

Elimination

$$\left[\begin{array}{ccc|c} \underline{-3} & 2 & -1 & -1 \\ 6 & -6 & 7 & -7 \\ 3 & -4 & 4 & -6 \end{array} \right]$$

2 of R1 to R2, 1 of R1 to R3

$$\left[\begin{array}{ccc|c} -3 & 2 & -1 & -1 \\ 0 & \underline{-2} & 5 & -9 \\ 0 & -2 & 3 & -7 \end{array} \right]$$

-1 of R2 to R3

$$\left[\begin{array}{ccc|c} -3 & 2 & -1 & -1 \\ 0 & -2 & 5 & -9 \\ 0 & 0 & -2 & 2 \end{array} \right]$$

$$\vec{x} = \begin{bmatrix} 2 \\ 2 \\ -1 \end{bmatrix}$$

$$-2x_3 = 2$$

$$x_3 = -1$$

$$-2x_2 - 5 = -9$$

$$-2x_2 = -4$$

$$x_2 = 2$$

$$-3x_1 + 4 + 1 = -1$$

$$-3x_1 = -6$$

$$x_1 = 2$$