

Q6

$$\begin{aligned}
 & \left[ \begin{array}{ccc|cc} 1 & 0 & 2 & -3 & 0 & 0 \\ 0 & 1 & -1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{array} \right] \rightarrow \left[ \begin{array}{cc} 1 & 0 \\ 0 & 1 \\ 0 & 0 \end{array} \right] \\
 & \left[ \begin{array}{ccc|cc} 1 & 0 & 2 & -3 & 0 & 0 \\ 0 & 1 & -1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{array} \right] \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix} \rightarrow \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \left[ \begin{array}{ccc|cc} 1 & 0 & 2 & -3 & 0 & 0 \\ 0 & 1 & -1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{array} \right]
 \end{aligned}$$

$$x_3 = t$$

$$x_4 = s$$

$$x_5 = 0$$

$$x_1 = 3s - 2t$$

$$x_2 = t - s$$

$$\therefore \begin{bmatrix} 3s-2t \\ t-s \\ t \end{bmatrix} = t \begin{bmatrix} -2 \\ 1 \\ 1 \end{bmatrix} + s \begin{bmatrix} 3 \\ -1 \\ 0 \end{bmatrix}$$