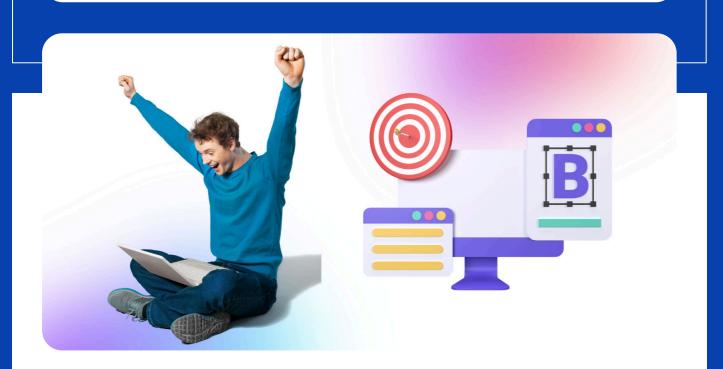# MATRICES

Matrices are an important concept within mathematics wielding a broad application across sundry fields. From computer science to physics, matrices play a crucial role in unraveling complex problems and symbolizing data in a structured approach. Inward this blog, we shall delve into the matrix world, comprehending their importance, and reconnoitering the motley matrix types and their attributes. Matrices, the cornerstones of linear algebra, are an irreplaceable tool in the vast domain of mathematics. Their influence extends beyond the boundaries of pure mathematics, permeating a myriad of fields, including computer science, physics, and economics.

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Q1: What kind of matrix has all non-diagonal elements as zero?

A: Identity matrix
B: Diagonal matrix
C: Zero matrix
D: Symmetric matrix

Q2: How do you denote the transpose of a matrix A?

A: A^T
B: A^-1
C: A'
D: A^*

Q3: What is the number of rows in a 4x3 matrix?

A: 3
B: 4
C: 12
D: None of the above

Q4: What is the determinant of a 2x2 identity matrix?

A: 0
B: 1
C: 2
D: 4

Q5: The order of a 5x5 matrix is

A: 5
B: 10
C: 25
D: 30

Q6: If A is a 3x3 matrix, what is the size of A^T?

A: 3x3
B: 9x3
C: 3x9
D: 9x9

Q7: Which of the following matrices can be inverted?

A: A singular matrix
B: A scalar matrix
C: The zero matrix
D: A square matrix

Q8: The trace of a matrix A is equal to

A: The determinant of A
B: The sum of the diagonal elements
C: The largest eigenvalue
D: The rank of A

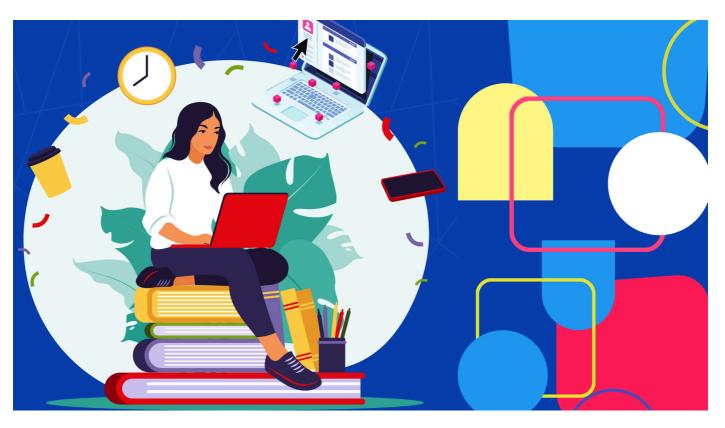### Q9: If A is invertible, which of the following must be true?

A: A is a square
B: $Det(A) \neq 0$
C: A has linearly independent columns
D: All of the above

Q10: Which of the following statements is true for the matrix product AB?

A: The number of columns in A must equal the number of rows in B
B: The number of rows in A must equal the number of columns in B
C: A and B must have the same number of rows
D: A and B must have the same number of columns

Answers

Q1: B - Diagonal matrix

Q2: A - A^T

Q3: A - 3

Q4: B - 1

Q5: C - 25

Q6: C - 3x9

Q7: D - A square matrix

Q8: B - The sum of the diagonal elements

Q9: D - All of the above

Q10: A - The number of columns in A must equal the number of rows in B