①

$$\left\langle \begin{bmatrix} 1 \\ i \\ 1-3i \end{bmatrix}; \begin{bmatrix} 2+i \\ i \\ 2 \end{bmatrix} \right\rangle$$

$\langle V_1; V_2 \rangle \quad V_1^t * V_2 \qquad V^t = \overline{A^T}$

$$= \begin{bmatrix} 1, -i, 1+3i \end{bmatrix} \begin{bmatrix} 2+i \\ i \\ 2 \end{bmatrix} = 2+i-i^2+4+2+6i$$

$$= \boxed{5+7i}$$

②

$$\text{norm}(A) = \sqrt{\langle A, A \rangle}$$

$$= \sqrt{(5.1+6.6i)(5.1-6.6i) + (7.1-7.7i)(7.1+7.7i)} \qquad z \cdot \bar{z} = |z|^2$$

$$= \sqrt{5.1^2 + 6.6^2 + 7.1^2 + 7.7^2} = \sqrt{179.27} = 13.389 = 13.39 \qquad |C|^2 = a^2 + b^2$$

④

$$vA = c \cdot A \qquad [1\times 2] * [2\times 2] = 1\times 2 \qquad [2\times 2] * [2\times 1] = 2\times 1$$

$$vA = \begin{bmatrix} 0+2i & -2i^2 \end{bmatrix} \qquad \text{mais} \quad \boxed{AV = cV}$$

$$A \cdot V = \begin{bmatrix} 0 & 2i \\ -2i & 0 \end{bmatrix} \begin{bmatrix} i \\ 1 \end{bmatrix} = \begin{bmatrix} 0+2i \\ -2i^2+0 \end{bmatrix} = \begin{bmatrix} 2i \\ -2i^2 \end{bmatrix} = \begin{bmatrix} 2i \\ 2 \end{bmatrix} = 2\begin{bmatrix} i \\ 1 \end{bmatrix}$$

$$c \cdot V = \begin{bmatrix} 2i \\ 2 \end{bmatrix} \Rightarrow c = 2$$

1 SQUARE =

$$AV = cV$$

$$AV = A \cdot V$$

$$AV = \begin{bmatrix} 0 & -2i \\ +2i & 0 \end{bmatrix} \begin{bmatrix} i \\ 1 \end{bmatrix} = \begin{bmatrix} -2i \\ +2i^2 \end{bmatrix} = \begin{bmatrix} -2i \\ -2 \end{bmatrix}$$

$$c \cdot V = \begin{bmatrix} -2i \\ -2 \end{bmatrix} \Rightarrow \quad c = -2$$