<u>Theorem</u>: If A is invertible,  $A^{-1}$  is unique.

Due to Associativity So, AA' = A'A = I = AA'' = A''Aof Matrix Multiplication A' = A'I = A'(AA'') = (A'A)A'' = IA'' = A''Be careful!  $A^{-1} \neq \frac{1}{A}$ 

Theorem:

If A is invertible, the system of linear

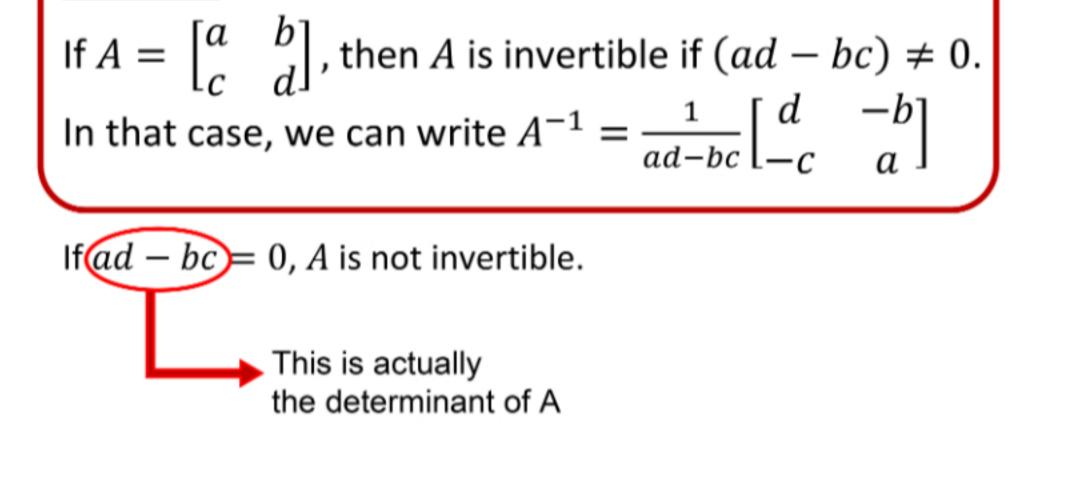
 $x = A^{-1}b$  for any  $b \in \mathbb{R}^n$ 

equations Ax = b has the unique solution

Assume that there are two inverses A', A''

Theorem: If  $A=\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ , then A is invertible if  $(ad-bc)\neq 0$ . In that case, we can write  $A^{-1}=\frac{1}{ad-bc}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$ 

If ad - bc = 0, A is not invertible.



Mark as completed

<u>Theorem</u>: