

## MEEG 4703 [Quiz M1.073](#)

(20 pts) For the matrix  $\mathbf{A}$  as shown, determine (a) determinant  $\det \mathbf{A}$ , (b) cofactor matrix  $\mathbf{A}^c$ , (c) adjoint matrix  $\text{adj } \mathbf{A}$ , (d) inverse  $\mathbf{A}^{-1}$ .

$$\mathbf{A} = \begin{bmatrix} -4 & 10 & -6 \\ -8 & 17 & -10 \\ 5 & -10 & 6 \end{bmatrix}$$

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(a)  $\det \mathbf{A} = 2$  ⑤

(b)  $\mathbf{A}^c = \begin{bmatrix} 2 & -2 & -5 \\ 0 & 6 & 10 \\ 2 & 8 & 12 \end{bmatrix}$  ⑤

(c)  $\text{adj } \mathbf{A} = \begin{bmatrix} 2 & 0 & 2 \\ -2 & 6 & 8 \\ -5 & 10 & 12 \end{bmatrix}$  ⑤

(d)  $\mathbf{A}^{-1} = \begin{bmatrix} 1 & 0 & 1 \\ -1 & 3 & 4 \\ -2.5 & 5 & 6 \end{bmatrix}$  ⑤