轉置矩陣、反矩陣、矩陣乘積 觀念問題

88 交大電子

If $A^T = A^{-1}$, then $\det(A) = 1$.

Ans.

$$\det(A^T) = \det(A)$$

$$\det(A^T) = \frac{1}{\det(A)}$$

$\Rightarrow \det(A) = \frac{1}{\det(A)}$ $\Rightarrow \det(A)^2 = 1$ $\Rightarrow \det(A) = \pm 1$

$\therefore \det(A) = 1$ 是錯的