1

$$0 = 0 + 0$$

$$\langle 0 + 0, 0 \rangle = \langle \cancel{0, 0} \rangle + \langle 0, 0 \rangle$$

$$\parallel$$

$$\langle \cancel{0, 0} \rangle$$

$$0 = \langle 0, 0 \rangle$$

$$\sqrt{(x,x)} = \|x\|$$
$$\geqslant 0$$

$\forall$ $u_1, \ldots, u_n$ báze V

$$\langle u_i, u_j \rangle := \delta_{ij} \quad \begin{matrix} 0 & i \neq j \\ 1 & i = j \end{matrix}$$

$$x = \sum x_i u_i \qquad y = \sum_j y_j u_j$$

$$\langle x, y \rangle = \sum_i \sum_j x_i y_j \underbrace{\langle u_i, u_j \rangle}_{\delta_{ij}} = \sum_i x_i y_i$$

$$\det \begin{pmatrix} \langle u_1, u_1 \rangle & \cdots & \langle u_1, u_n \rangle \\ \vdots & \ddots & \vdots \\ \langle u_n, u_1 \rangle & \cdots & \langle u_n, u_n \rangle \end{pmatrix}$$

$$\langle u_i, u_j \rangle = \langle u_j, u_i \rangle$$

$$c = \left\langle \sum_{i=1}^{n} c_i u_i , \sum_{j=1}^{n} c_j u_j \right\rangle = \sum_i \sum_j c_i c_j \langle u_i , u_j \rangle$$

$$= \sum_i \sum_j c_i c_j \langle u_i , u_j \rangle$$

$$\left(c_1 \ \dots \ c_n \right) \left(\quad \right) \begin{pmatrix} c_1 \\ \vdots \\ c_n \end{pmatrix} = \left(\sum_{i=1}^{n} c_i \langle u_i , u_1 \rangle , \ \dots \ , \sum_{i=1}^{n} c_i \langle u_i , u_n \rangle \right)$$

$$\left(c_1 \ \dots \ c_n \right)^T$$

$$c \quad G(u_1, \ldots, u_k) \cdot c^T = 0$$

$$\langle \sum c_i u_i, \sum c_i u_i \rangle = 0$$

$$\| \qquad \Rightarrow c_1 = c_2 \ldots = c_n = 0 \Rightarrow \underline{c = 0}$$

$$0$$