Terminology

We write $x \in A$ to indicate that x is an element of set A.
For example, $5 \in \mathbb{Z}$.

We write $x \notin A$ to indicate that x is not an element of A.
For example, $\sqrt{7} \notin \mathbb{Z}$.

We say that a set A is a subset of B if every element of A is an element of B. This is denoted $A \subseteq B$. For example, $\mathbb{Z} \subseteq \mathbb{R}$, where $\mathbb{Z}$ denotes the set of integers and $\mathbb{R}$ denotes the set of real numbers.

The intersection and unions of sets A and B are represented using $A \cap B$ and $A \cup B$, respectively.

The set difference between sets A and B is denoted $A \setminus B$, and is the set $\{x \in A | x \notin B\}$.

The number of elements in a set A (also called its cardinality) is denoted by $|A|$.