

Set Addition

Definition:

Let $S, T \subseteq \mathbb{R}^n$. Then $S + T$ is defined as:

$$S + T = \{x + y \mid x \in S, y \in T\}$$

Example 1:

$$S = \{1, 2, 3\} \text{ and } T = \{0, 10\}.$$

$$\text{Then } S + T = \{1, 2, 3\} + \{0, 10\} = \{1, 2, 3, 11, 12, 13\}.$$

Example 2:

$$S = [0, 1] \text{ and } T = [0, 2]$$

$$\text{Then } S + T = [0, 1] + [0, 2] = [0, 3].$$