



Standard basis vectors

Define $e_i \in \mathbf{R}^n$ by $[e_i]_j = 1$ if $i = j$ and 0 otherwise. Then $e_1, e_2, \dots, e_n \in \mathbf{R}^n$ are called the *standard basis vectors* (*canonical basis vectors*) for \mathbf{R}^n . For example, in \mathbf{R}^3 ,

$$e_1 = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$

