

$$\begin{aligned}4x_1 + x_2 - x_3 &= 3 \\x_1 + 6x_2 - 2x_3 + x_4 - x_5 &= -6 \\x_2 + 5x_3 - x_5 + x_6 &= -5 \\2x_2 + 5x_4 - x_5 - x_7 - x_8 &= 0 \\-x_3 - x_4 + 6x_5 - x_6 - x_8 &= 12 \\-x_3 - x_5 + 5x_6 &= -12 \\-x_4 + 4x_7 - x_8 &= -2 \\-x_4 - x_5 - x_7 + 5x_8 &= 2\end{aligned}$$