# Key Takeaways

## Properties of Inverse of a matrix

If $A$ is a non – singular matrix ,

- $|A^{-1}| \neq 0$

$$\det(A \cdot B) = \det(A) \cdot \det(B)$$

$$\det(I) = 1$$

$AA^{-1} = I$

$\Rightarrow \det(A \cdot A^{-1}) = \det(I)$

$\Rightarrow |A|\,|A^{-1}| = 1$

$\Rightarrow |A^{-1}| = \frac{1}{|A|} \quad (\because |A| \neq 0)$

$\Rightarrow |A^{-1}| = \frac{1}{|A|}$ → non singular

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