

Properties of Inverse of a matrix

If matrix A is invertible, then

$$(A^{-1})^T = (A^T)^{-1}$$

Proof:

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

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

$$= \frac{\text{adj}(A^T)}{|A^T|}$$

$$= (A^T)^{-1}$$

$$(\text{adj}(A))^T = \text{adj}(A^T)$$