

Show all of your work, not just the calculator result!!

1. Given $A = \begin{pmatrix} -8 & 7 \\ -3 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} -6 & -9 \\ 5 & 6 \end{pmatrix}$, find the following:

(a) $2A + 3B$

(b) $3A + 2B$

(c) $3B - 2A$

(d) $2A - 3B$

(e) $3A - 2B$

2. Find $3y - 2x$ where $X = \begin{pmatrix} -16 & 34 & -9 & 16 \\ 48 & -8 & 27 & -6 \\ -7 & 32 & -5 & 23 \end{pmatrix}$ and $Y = \begin{pmatrix} 27 & -10 & -29 & 51 \\ -6 & 42 & -21 & -3 \\ 66 & -13 & 49 & 20 \end{pmatrix}$.

3. Find the product: $\begin{pmatrix} -6 & 7 \\ 9 & -5 \\ -2 & 11 \end{pmatrix} \begin{pmatrix} -3 \\ 11 \end{pmatrix}$

4. Find the product: $(5 \quad -12 \quad 8) \begin{pmatrix} -4 & 5 \\ 6 & -7 \\ 9 & 11 \end{pmatrix}$

5. If $S = \begin{pmatrix} -8 & -2 \\ 6 & -5 \\ -2 & 11 \end{pmatrix}$ and $T = \begin{pmatrix} -4 & 8 & -9 \\ 11 & -6 & 12 \end{pmatrix}$

(a) Find TS .

(b) Find ST .

6. Find the product: $\begin{pmatrix} 6 & -3 & -2 \\ 4 & 2 & -7 \end{pmatrix} \begin{pmatrix} -13 & 11 & -6 \\ 8 & 9 & -6 \\ -12 & 14 & 7 \end{pmatrix}$

7. Find the product: $\begin{pmatrix} 2 & 11 & -24 \\ 0 & -4 & 15 \\ -2 & 5 & 7 \end{pmatrix} \begin{pmatrix} 3 & -3 \\ -4 & 5 \\ -2 & 0 \end{pmatrix}$