AIS Learning

B.Sc. Physical Sciences - Pure Mathematics Practice Tutorial

Lesson 01: Matrix Algebra

1. Definition of a Matrix:
   - a. What is a matrix?
   - b. Define the dimensions of a matrix.

2. Matrix Operations:
   - a. Define matrix addition and subtraction.
   - b. Can you multiply any two matrices?

3. Scalar Multiplication:
   - a. Explain scalar multiplication of a matrix.
   - b. What happens when you multiply a matrix by the scalar 0?

4. Matrix Multiplication:
   - a. Define matrix multiplication.
   - b. Explain the conditions for the product of two matrices to be defined.

5. Identity Matrix:
   - a. What is the identity matrix?
   - b. What happens when you multiply any matrix by the identity matrix?

6. Transpose of a Matrix:
   - a. Define the transpose of a matrix.
   - b. How does the transpose of a matrix change the dimensions?

7. Determinant of a Matrix:
   - a. Define the determinant of a 2x2 matrix.
   - b. How is the determinant affected when you swap two rows of a matrix?

8. Inverse of a Matrix:

    a. What is the inverse of a matrix?
    b. Explain how to determine if a matrix has an inverse.

9. Eigenvalues and Eigenvectors:
    a. Define eigenvalues and eigenvectors.
    b. Explain the significance of eigenvalues in linear algebra.

10. Applications of Matrix Algebra:
    a. Provide an example of a real-world application of matrix algebra.
    b. How is matrix algebra used in computer graphics?

Try those questions by yourself, and submit your answers to us.
We can evaluate it for you!!!!
Happy Learning!!!!

-Evaluation Team AIS Learning