

Suggested problems 26

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1. If $A = \begin{pmatrix} 1 & -2 \\ 3 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 4 & -2 \\ -1 & 5 \end{pmatrix}$, find

(a) $2A + B$;

(b) AB ;

(c) BA ;

(d) $\det(A)$;

(e) A^{-1} ;

2. For each matrix given below find all eigenvalues and eigenvectors

(a) $\begin{pmatrix} 5 & -1 \\ 3 & 1 \end{pmatrix}$;

(b) $\begin{pmatrix} 3 & -2 \\ 4 & -1 \end{pmatrix}$;

(c) $\begin{pmatrix} 5 & 0 \\ 0 & 5 \end{pmatrix}$;

(d) $\begin{pmatrix} 2 & 1 \\ 0 & 2 \end{pmatrix}$.