

Mathematical shorthand

\Rightarrow implies

\Leftarrow is implied by

\Leftrightarrow if and only if

iff if and only if

\exists there exists

$\exists!$ there exists a unique

\forall for all

s.t. such that

w.l.o.g. without loss of generality

w.m.a. we may assume

$x \in S$ x is an element of the set S

$x \notin S$ x is not an element of the set S

$S \subseteq T$ S is a subset of the set T

$S \not\subseteq T$ S is not a subset of the set T

$S \cup T$ the union of the sets S and T

$S \cap T$ the intersection of the sets S and T

$f : S \rightarrow T$ f is a function from the set S to the set T

$\{x \in S \mid P(x)\}$ the set of all $x \in S$ which have the property $P(x)$

\mathbb{N} the natural numbers $1, 2, 3, \dots$

\mathbb{Z} the integers $0, \pm 1, \pm 2, \dots$

\mathbb{Q} the rational numbers $\{\frac{a}{b} \mid \forall a \in \mathbb{Z}, b \in \mathbb{N}\}$.

\mathbb{R} the real numbers