

CH03_05

< Multiplicative Identities >

$$X = \begin{pmatrix} 1 & 0 & \cdots & 0 \\ 0 & 1 & \cdots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \cdots & 1 \end{pmatrix} \leadsto AX = A$$

Identities
항등행렬이다!

$$(R^{n \times n})$$

행렬은 곱셈 곱셈

이므로 $n=n$

$$\therefore R^{n \times n}$$

< Inverse Matrices ($R^{2 \times 2}$ case) > : 역행렬.

$$A = \begin{pmatrix} a & b \\ c & d \end{pmatrix} \rightarrow A^{-1} = \frac{1}{ad-bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

$$\text{ex: } B = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \rightarrow B^{-1} = \frac{1}{1 \cdot 4 - 2 \cdot 3} \begin{pmatrix} 4 & -2 \\ -3 & 1 \end{pmatrix} = -\frac{1}{2} \begin{pmatrix} 4 & -2 \\ -3 & 1 \end{pmatrix}$$

Determinants : 역행렬이 존재하지 않을 때 : $ad-bc=0$

$$\det(A) = |A| = ad-bc$$

$$R^{2 \times 2} \rightarrow R^{3 \times 3} \rightarrow R^{4 \times 4} \rightarrow \cdots \rightarrow R^{n \times n}$$