Associative law for matrix multiplication

Let A = be m×n matrix , B = be n×p matrix and C = be p×q matrix, then A(BC) = (AB)C

Example Let A = , B = , C = ,

AB = , (AB)C =

BC = , A(BC) =

Distribution law for matrix multiplication

Let A = be m×n matrix , B = be n×p matrix and C = be n×q matrix, then A(B+C) =

AB+AC

Let A = be m×n matrix , B = be m×n matrix and C = be n×q matrix, then (A+B)C =

AC+BC

Example Let A = , B = , C = ,

B+C = , A(B+C) =

AB = , AC = , AB+AC =

Example Let A = , B = , C = ,

A+B = , (A+B)C =

AC = , BC =

AB+AC =

If AB = 0 then A0 , B 0

Example Let A = , B = , AB = . But A0 , B 0

If AB = AC , A0 ,then BC

Example Let A = , B = , C =

AB = AC = .But BC

The transpose of matrix

Let A = be m×n matrix the transpose of A (denoted by)

= = , 1 i m , 1 j n

Example A = , =

= B =

C = , =

Properties of transpose

1) = A

2) = +

3) =

4) =