Class Discussion

Unit 7 Topic 5 Part 2 Matrix Operation multiply

Objective: understand the multiplication rules

Define the product of two matrices

$$\underset{m\times n}{A}\cdot\underset{n\times p}{B}=\underset{m\times p}{C} \rightarrow c_{ij}=\sum_{k=1}^{n}a_{ik}b_{kj}$$

Ex 1:

$$A=\begin{bmatrix}-3 & 1 & 0 & 2\\ 2 & -1 & 3 & 1\\ 4 & 2 & 1 & -3\end{bmatrix},\quad B=\begin{bmatrix}-1 & 1 & 2\\ -2 & 3 & -1\\ 0 & 0 & 1\\ 3 & 1 & 0\end{bmatrix}$$

(1)Find C=AB

(2) Find D=BA

(3) compare if $C=D$?

Ex 2 $A=\begin{bmatrix}-2 & 1 & 0\\ 0 & -1 & 1\\ 3 & 0 & 2\end{bmatrix}$, evaluate $f(A)$ if $F(x)=x^2+x+I_3$