LaTeX:Symbols

LaTeX

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This article will provide a short list of commonly used LaTeX symbols.

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Common Symbols

Operators

Relations

Finding Other Symbols

Here are some external resources for finding less commonly used symbols:

- Detexify is an app which allows you to draw the symbol you'd like and shows you the ET_{EX} code for it!
- MathJax (what allows us to use $L^{T}EX$ on the web) maintains a list of supported commands.
- The Comprehensive LaTeX Symbol List.

Operators

*	\star	†	\dagger	‡	\ddagger
П	\amalg	\cap	\cap	Ù	/cup
\forall	\uplus	П	\sqcap	\sqcup	\sqcup
\vee	\vee	\wedge	\wedge	\oplus	\oplus
\ominus	\ominus	\otimes	\otimes	0	\circ
•	\bullet	\Diamond	\diamond	\triangleleft	\lhd
\triangleright	\rhd	\leq	\unlhd	⊵	\unrhd
\oslash	\oslash	\odot	\odot	\bigcirc	\bigcirc
◁	\triangleleft	\Diamond	\Diamond	\triangle	\bigtriangleup
∇	\bigtriangledown		\Box	\triangleright	\triangleright
\	\setminus	}	\wr	\sqrt{x}	\sqrt{x}
x°	x^{\circ}			$\sqrt[n]{x}$	\sqrt[n]{x}
∇	\triangledown				

Relations

Symbol Command Symbol Command

```
\le
                              \ge
                                                  \neq
\sim
        \sim
                              \II
                                          \gg
                                                  \gg
        \doteq
                              \simeq
                                                  \subset
        \supset
                              \approx
                                                  \asymp
                              \supseteq \cong
        \subseteq
                                                  \cong
                              \sqsubset □
        \smile
                                                  \sqsupset
        \equiv
                              \frown
                                                  \sqsubseteq
                                          \bowtie
        \sqrupseteg \propto
                              \propto
                                                  \bowtie
                              \ni
        \in
                                                  \prec
        \succ
                              \vdash
                                                  \dashv
        \preceq
                              \succeq
                                                  \models
                              \parallel
                                                  V
        \perp
                      <u>~</u>
        \mid
                              \bumpeq
```

Negations of many of these relations can be formed by just putting \not before the symbol, or by slipping an n between the \ and the word. Here are a few examples, plus a few other negations; it works for many of the others as well.

Symbol Command Symbol Command

1	\nmid ≰	\nleq ≱	\ngeq
\nsim	\nsim ≇	\ncong	\nparallel
\angle	\not< ≯	\not> \neq	\not=
≰ ≉	\not\le ≱	\not\ge $ \sim$	\not\sim
pprox	\not\approx $ ot\cong$	\not\cong ≠	\not\equiv
V	\not\parallel ≮	\nless ≯	\ngtr
 ≠	\lneq ≥	\gneq ≲	\lnsim
\leq	\lneqq ≥	\gneqq	

To use other relations not listed here, such as =, >, and <, in LaTeX, you may just use the symbols on your keyboard.

Greek Letters

Lowercase Letters

lpha	\alpha	eta	\beta	γ	\gamma	δ	\delta
ϵ	\epsilon	ε	\varepsilon	ζ	\zeta	η	\eta
θ	\theta	ϑ	\vartheta	ι	\iota	κ	\kappa
λ	Nambda	μ	\mu	ν	\nu	ξ	\xi
π	\pi	ϖ	\varpi	ho	\rho	ϱ	\varrho
σ	\sigma	ς	\varsigma	au	\tau	v	\upsilon
ϕ	\phi	φ	\varphi	χ	\chi	ψ	\psi
ω	\omega						

Capital Letters

$Symbol\,Command\,Symbol\,Command\,Symbol\,Command$

Γ	\Gamma	Δ	\Delta	Θ	\Theta	Λ	\Lambda
Ξ	\Xi	Π	\Pi	\sum	\Sigma	Υ	\Upsilon
Φ	\Phi	Ψ	\Psi	Ω	\Omega		

Headline text

Arrows

Symbo	Command	Symbol	Command
\leftarrow	\gets	\rightarrow	\to
\leftarrow	\leftarrow	\Leftarrow	\Leftarrow
\rightarrow	\rightarrow	\Rightarrow	\Rightarrow
\leftrightarrow	\leftrightarrow	\Leftrightarrow	\Leftrightarrow
\mapsto	\mapsto	\leftarrow	\hookleftarrow
	\leftharpoonup	$\overline{}$	\leftharpoondown
\rightleftharpoons	\rightleftharpoons	\leftarrow	\longleftarrow
\iff	\Longleftarrow	\longrightarrow	\longrightarrow
\Longrightarrow	\Longrightarrow	\longleftrightarrow	Vongleftrightarrow
\iff	\Longleftrightarrow	\longmapsto	Vongmapsto
\hookrightarrow	\hookrightarrow	\rightarrow	\rightharpoonup
$\overline{}$	\rightharpoondown	\sim	\leadsto
\uparrow	\uparrow	\uparrow	\Uparrow
\downarrow	\downarrow	\Downarrow	\Downarrow
‡	\updownarrow	\updownarrow	\Updownarrow
7	\nearrow	X	\searrow
L	\swarrow	_	\nwarrow

(For those of you who hate typing long strings of letters, \iff and \implies can be used in place of \Longleftrightarrow and \Longrightarrow respectively.)

Dots

Accents

Symbol Command Symbol Command Symbol Command

Symbol Command Symbol Command

\hat{x}	\hat{x}	\check{x}	\check{x}	\dot{x}	\dot{x}
$reve{x}$	\breve{x}	\acute{x}	\acute{x}	\ddot{x}	\ddot{x}
\grave{x}	\grave{x}	\tilde{x}	\tilde{x}	\mathring{x}	\mathring{x}
\bar{x}	\bar{x}	\vec{x}	\vec{x}		

When applying accents to i and j, you can use \imath and \jmath to keep the dots from interfering with the accents:

Symbol Command Symbol Command

$$\vec{j}$$
 \vec{\jmath} \tilde{i} \tilde{\imath}

\tilde and \hat have wide versions that allow you to accent an expression:

Symbol Command Symbol Command

$$\widehat{3+x}$$
 \widehat{3+x} \widetilde{abc} \widetilde{abc}

Others

Symbo	ol Command	Symbo	l Command	Symbo	l Command
∞	\infty	\triangle	\triangle	_	\angle
×	\aleph	\hbar	\hbar	\imath	\imath
\jmath	\jmath	ℓ	\ell	Ø	\wp
\Re	\Re	\Im	\lm	Ω	\mho
1	\prime	Ø	\emptyset	∇	\nabla
\checkmark	\surd	∂	\partial	Τ	\top
Ţ	\bot	\vdash	\vdash	\dashv	\dashv
\forall	\forall	\exists	\exists	\neg	\neg
b	\flat	þ	\natural	#	\sharp
\	\backslash	n 🗌	\Box	\Diamond	\Diamond
*	\clubsuit	\Diamond	\diamondsuit	\Diamond	\heartsuit
٠	\spadesuit	\bowtie	\Join		\blacksquare
• §	<i>\S</i>	$\P_{_}$	\P	\odot	\copyright
£	\pounds	\widehat{ABC}	\overarc{ABC}(it works)	XYZ	\underarc{XYZ}(it works)
*	\bigstar				
□\squ	ıare				

Command Symbols

Some symbols are used in commands so they need to be treated in a special way.

Symbol Command Symbol Command Symbol Command

\$	\textdollar	&	\&	%	\%	#	\#
_	_	{	\{	}	\ }	\	\backslash

(Warning: Using \$ for \$ will result in \$. This is a bug as far as we know. Depending on the version of ET_{EX} this is not always a problem.)

European Language Symbols

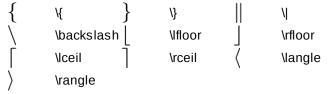
Symbol Command Symbol Command Symbol Command

 ∞ {\oe} ∞ {\ae} \emptyset {\o}

Bracketing Symbols

In mathematics, sometimes we need to enclose expressions in brackets or braces or parentheses. Some of these work just as you'd imagine in LaTeX; type (and) for parentheses, [and] for brackets, and | and | for absolute value. However, other symbols have special commands:

Symbol Command Symbol Command



You might notice that if you use any of these to typeset an expression that is vertically large, like

$$(\frac{a}{x})^2$$

the parentheses don't come out the right size:

$$(\frac{a}{x})^2$$

If we put \left and \right before the relevant parentheses, we get a prettier expression:

$$\left(\frac{a}{x}\right)^2$$

gives

$$\left(\frac{a}{x}\right)^2$$

\left and \right can also be used to resize the following symbols:

Symbol Command Symbol Command Symbol Command

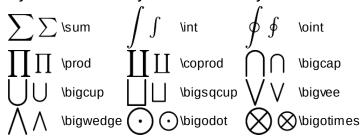
\uparrow	\uparrow ↓	\downarrow ‡	\updownarrow
\uparrow	\Uparrow ↓	\Downarrow 1	\Updownarrow

Multi-Size Symbols

Some symbols render differently in inline math mode and in display mode. Display mode occurs when you use \[...\] or \$\$...\$\$, or environments like \begin{equation}...\end{equation}, \begin{align}...\end{align}. Read more in the commands section of the guide about how symbols which take arguments above and below the symbols, such as a summation symbol, behave in the two modes.

In each of the following, the two images show the symbol in display mode, then in inline mode.

Symbol Command Symbol Command





See Also

Next: Commands

Previous: Layout

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