Bellwork Alg 2A 5th Hour Friday, January 13, 2017 Solve each matrix equation using the graphing calculator.

1.
$$-5\begin{bmatrix} 7 & 9 \\ 4 & -1 \end{bmatrix} X = \begin{bmatrix} 125 & -95 \\ 225 & -300 \end{bmatrix}$$

2.
$$\begin{bmatrix} 11 \\ 2 \\ -6 \end{bmatrix} - \begin{bmatrix} 4 & 2 & 1 \\ 7 & -1 & 0 \\ 8 & 1 & 3 \end{bmatrix} X = \begin{bmatrix} -9 \\ 9 \\ -4 \end{bmatrix}$$

3.
$$2\begin{bmatrix} 4 & 3 \\ 5 & 6 \end{bmatrix} + \begin{bmatrix} 5 & -2 \\ 8 & 0 \end{bmatrix} X = \begin{bmatrix} 21 & 19 \\ 2 & 36 \end{bmatrix}$$

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Answer

1.
$$-5\begin{bmatrix} 7 & 9 \\ 4 & -1 \end{bmatrix} X = \begin{bmatrix} 125 & -95 \\ 225 & -300 \end{bmatrix}$$

$$\begin{bmatrix} -35 - 45 \\ -20 5 \end{bmatrix} X = \begin{bmatrix} 125 - 95 \\ 225 - 300 \end{bmatrix}$$

$$A X = B$$

$$X = A^{-1} \cdot B = \begin{bmatrix} -10 & 13 \\ 5 & -8 \end{bmatrix}$$

$$2. \begin{bmatrix}
-11 \\
2 \\
-6
\end{bmatrix} - \begin{bmatrix}
4 & 2 & 1 \\
7 & -1 & 0 \\
8 & 1 & 3
\end{bmatrix} X = \begin{bmatrix}
-9 \\
9 \\
-4
\end{bmatrix} - \begin{bmatrix}
-11 \\
2 \\
-6
\end{bmatrix}$$

$$\begin{bmatrix} -4 & -2 & -1 \\ -7 & 1 & 0 \\ -8 & -1 & -3 \end{bmatrix} X = \begin{bmatrix} 2 \\ 7 \\ 2 \end{bmatrix}$$

$$X = A^{-1} B = \begin{bmatrix} -1 \\ 0 \\ 2 \end{bmatrix}$$

$$AX = B$$

$$X = A^{-1}R = \begin{bmatrix} -1 \\ 0 \\ 2 \end{bmatrix}$$

3.
$$2\begin{bmatrix} 4 & 3 \\ 5 & 6 \end{bmatrix} + \begin{bmatrix} 5 & -2 \\ 8 & 0 \end{bmatrix} X = \begin{bmatrix} 21 & 19 \\ 2 & 36 \end{bmatrix}$$

$$\begin{bmatrix} 8 & 6 \\ 10 & 12 \end{bmatrix} + \begin{bmatrix} 5-2 \\ 8 & 0 \end{bmatrix} X = \begin{bmatrix} 21 & 19 \\ 2 & 36 \end{bmatrix} - \begin{bmatrix} 8 & 6 \\ 10 & 12 \end{bmatrix}$$

$$\begin{bmatrix} 5 - 2 \\ 8 0 \end{bmatrix} X = \begin{bmatrix} 13 & 13 \\ -8 & 24 \end{bmatrix}$$

$$\begin{bmatrix} 5 - 2 \\ 8 0 \end{bmatrix} X = \begin{bmatrix} 13 & 13 \\ -8 & 24 \end{bmatrix} \qquad X = A^{-1}B = \begin{bmatrix} -1 & 3 \\ -9 & 1 \end{bmatrix}$$

$$A X = B$$