線形代数「余因子行列と逆行列」解答

A $A = \begin{pmatrix} 2 & -1 & -3 \\ 2 & 1 & 1 \\ -3 & 1 & 2 \end{pmatrix}$

(1) $\det(A) = -6$

(2) (3) を参照.

(3) $\tilde{A} = \begin{pmatrix} A_{11} & A_{21} & A_{31} \\ A_{12} & A_{22} & A_{32} \\ A_{13} & A_{23} & A_{33} \end{pmatrix} = \begin{pmatrix} 1 & -1 & 2 \\ -7 & -5 & -8 \\ 5 & 1 & 4 \end{pmatrix}$

(4) $A\tilde{A} = -6E_3$

B $B = \begin{pmatrix} 1 & 5 & 2 \\ 3 & -2 & 4 \\ 2 & -3 & 2 \end{pmatrix}$

(1) $\det(B) = 8$

(2) (3) を参照.

(3) $\tilde{B} = \begin{pmatrix} B_{11} & B_{21} & B_{31} \\ B_{12} & B_{22} & B_{32} \\ B_{13} & B_{23} & B_{33} \end{pmatrix} = \begin{pmatrix} 8 & -16 & 24 \\ 2 & -2 & 2 \\ -5 & 13 & -17 \end{pmatrix}$

(4) $B\tilde{B} = 8E_3$

C $C = \begin{pmatrix} 1 & 3 & -2 \\ 2 & -1 & -4 \\ 1 & -4 & -2 \end{pmatrix}$

(1) $\det(C) = 0$

(2) (3) を参照.

(3) $\tilde{C} = \begin{pmatrix} C_{11} & C_{21} & C_{31} \\ C_{12} & C_{22} & C_{32} \\ C_{13} & C_{23} & C_{33} \end{pmatrix} = \begin{pmatrix} -14 & 14 & -14 \\ 0 & 0 & 0 \\ -7 & 7 & -7 \end{pmatrix}$

(4) $C\tilde{C} = O$

(**2012** 年度前期 担当：佐藤)