Department of Mathematical Sciences
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Gauss Jordan Elimination

$$\begin{bmatrix} 1 & -2 & 5 & 6 \\ 4 & -8 & 21 & 25 \\ 5 & -9 & 22 & 30 \end{bmatrix} \sim \quad R_2 \leftarrow -4R_1 + R_2$$

$$\begin{bmatrix} 1 & -2 & 5 & 6 \\ 0 & 0 & 1 & 1 \\ 5 & -9 & 22 & 30 \end{bmatrix} \sim \quad R_3 \leftarrow -5R_1 + R_3$$

$$\begin{bmatrix} 1 & -2 & 5 & 6 \\ 0 & 0 & 1 & 1 \\ 0 & 1 & -3 & 0 \end{bmatrix} \sim \quad R_2 \leftrightarrow R_3$$

$$\begin{bmatrix} 1 & -2 & 5 & 6 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix} \sim \quad R_1 \leftarrow 2R_2 + R_1$$

$$\begin{bmatrix} 1 & 0 & -1 & 6 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix} \sim \quad R_1 \leftarrow 1R_3 + R_1$$

$$\begin{bmatrix} 1 & 0 & 0 & 7 \\ 0 & 1 & -3 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix} \sim \quad R_2 \leftarrow 3R_3 + R_2$$

$$\begin{bmatrix} 1 & 0 & 0 & 7 \\ 0 & 1 & 0 & 3 \\ 0 & 0 & 1 & 1 \end{bmatrix}$$

$$(7, 3, 1)$$