

$$4. \quad \begin{aligned} 5x - y - z &= 2 \\ 3x + 2y - z &= 4 \end{aligned}$$

$$\begin{aligned} 2x - 4y &= 9 \\ 3x + 5y &= 2 \\ 7x - 3y &= 8 \end{aligned}$$

$$\begin{bmatrix} 5 & -1 & -1 & 2 \\ 3 & 2 & -1 & 4 \end{bmatrix}$$

$$R_1 \div 5 = \text{NEW } R_1 \quad \begin{bmatrix} 1 & -\frac{1}{5} & -\frac{1}{5} & \frac{2}{5} \\ 3 & 2 & -1 & 4 \end{bmatrix}$$

$$\frac{3}{5} + 2 \quad \frac{3}{5} - 1 \quad -\frac{6}{5} + 4$$

$$-3R_1 + R_2 = \text{NEW } R_2 \quad \begin{bmatrix} 1 & -\frac{1}{5} & -\frac{1}{5} & \frac{2}{5} \\ 0 & \frac{13}{5} & -\frac{2}{5} & \frac{14}{5} \end{bmatrix}$$

$$5R_2 = \text{NEW } R_2 \quad \begin{bmatrix} 1 & -\frac{1}{5} & -\frac{1}{5} & \frac{2}{5} \\ 0 & 13 & -2 & 14 \end{bmatrix}$$

$$R_2 \div 13 = \text{NEW } R_2 \quad \begin{bmatrix} 1 & -\frac{1}{13} & -\frac{1}{13} & \frac{2}{13} \\ 0 & 1 & -\frac{2}{13} & \frac{14}{13} \end{bmatrix}$$

$$\begin{aligned} \frac{1}{5} \left(-\frac{2}{13} \right) - \frac{1}{5} & \quad \frac{1}{5} \left(\frac{14}{13} \right) + \frac{2}{5} \\ \frac{-2}{65} - \frac{1}{5} & \quad \frac{14}{65} + \frac{26}{65} \\ \frac{-2}{65} - \frac{13}{65} & \quad \frac{40}{65} \\ & \quad \frac{8}{13} \\ & \quad -\frac{15}{65} \\ & \quad -\frac{3}{13} \end{aligned}$$

$$\frac{1}{5}R_2 + R_1 = \text{NEW } R_1 \quad \begin{bmatrix} 1 & 0 & -\frac{3}{13} & \frac{8}{13} \\ 0 & 1 & -\frac{2}{13} & \frac{14}{13} \end{bmatrix}$$



$$\begin{aligned} 1x + 0y - \frac{3}{13}z &= \frac{8}{13} & 0x + 1y - \frac{2}{13}z &= \frac{14}{13} \\ x - \frac{3}{13}z &= \frac{8}{13} & y - \frac{2}{13}z &= \frac{14}{13} \\ x &= \frac{3}{13}z + \frac{8}{13} & y &= \frac{2}{13}z + \frac{14}{13} \end{aligned}$$

$$\left(\frac{3}{13}z + \frac{8}{13}, \frac{2}{13}z + \frac{14}{13}, z \right)$$

$$\left(\frac{3}{13}t + \frac{8}{13}, \frac{2}{13}t + \frac{14}{13}, t \right)$$

CALCULATION

$$\begin{bmatrix} 5 & -1 & -1 & 2 \\ 3 & 2 & -1 & 4 \end{bmatrix} \quad 2 \times 4$$