

Key Takeaways

Properties of Inverse of a matrix

If matrix A is invertible, then

- $\text{adj}(kA) = k^{n-1} \text{adj}(A)$, where k is scalar & n is the order of matrix

Proof: $\text{adj}(kA) = |kA|(kA)^{-1}$

$$= k^n |A| \frac{1}{k} A^{-1}$$

$$= k^{n-1} |A| A^{-1}$$

$$\boxed{\text{adj}(kA) = k^{n-1} \text{adj}(A)}$$

$$\text{adj}(A) = |A| A^{-1}$$

$$|kA| = k^n |A|$$

$$(kA)^{-1} = \frac{1}{k} A^{-1}$$