Comprehensive List of Mathematical Symbols in LaTeX

Your Name

Symbol	**Definition**	**Example**
$+$	Addition	$2 + 3 = 5$
$-$	Subtraction	$5 - 2 = 3$
$\times$ or $\cdot$	Multiplication	$2 \times 3 = 6$ or $2 \cdot 3 = 6$
$\div$ or $/$	Division	$6 \div 2 = 3$ or $6/2 = 3$
$=$	Equals	$x = 5$
$\neq$	Not equal to	$2 \neq 3$
$<$	Less than	$2 < 3$
$>$	Greater than	$3 > 2$
$\leq$	Less than or equal to	$2 \leq 2$
$\geq$	Greater than or equal to	$3 \geq 3$
$\in$	Element of	$2 \in \{1, 2, 3\}$
$\notin$	Not an element of	$4 \notin \{1, 2, 3\}$
$\subset$	Subset of	$\{1, 2\} \subset \{1, 2, 3\}$
$\supset$	Superset of	$\{1, 2, 3\} \supset \{1, 2\}$
$\cup$	Union	$\{1, 2\} \cup \{2, 3\} = \{1, 2, 3\}$
$\cap$	Intersection	$\{1, 2, 3\} \cap \{2, 3, 4\} = \{2, 3\}$
$\emptyset$	Empty set	$\{x \in \mathbb{N} : x < 0\} = \emptyset$
$\wedge$	And	$A \wedge B$
$\vee$	Or	$A \vee B$
$\neg$	Not	$\neg A$
$\implies$	Implies	$A \implies B$
$\iff$	If and only if	$A \iff B$
$\lim_{x \to a}$	Limit	$\lim_{x \to 0} \frac{\sin x}{x} = 1$
$\frac{d}{dx}$	Derivative	$\frac{d}{dx} x^2 = 2x$
$\int$	Integral	$\int x^2 dx = \frac{1}{3} x^3 + C$
$\sum$	Summation	$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}$
$\prod$	Product	$\prod_{i=1}^{n} i = n!$
$\mathbb{N}$	Natural numbers	$\mathbb{N} = \{1, 2, 3, ...\}$
$\mathbb{Z}$	Integers	$\mathbb{Z} = \{..., -2, -1, 0, 1, 2, ...\}$
$\mathbb{Q}$	Rational numbers	$\mathbb{Q} = \{\frac{a}{b} : a, b \in \mathbb{Z}, b \neq 0\}$
$\mathbb{R}$	Real numbers	$\mathbb{R} = (-\infty, \infty)$

Symbol	**Definition**	**Example**
$\mathbb{C}$	Complex numbers	$\mathbb{C} = \{a + bi : a, b \in \mathbb{R}\}$
α	Alpha	α-particle
β	Beta	β-decay
γ	Gamma	γ-radiation
π	Pi	$\pi \approx 3.14159$
θ	Theta	$\sin\theta$
∞	Infinity	$\lim_{x\to\infty} \frac{1}{x} = 0$
∂	Partial derivative	$\frac{\partial f}{\partial x}$
∇	Gradient	$\nabla f = (\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y}, \frac{\partial f}{\partial z})$
$\forall$	For all	$\forall x \in \mathbb{R}, x^2 \geq 0$
$\exists$	There exists	$\exists x \in \mathbb{R}, x^2 = 2$
$\therefore$	Therefore	$A = B, B = C, \therefore A = C$
$\because$	Because	$x = 2 \because x^2 = 4$ and $x > 0$