Use the Gauss-Jordan reduction to solve the following linear system:

$$\begin{cases} x_1 - x_2 - 2x_3 & = -1 \\ 4x_1 - 5x_2 - 8x_3 & = -6 \\ 3x_1 - 6x_3 & = 3 \end{cases}$$

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} \phantom{xx} \\ \phantom{xx} \\ \phantom{xx} \end{bmatrix} + s \begin{bmatrix} \phantom{xx} \\ \phantom{xx} \\ \phantom{xx} \end{bmatrix}$$

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$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 1 \\ 2 \\ 0 \end{bmatrix} + s \begin{bmatrix} 2 \\ 0 \\ 1 \end{bmatrix}$$