$$\begin{bmatrix} 1 & -2 & 1 & | & 2 \\ 2 & -6 & 11 & | & 35 \\ -3 & 5 & 1 & | & 8 \end{bmatrix} \begin{array}{l} -2 \\ \\ 3 \end{array}$$

$$\begin{bmatrix} 1 & -2 & 1 & | & 2 \\ 0 & -2 & 9 & | & 31 \\ 0 & -1 & 4 & | & 14 \end{bmatrix}$$

$$\begin{bmatrix} 1 & -2 & 1 & | & 2 \\ 0 & -1 & 4 & | & 14 \\ 0 & -2 & 9 & | & 31 \end{bmatrix} \begin{array}{l} \cdot (-1) \\ -2 \end{array}$$

$$\begin{bmatrix} 1 & -2 & 1 & | & 2 \\ 0 & 1 & -4 & | & -14 \\ 0 & 0 & 1 & | & 3 \end{bmatrix} \begin{array}{l} \\ 4 \quad -1 \end{array} \Rightarrow \begin{cases} x = -5 \\ y = -2 \\ z = 3 \end{cases}$$

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

$$\begin{bmatrix} 1 & 0 & 0 & | & -5 \\ 0 & 1 & 0 & | & -2 \\ 0 & 0 & 1 & | & 3 \end{bmatrix}$$