

$$9.(n) \left( \begin{array}{ccc|c} -40 & 16 & 9 & 1 \\ 13 & -5 & -3 & -2 \\ 5 & -2 & -1 & -1 \end{array} \right) R_3 \rightarrow \frac{1}{5} R_3$$

$$\left( \begin{array}{ccc|c} -40 & 16 & 9 & 1 \\ 13 & -5 & -3 & -2 \\ 1 & -\frac{2}{5} & -\frac{1}{5} & -\frac{1}{5} \end{array} \right) R_1 \leftrightarrow R_3$$

$$\left( \begin{array}{ccc|c} \textcircled{1} & -\frac{2}{5} & -\frac{1}{5} & -\frac{1}{5} \\ 13 & -5 & -3 & -2 \\ -40 & 16 & 9 & 1 \end{array} \right) \begin{array}{l} R_2 \rightarrow R_2 - 13R_1 \\ R_3 \rightarrow R_3 + 40R_1 \end{array}$$

$$\left( \begin{array}{ccc|c} 1 & -\frac{2}{5} & -\frac{1}{5} & -\frac{1}{5} \\ 0 & \textcircled{\frac{1}{5}} & -\frac{2}{5} & \frac{3}{5} \\ 0 & 0 & 1 & -7 \end{array} \right) R_2 \rightarrow 5R_2$$

$$\left( \begin{array}{ccc|c} 1 & -\frac{2}{5} & -\frac{1}{5} & -\frac{1}{5} \\ 0 & \textcircled{1} & -2 & 3 \\ 0 & 0 & 1 & -7 \end{array} \right) R_1 \rightarrow R_1 + \frac{2}{5} R_2$$

$$\left( \begin{array}{ccc|c} 1 & 0 & -1 & 1 \\ 0 & 1 & -2 & 3 \\ 0 & 0 & \textcircled{1} & -7 \end{array} \right) \begin{array}{l} R_1 \rightarrow R_1 + R_3 \\ R_2 \rightarrow R_2 + 2R_3 \end{array}$$

$$\left( \begin{array}{ccc|c} 1 & 0 & 0 & -6 \\ 0 & 1 & 0 & -11 \\ 0 & 0 & 1 & -7 \end{array} \right) \begin{array}{l} x = -6 \\ y = -11 \\ z = -7 \end{array} \text{ or } \boxed{(-6, -11, -7)}$$