Definition

If every element of A is also an element of B, we say that A is a subset of B,

$$A \subseteq B.$$

- Note that $A \subseteq B$ is the same as saying

$$x \in A \implies x \in B.$$

- If we want to stress that A is a proper subset of B, i.e. $A \subseteq B$ and $A \neq B$, we write

$$A \subsetneq B.$$

- Note that

$$(A = B) \iff (A \subseteq B) \wedge (B \subseteq A).$$