Oiulin Fan

Assignment readQ7-2 due 04/08/2024 at 08:01am EDT

ma217-w24

Problem 1. (1 point)

Consider the following values of λ and $A - \lambda I$.

For which of the following are the indicated values of λ eigenvalues for the matrix A?

of the matrix
$$A$$
?

• $A. \lambda = -1, A - (-1)I = \begin{bmatrix} 6 & 1 \\ -11 & -2 \end{bmatrix}$

• $B. \lambda = -2, A - (-2)I = \begin{bmatrix} 4 & 0 \\ 1 & 0 \end{bmatrix}$

• $C. \lambda = 2, A - (2)I = \begin{bmatrix} -1 & 1 \\ 2 & -3 \end{bmatrix}$

• $D. \lambda = 1, A - (1)I = \begin{bmatrix} 1 & 1 \\ -4 & -4 \end{bmatrix}$

• B.
$$\lambda = -2, A - (-2)I = \begin{bmatrix} 4 & 0 \\ 1 & 0 \end{bmatrix}$$

• C.
$$\lambda = 2, A - (2)I = \begin{bmatrix} -1 & 1 \\ 2 & -3 \end{bmatrix}$$

• D.
$$\lambda = 1, A - (1)I = \begin{bmatrix} 1 & 1 \\ -4 & -4 \end{bmatrix}$$

Answer(s) submitted:

• BD

submitted: (correct) recorded: (correct)

Problem 2. (1 point)

If for a 2×2 matrix A we know that its trace is tr(A) = -2 and its determinant is det(A) = -15, what are its eigenvalues?

(Enter your answers as a comma-separated list.)

Answer(s) submitted:

• -5,3

submitted: (correct) recorded: (correct)

Problem 3. (1 point)

Suppose that for a 5×5 matrix A we know its eigenvalues are $\lambda_1, \lambda_2, \lambda_3, \lambda_4, \lambda_5 = -3, -1, 2, 3, 4$. What are the trace and determinant of A?

$$tr(A) = \underline{\hspace{1cm}}$$

 $det(A) = \underline{\hspace{1cm}}$

Answer(s) submitted:

• 5

• 72

submitted: (correct) recorded: (correct)

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