



San José State
UNIVERSITY

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12.1.1. \mathbb{R}^n is a vector space over \mathbb{R} . The addition and scalar multiplication are defined as follows: $(x_1, \dots, x_n) + (y_1, \dots, y_n) = (x_1 + y_1, \dots, x_n + y_n)$ and $\alpha(x_1, \dots, x_n) = (\alpha x_1, \dots, \alpha x_n)$. The zero vector is $(0, \dots, 0)$.

12.1.2. \mathbb{C}^n is a vector space over \mathbb{C} . The addition and scalar multiplication are defined as follows: $(x_1, \dots, x_n) + (y_1, \dots, y_n) = (x_1 + y_1, \dots, x_n + y_n)$ and $\alpha(x_1, \dots, x_n) = (\alpha x_1, \dots, \alpha x_n)$. The zero vector is $(0, \dots, 0)$.

12.1.3. \mathbb{R}^n is a vector space over \mathbb{C} . The addition and scalar multiplication are defined as follows: $(x_1, \dots, x_n) + (y_1, \dots, y_n) = (x_1 + y_1, \dots, x_n + y_n)$ and $\alpha(x_1, \dots, x_n) = (\alpha x_1, \dots, \alpha x_n)$. The zero vector is $(0, \dots, 0)$.