1-4 行列式的性质

2023年9月21日 22:42

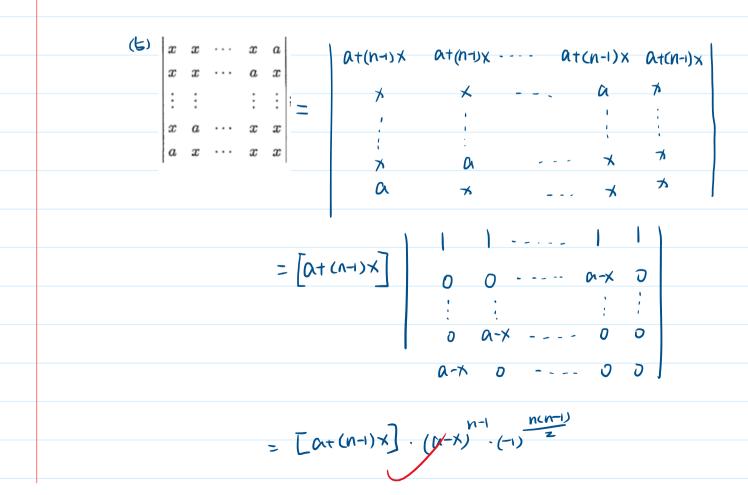
$$\begin{vmatrix} 12 & 3 & 4 \\ = - & 0 & 1 & 3 & 5 \\ 0 & 0 & 3 & -7 \\ 0 & 0 & 0 & -\frac{68}{2} \end{vmatrix} = \frac{68}{2}$$

$$\begin{vmatrix} 1^3 & 2^3 & 3^3 & 4^3 \\ 4^3 & 1^3 & 2^3 & 3^3 \\ 3^3 & 4^3 & 1^3 & 2^3 \\ 2^3 & 3^3 & 4^3 & 1^3 \end{vmatrix}; = \begin{vmatrix} a & b & c & d \\ d & a & b & c \\ c & d & a & b \\ b & c & d & a \end{vmatrix}$$

1)

$$= A \cdot (a+c-b-d) \cdot \left[(a-c)^2 + (b-d)^2 \right] = \left[(a+c)^2 - (b+d)^2 \right]$$

$$= A \cdot (a+c-b-d) \cdot [a-c] + (b-d) = [a+c) \cdot (a+c) + (b+d) = [a+c) \cdot (a+c) \cdot (a+c) + (a+c) \cdot (a+c) + (a+c) \cdot (a+c) + (a+c) \cdot (a+c) \cdot (a+c) + (a+c) \cdot (a$$



$$= \left[\begin{array}{c|cccc} \alpha + (n-1) \times \end{array} \right] \cdot \left(\begin{array}{c} \alpha \times x & \cdots & x & a \\ \hline 0 & 0 & \cdots & a & x \\ \hline \vdots & \vdots & \vdots & \vdots & \vdots \\ \hline 0 & a & \cdots & 0 & x \\ \hline a & 0 & \cdots & 0 & x \end{array} \right]$$

$$= \frac{n(n-1)}{2} \cdot \alpha^{n-1} \cdot \left[\alpha - \frac{n^{2}(n-1)}{\alpha} \right]$$

$$= \frac{n(n-1)}{2} \cdot \alpha^{n-2} \cdot \left[\alpha^{2} - \frac{n^{2}(n-1)}{\alpha} \right]$$

$$2^{0} \pm 0 = 0$$
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