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Matric/no:-18/SCI01/072

Department:-computer science

Course:-math 204

 Answer

A group of numbers or letters arranged in a rectangular form and enclosed in a bracket is called matrix (plural matrices).

 A matrix is described by its number of rows and its number of columns. The rows of a matrix are horizontal while the columns are vertical.

 The three matrices A,B and C with their definition are shown below.

 A=[1 4 2]

 [5 3 4]

 [7 8 9]

 This matrix can as 3\*3 since it has three rows and three columns.

B=[1 2 3] This matrix can be as 1\*3 matrix since it has one row and 3 columns.

C=[3]

 [4]

 [2] This matrix can be define as 3\*1 matrix, since it has 3 rows and 1 column.

 1 vector X =(a b c)

 A1 X + b1 y + c1Z=X

 A2 x + b2y + c2Z=Y

 A3X + b3y + C3Z = Z

 X=[ a1 b1 c1] [x] [X] [ a1 x b1 x c1 x] [X]

 [ a2 b2 c2] [y]= [y]= [ a2 y b2 y c2 y] = [y]

 [ a3 b3 c3 ] [Z] [Z] [a3 z b3 z c3 z] [Z]

 The matrix [ a1 b1 c1]

 [ a2 b2 c2] transform to vector [X]

 [a3 b3 c3] [y]

 [Z]

 To [a1X b1X C1X]

 [a2y b2y C2y]

 [a3Z b3Z c3Z] the linear transformation of A = X=[a b c] =[X]

 [y] of 3 dimensional vector space

 [Z]

 2 B + C transpose

 B =[ 1 2 3]

 C= [3]

 [4]

 [2]

B+ C=[1 2 3] + [3]

 [4] =[ 4 6 5]

 [2]

 [B+C]=[ 4 6 5] Hence [B+C]^T=[4]

 [6]

 [5]

3 Non-singular