基本矩陣的行列式題目

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Let E_1 and E_2 be two elementary matrices, which symbolizes a row-interchange and column-interchange operations, respectively. Then, $\det(E_1AE_2) = \det(A)$.

Ans.

$$\det(E_1AE_2) = \det(E_1)\det(A)\det(E_2)$$

$$\det(E_1) = \det(E_2) = -1$$

$$\Rightarrow \det(E_1)\det(A)\det(E_2) = (-1)^2\det(A) = \det(A) \quad \#$$