Ch9 Definition

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Definition 9.1 B- coordinates

$$[\vec{x}]_B := \begin{pmatrix} x_1 \\ \vdots \\ x_n \end{pmatrix}, \text{ where } B = \{v_1, v_2, \dots, v_n\},$$

and $\vec{x} = x_1\vec{v_1} + \dots + x_n\vec{v_n}$

Definition 9.4 Changes of basis matrix

$$(M_{C \leftarrow B})[\vec{x}]_B = [\vec{x}]_C$$

Theorem 9.5 $B = \{b_1, \dots, b_n\}$

$$M_{\mathcal{E} \leftarrow B} = \left([\vec{b_1}]_{\mathcal{E}} \dots [\vec{b_n}]_{\mathcal{E}}\right)$$

$$(M_{\mathcal{E} \leftarrow B})^{-1} = M_{B \leftarrow \mathcal{E}}$$