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\forall for every
 \exists there exist(s)
 \nexists there does not exist
 $\exists!$ there exists a unique
 $a \Rightarrow b$ if a then b
 iff if and only if

Sets

$a \in A$ a is an element of A
 $a \notin A$ a is not an element of A
 $A \cup B$ union of A and B
 $A \cap B$ intersection A and B
 \bar{A} complement of A (in a larger set B : $\{a : a \in B, a \notin A\}$)
 $A \setminus B$ $\{a : a \in A, a \notin B\}$
 $A \Delta B$ symmetric difference of A and B : $(A \setminus B) \cup (B \setminus A)$
 \emptyset empty set
 \mathbb{C} universal set
 $A \times B$ Cartesian product of A and B : the set of all pairs (a, b) , $a \in A$, $b \in B$