

Find the matrix X that makes each equation true:

$$1) \quad X + \begin{bmatrix} -5 & 0 \\ 4 & -3 \end{bmatrix} = \begin{bmatrix} 7 & -8 \\ -3 & 5 \end{bmatrix}$$

$$2) \quad -X + \begin{bmatrix} -3 & 1 \\ 4 & 7 \end{bmatrix} = \begin{bmatrix} 8 & -9 \\ 0 & 10 \end{bmatrix}$$

$$3) \quad 3X - \begin{bmatrix} 11 & -6 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} -13 & 15 \\ -19 & 2 \end{bmatrix}$$

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$$A = \begin{bmatrix} 1 & 5 \\ -3 & 2 \\ 3 & 1 \end{bmatrix} \quad B = \begin{bmatrix} 2 & 4 \\ 0 & 6 \\ 3 & -5 \end{bmatrix}$$

Find $-3A - B$ and $2(B - A)$

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Find $-3A - B$ and $2(B - A)$

$$\begin{bmatrix} 3 & -5 & 0 & 2 \\ -1 & 1 & 3 & -4 \end{bmatrix} \begin{bmatrix} 6 & 8 \\ 0 & -2 \\ 4 & 5 \\ 2 & 6 \end{bmatrix} =$$

and

$$\begin{bmatrix} 1 & 2 & 3 & 4 & 5 \\ 0 & 1 & 2 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 1 \\ -1 & 2 \\ 0 & 3 \\ -2 & 4 \\ 1 & 5 \end{bmatrix} =$$

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and

$$\begin{bmatrix} 0 & 1 & 0 & 1 \\ 2 & 1 & -1 & 1 \\ 3 & 8 & -10 & 0 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ 7 \\ -2 \end{bmatrix} =$$

$$\begin{bmatrix} 0 & 2 & 0 & 4 \\ -1 & 0 & -3 & 0 \\ 0 & 8 & 0 & -5 \\ -2 & 0 & -4 & 0 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ 4 \\ 4 \end{bmatrix} =$$

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$$[1 \quad -2 \quad -3] \begin{bmatrix} 2 \\ -1 \\ 1 \end{bmatrix} =$$

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$$\begin{bmatrix} 2 \\ -1 \\ 1 \end{bmatrix} [1 \quad -2 \quad -3] =$$

$$A = \begin{bmatrix} 5 & -2 \\ 3 & 1 \end{bmatrix}$$

$$A^2 = ?$$

$$A^3 = ?$$

$$A = \begin{bmatrix} -7 & -2 \\ 1 & 6 \end{bmatrix}$$

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Directions: Using the digits 1-9, each only once, fill in the blanks to create the smallest possible value for a.

$$\begin{bmatrix} - & - & - \\ - & - & - \end{bmatrix} \begin{bmatrix} - \\ - \\ - \end{bmatrix} = \begin{bmatrix} a \\ b \end{bmatrix}$$

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CHALLENGE Find the missing values in

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix} \cdot \begin{bmatrix} 4 & 3 \\ 2 & 5 \end{bmatrix} = \begin{bmatrix} 10 & 11 \\ 20 & 29 \end{bmatrix}$$

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$$\begin{bmatrix} -4 \\ 8 \end{bmatrix} \cdot \begin{bmatrix} -3 & -1 \end{bmatrix}$$

$$\begin{bmatrix} -6 & 4 & -9 \\ 2 & 8 & 7 \end{bmatrix} \cdot \begin{bmatrix} 7 \\ 2 \\ 4 \end{bmatrix}$$

$$\begin{bmatrix} -1 & 0 & 6 \\ -4 & -10 & 4 \end{bmatrix} \cdot \begin{bmatrix} 5 & -7 \\ -2 & -9 \end{bmatrix}$$

$$\begin{bmatrix} -4 \\ 8 \end{bmatrix} \cdot \begin{bmatrix} -3 & -1 \end{bmatrix}$$

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