end{array} \right]$$