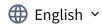
Characteristic polynomials, eigenvalues and eigenvectors



Practice Assignment • 30 min



Your grade: 90%

Your latest: 90% • Your highest: 90%

To pass you need at least 80%. We keep your highest score.

<u>Next</u> item →

1. Given a matrix $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$, recall that one can calculate its eigenvalues by solving the characteristic polynomial $\lambda^2-(a+d)\lambda+(ad-bc)=0$. In this quiz, you will practice calculating and solving the characteristic polynomial to find the eigenvalues of simple matrices.

1/1 point

For the matrix $A=\begin{bmatrix}1&0\\0&2\end{bmatrix}$, what is the characteristic polynomial, and the solutions to the characteristic polynomial?

$$\bigcirc \ \lambda^2 + 3\lambda - 2 = 0$$

$$\lambda_1 = -1, \lambda_2 = 2$$

$$\bigcap \lambda^2 + 3\lambda + 2 = 0$$

$$\lambda_1 = -1, \lambda_2 = -2$$

$$\bigcirc \ \lambda^2 - 3\lambda - 2 = 0$$

$$\lambda_1=1, \lambda_2=-2$$

$$\lambda_1 = 1, \lambda_2 = 2$$

⊘ Correct

Well done! This matrix has two distinct eigenvalues.