Vectors and Matrices

1. Complete the following vector operations.

a) $(1, 2)^T$.

b) $\begin{pmatrix} a \\ b \end{pmatrix} + \begin{pmatrix} 3 \\ 4 \end{pmatrix}$.

c) $c \begin{pmatrix} 5 \\ 6 \end{pmatrix}$.

2. Compute the following matrix products:

a) $(a, b) \begin{pmatrix} 1 \\ 2 \end{pmatrix}$.

b) $\begin{pmatrix} a \\ b \end{pmatrix} (1, 2)$.

c) $\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} 1 \\ 2 \end{pmatrix}$.

d) $(1, 2) \begin{pmatrix} a & b \\ c & d \end{pmatrix}$.

e) $\begin{pmatrix} a & b \\ c & d \end{pmatrix} \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$.

Try to solve these problems and then look at the solutions.

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