

Represent each linear system as a vector equation and matrix equation. Then solve the given systems of equations.

$$\begin{aligned}5x_1 - 6x_2 &= 4 \\3x_1 + 7x_2 &= 8\end{aligned}$$

$$\begin{aligned}x_1 + 2x_2 + x_3 &= 1 \\3x_1 + x_2 + 4x_3 &= 0 \\2x_1 + 2x_2 + 3x_3 &= 2\end{aligned}$$

$$\begin{aligned}x_1 + 4x_2 - 2x_3 &= 4 \\2x_1 + 7x_2 - x_3 &= -2 \\2x_1 + 9x_2 - 7x_3 &= 1\end{aligned}$$

$$\begin{aligned}x_1 - 3x_2 + 2x_3 - x_4 &= 8 \\3x_1 - 7x_2 + x_4 &= 0\end{aligned}$$