

ISyE/Math/CS/Stat 525: Linear Optimization

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Math symbols cheat sheet

Symbol	Meaning
i.e.	that is
s.t.	such that
or :	such that
\sum	$\sum_{k=1}^n$ means $a_1 + a_2 \cdots + a_n$
\prod	$\prod_{k=1}^n$ means $a_1 \cdot a_2 \cdots a_n$
!	$n!$ means the product $1 \cdot 2 \cdots n$
∞	∞ is an element of the extended number line that is greater than all real numbers
\Rightarrow	$A \Rightarrow B$ means B is true if A is true
\Leftrightarrow	$A \Leftrightarrow B$ means $A \Rightarrow B$ and $B \Rightarrow A$
\neg	$\neg A$ is true if and only if A is false
$\{ \}$	$\{x \mid P(x)\}$ means the set of all x for which $P(x)$ is true
$\lfloor \rfloor$	$\lfloor x \rfloor$ means the floor of x , i.e. the largest integer less than or equal to x
$\lceil \rceil$	$\lceil x \rceil$ means the ceiling of x , i.e. the smallest integer greater than or equal to x
\setminus	$A \setminus B$ means the set that contains all those elements of A that are not in B
\forall	$\forall x : P(x)$ means $P(x)$ is true for all x
\exists	$\exists x : P(x)$ means there is at least one x such that $P(x)$ is true
\in	$a \in S$ means a is an element of the set S
\notin	$a \notin S$ means a is not an element of S
\subseteq	$A \subseteq B$ means every element of A is also an element of B
\subset	$A \subset B$ means $A \subseteq B$ but $A \neq B$
\cup	$A \cup B$ means the set of those elements which are either in A , or in B , or in both
\cap	$A \cap B$ means the set that contains all those elements that A and B have in common
\mathbb{R}	\mathbb{R} means the set of real numbers
\mathbb{R}_+	\mathbb{R}_+ means the set of nonnegative real numbers
\mathbb{Z}	\mathbb{Z} means $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$
\mathbb{Z}_+	\mathbb{Z}_+ means $\{0, 1, 2, 3, \dots\}$
sup	$\sup(V)$, where $V \subseteq \mathbb{R}$, is the least number $s \in \mathbb{R}$ that is greater than or equal to all elements of V