

1. Invertible?

Determine if the following matrices are invertible. If they are, what is the inverse?

(a) $\begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix}$

(b) $\begin{bmatrix} 2 & -1 \\ -2 & 3 \end{bmatrix}$

(c) $\begin{bmatrix} 0.8 & 0.3 \\ 0.2 & 0.7 \end{bmatrix}$

2. Eigenvalues and Eigenvectors

Find the eigenvalues and the corresponding eigenvectors for the following matrices:

(a) $\begin{bmatrix} 4 & 0 \\ 0 & -5 \end{bmatrix}$

(b) $\begin{bmatrix} 3 & 0 \\ 1 & 1 \end{bmatrix}$

(c) $\begin{bmatrix} 7 & 1 \\ -4 & 3 \end{bmatrix}$

(d) $\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$

3. Let's do HW 2 problem 3