ISyE/Math/CS 728: Integer 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 $a_1 \cdot a_2 \cdot \cdots \cdot a_n$
!	$n!$ means the product $1 \cdot 2 \cdot \cdots \cdot n$
∞	∞ 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
{:}	$\{x : P(x)\}$ 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 $\{\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots\}$
$\mathbb{Z}_+$	$\mathbb{Z}_+$ means $\{0, 1, 2, 3, \ldots\}$
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