

Name

Mastering Matrices and Their Properties

Total questions: 15

Worksheet time: 8mins

Instructor name: Dr. Ramanathan Saitechinfo

Class

Date

- What is the order of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$?
 - 2×2
 - 1×3
 - 2×3
 - 3×2
- Classify the matrix $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$ by its type.
 - Symmetric matrix
 - Zero matrix
 - Identity matrix
 - Diagonal matrix
- Determine if the matrices $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ are equal.
 - The matrices are equal but not identical.
 - No, the matrices are not equal.
 - Yes, the matrices are equal.
 - The matrices cannot be compared.
- Calculate the product of the matrices $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $\begin{bmatrix} 5 \\ 6 \end{bmatrix}$.
 - $\begin{bmatrix} 17 \\ 39 \end{bmatrix}$
 - $\begin{bmatrix} 10 \\ 24 \end{bmatrix}$
 - $\begin{bmatrix} 20 \\ 30 \end{bmatrix}$
 - $\begin{bmatrix} 15 \\ 35 \end{bmatrix}$
- What is the property of a matrix that states $A + B = B + A$?
 - Commutative property of addition
 - Associative property of addition
 - Identity property of addition
 - Distributive property of multiplication

13. Determine if the matrices $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $\begin{bmatrix} 1 & 2 \\ 4 & 3 \end{bmatrix}$ are equal.
- a) The first matrix is larger. b) The matrices are not equal.
c) The matrices are both zero matrices. d) The matrices are equal.
14. Calculate the product of the matrices $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ and $\begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$.
- a) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ b) $\begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$
c) $\begin{bmatrix} 5 & 7 \\ 6 & 8 \end{bmatrix}$ d) $\begin{bmatrix} 12 & 14 \\ 16 & 18 \end{bmatrix}$
15. What property of matrices states that the product of a matrix and the identity matrix is the matrix itself?
- a) Identity Property of Matrix Multiplication b) Distributive Property of Matrix Multiplication
c) Associative Property of Matrix Multiplication d) Commutative Property of Matrix Addition

Answer Keys

1. c) 2×3
2. b) Zero matrix
3. c) Yes, the matrices are equal.
4. a) $[[17], [39]]$
5. a) Commutative property of addition
6. a) 3×3
7. a) Identity matrix
8. a) No
9. a) $[[2, 1], [4, 3]]$
10. d) -2
11. c) 1×3
12. c) Rectangular matrix (rank-deficient)
13. b) The matrices are not equal.
14. b) $[[5, 6], [7, 8]]$
15. a) Identity Property of Matrix Multiplication

