檢閱: Quiz 1 - Linear Algebra Basics

回應者

04:36
完成時間

5/5
點數

✓ **正確** 1/1 點數

1. Which statement below is TRUE? *

   ○ All square matrices are invertible.

   ○ The dot product of two vectors is a matrix

   ○ The outer product of two vectors is a scalar

   ◉ PCA assumes that the principal components are orthogonal ✓

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2. When two different vectors are orthonormal, what is the value of their inner product? *

   ◉ 0 ✓

   ○ 1

   ○ Unknown

   ○ Any value

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3. Suppose we have two numpy matrix A = [[1, 0], [0, 1]] and B = [[5, 6], [7, 8]]. What is the output of np.matmul(A, B)? *

   ○ [[1, 0], [0, 1]]

   ○ [[5, 0], [0, 8]]

   ◉ [[5, 6], [7, 8]] ✓

   ○ Undefined

4. For a non-zero vector x with more than 1 non-zero component. Which norm of x will be larger? *l*1 or *l*2? *

⦿ l1 ✓

◯ l2

◯ They are equal.

◯ Both are 0

5. Given a square matrix A, suppose Ax=λx, λ is a scalar and x is a non-zero vector. Which statement below is TRUE? *

◯ x is an eigenvalue of A

◯ λ is an eigenvector of A

⦿ λ is the eigenvalue corresponding to eigenvector x ✓

◯ Matrix A changed the direction of vector x