

$$\left[ \begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 2 & -6 & 6 & 35 \\ -3 & 5 & 1 & 3 \end{array} \right] \begin{array}{l} \downarrow -2 \\ \leftarrow 3 \end{array}$$

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

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

$$\left[ \begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 0 & 1 & -4 & -9 \\ 0 & 0 & -4 & -13 \end{array} \right] \cdot \left( \frac{-1}{4} \right)$$

$$\left[ \begin{array}{ccc|c} 1 & -2 & 1 & 2 \\ 0 & 1 & -4 & -9 \\ 0 & 0 & 1 & 13/4 \end{array} \right] \begin{array}{l} \leftarrow 4 \\ \uparrow 4 \end{array} -1$$

$$\left[ \begin{array}{ccc|c} 1 & -2 & 0 & -5/4 \\ 0 & 1 & 0 & 4 \\ 0 & 0 & 1 & 13/4 \end{array} \right] \uparrow 2$$

$$2 - \frac{13}{4} = \frac{8}{4} - \frac{13}{4} = \frac{-5}{4}$$

$$\left[ \begin{array}{ccc|c} 1 & 0 & 0 & -10 \\ 0 & 1 & 0 & 4 \\ 0 & 0 & 1 & 13/4 \end{array} \right]$$

$$\Leftrightarrow \begin{cases} x = -10 \\ y = 4 \\ z = 13/4 \end{cases}$$