

75 x = 10 の式: $A = \begin{pmatrix} a & b & c & d \end{pmatrix}$

$$A = (\vec{a} \ \vec{b} \ \vec{c} \ \vec{d})$$

3211 の余因子展開

$$\begin{aligned} |A| &= c_1 A_{13}^2 + c_2 A_{23}^2 + c_3 A_{33}^2 + c_4 A_{43}^2 \\ &= (A_{13}^2 \ A_{23}^2 \ A_{33}^2 \ A_{43}^2) \downarrow \end{aligned}$$

$$B = (\vec{p} \ \vec{q} \ \vec{r} \ \vec{s}) = \begin{pmatrix} p & q & r & s \end{pmatrix}$$

$$(B_{13}^2 \ B_{23}^2 \ B_{33}^2 \ B_{43}^2) = (A_{13}^2 \ A_{23}^2 \ A_{33}^2 \ A_{43}^2)$$

$$\begin{aligned} 0 = |B| &= a_1 B_{13}^2 + a_2 B_{23}^2 + a_3 B_{33}^2 + a_4 B_{43}^2 \\ &= a_1 A_{13}^2 + a_2 A_{23}^2 + a_3 A_{33}^2 + a_4 A_{43}^2 \\ &= (A_{13}^2 \ A_{23}^2 \ A_{33}^2 \ A_{43}^2) \downarrow \end{aligned}$$

= 103

$$\tilde{A} (\vec{a} \ \vec{b} \ \vec{c} \ \vec{d}) = |A| I_4$$

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4. 2 行 2 列 矩 阵

$$A = \begin{pmatrix} a_{11} \\ a_{12} \\ a_{21} \\ a_{22} \end{pmatrix}$$

2 行 2 列 矩 阵

$$|A| = a_{11} \tilde{A}_{22} + a_{12} \tilde{A}_{21} + a_{21} \tilde{A}_{23} + a_{22} \tilde{A}_{24}$$

$$= (a_{11} \ a_{12} \ a_{21} \ a_{22}) \begin{pmatrix} \tilde{A}_{21} \\ \tilde{A}_{22} \\ \tilde{A}_{23} \\ \tilde{A}_{24} \end{pmatrix} = 1 \cdot \begin{pmatrix} \tilde{A}_{21} \\ \tilde{A}_{22} \\ \tilde{A}_{23} \\ \tilde{A}_{24} \end{pmatrix}$$

$$B = \begin{pmatrix} a_{11} \\ a_{12} \\ a_{21} \\ a_{22} \end{pmatrix}$$

1 行 2 列

$$\begin{pmatrix} \tilde{A}_{21} \\ \tilde{A}_{22} \\ \tilde{A}_{23} \\ \tilde{A}_{24} \end{pmatrix}$$

$$= \begin{pmatrix} \tilde{B}_{21} \\ \tilde{B}_{22} \\ \tilde{B}_{23} \\ \tilde{B}_{24} \end{pmatrix}$$

1 行 2 列

$$0 = |B| = c_1 \tilde{B}_{22} + c_2 \tilde{B}_{21} + c_3 \tilde{B}_{23} + c_4 \tilde{B}_{24}$$

$$= c_1 \tilde{A}_{22} + c_2 \tilde{A}_{21} + c_3 \tilde{A}_{23} + c_4 \tilde{A}_{24} = c \begin{pmatrix} \tilde{A}_{21} \\ \tilde{A}_{22} \\ \tilde{A}_{23} \\ \tilde{A}_{24} \end{pmatrix}$$

二和の了

$$\begin{pmatrix} a_1 \\ 10 \\ e \\ d_1 \end{pmatrix} \tilde{A} = |A| I_4$$

0" 徒" 了.

表と

$$A \tilde{A} = \tilde{A} A = |A| \cdot I_4$$