Eigenvalues and Eigenvectors

My Solutions ›

Use MATLAB to find the eigenvalues and eigenvectors of the matrix

$$A = \begin{pmatrix} -5 & 6 \\ 5 & -4 \end{pmatrix}.$$

Normalize the eigenvectors so that their second component is one.

Script

Reference Solution | Save | Reset | MATLAB Documentation (https://www.mathworks.com/help/)

```
% Define matrix A
A = [-5 6; 5 -4];
[V, D] = eig(A);
% Find eigenvalues, lambda1<lambda2
lambda1= D(1,1);
lambda2= D(2,2);
% Find eigenvectors associated with lambda1 and lambda2
%     Normalize eigenvectors so that their second component is one
v1= V(:,1) / V(2,1);
v2= V(:,2) / V(2,2);
```

▶ Run Script

Assessment: All Tests Passed

Submit

- ✓ Test the smallest eigenvalue
- ✓ Test the largest eigenvalue
- ✓ Test the eigenvector of the smallest eigenvalue
- ✓ Test the eigenvector of the largest eigenvalue

Output

```
Code ran without output.
```