Supported Functions

This is a list of TeX functions supported by KaTeX. It is sorted into logical groups.

There is a similar Support Table, sorted alphabetically, that lists both supported and un-supported functions.

Accents

a' `a'`	$\tilde{a}$ `\tilde{a}`	$\mathring{g}$ `\mathring{g}`
a'' `a''`	$\widetilde{ac}$ `\widetilde{ac}`	$\overgroup{AB}$ `\overgroup{AB}`
a' `a^{\prime}`	$\utilde{AB}$ `\utilde{AB}`	$\undergroup{AB}$ `\undergroup{AB}`
$\acute{a}$ `\acute{a}`	$\vec{F}$ `\vec{F}`	$\Overrightarrow{AB}$ `\Overrightarrow{AB}`
$\bar{y}$ `\bar{y}`	$\overleftarrow{AB}$ `\overleftarrow{AB}`	$\overrightarrow{AB}$ `\overrightarrow{AB}`
$\breve{a}$ `\breve{a}`	$\underleftarrow{AB}$ `\underleftarrow{AB}`	$\underrightarrow{AB}$ `\underrightarrow{AB}`
$\check{a}$ `\check{a}`	$\overleftharpoon{ac}$ `\overleftharpoon{ac}`	$\overrightharpoon{ac}$ `\overrightharpoon{ac}`
$\dot{a}$ `\dot{a}`	$\overleftrightarrow{AB}$ `\overleftrightarrow{AB}`	$\overbrace{AB}$ `\overbrace{AB}`
$\ddot{a}$ `\ddot{a}`	$\underleftrightarrow{AB}$ `\underleftrightarrow{AB}`	$\underbrace{AB}$ `\underbrace{AB}`
$\grave{a}$ `\grave{a}`	$\overline{AB}$ `\overline{AB}`	$\overlinesegment{AB}$ `\overlinesegment{AB}`
$\hat{\theta}$ `\hat{\theta}`	$\underline{AB}$ `\underline{AB}`	$\underlinesegment{AB}$ `\underlinesegment{AB}`
$\widehat{ac}$ `\widehat{ac}`	$\widecheck{ac}$ `\widecheck{ac}`	

Accent functions inside \text{...}

See also letters

Delimiters

( ) ( )	( ) \lparen \rparen	⌈ ⌉ ⌈ ⌉	⌈ ⌉ \lceil \rceil	↑ \uparrow
[ ] [ ]	[ ] \lbrack \rbrack	⌊ ⌋ ⌊ ⌋	⌊ ⌋ \lfloor \rfloor	↓ \downarrow
{ } \{ \}	{ } \lbrace \rbrace	⎰ ⎱	⎰ \lmoustache \rmoustache	↕ \updownarrow
⟨ ⟩ ⟨ ⟩	⟨ ⟩ \langle \rangle	( ) ( )	( ) \lgroup \rgroup	⇑ \Uparrow
| |	| \vert	⌜ ⌝ ⌜ ⌝	⌜ ⌝ \ulcorner \urcorner	⇓ \Downarrow
‖ \\|	‖ \Vert	⌞ ⌟ ⌞ ⌟	⌞ ⌟ \llcorner \lrcorner	⇕ \Updownarrow
| | \lvert \rvert	‖ ‖ \lVert \rVert	\left.	\right.	\ \backslash
⟨ ⟩ \lang \rang	< > \lt \gt	⟦ ⟧ ⟦ ⟧	⟦ ⟧ \llbracket \rrbracket	{ } \lBrace \rBrace

Delimiter Sizing

$\left(AB\right)$ \left(\LARGE{AB}\right)

$((((($ (\big(\Big(\bigg(\Bigg(

\left	\big	\bigl	\bigm	\bigr
\middle	\Big	\Bigl	\Bigm	\Bigr

Environments

$a \quad b$
$c \quad d$
	`\begin{matrix}`
	`  a & b \\`
	`  c & d`
	`\end{matrix}`
		$a \quad b$
		$c \quad d$
			`\begin{array}{cc}`
			`  a & b \\`
			`  c & d`
			`\end{array}`

$\begin{pmatrix} a & b \\ c & d \end{pmatrix}$	`\begin{pmatrix}`
	`  a & b \\`
	`  c & d`
	`\end{pmatrix}`
		$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$	`\begin{bmatrix}`
			`  a & b \\`
			`  c & d`
			`\end{bmatrix}`

$\begin{vmatrix} a & b \\ c & d \end{vmatrix}$	`\begin{vmatrix}`
	`  a & b \\`
	`  c & d`
	`\end{vmatrix}`
		$\begin{Vmatrix} a & b \\ c & d \end{Vmatrix}$	`\begin{Vmatrix}`
			`  a & b \\`
			`  c & d`
			`\end{Vmatrix}`

$\begin{Bmatrix} a & b \\ c & d \end{Bmatrix}$	`\begin{Bmatrix}`
	`  a & b \\`
	`  c & d`
	`\end{Bmatrix}`
		$\left(\begin{array}{c:c:c} a & b & c \\ \hline d & e & f \\ \hdashline g & h & i \end{array}\right)$	`\def\arraystretch{1.5}`
			`  \begin{array}{c:c:c}`
			`  a & b & c \\ \hline`
			`  d & e & f \\`
			`  \hdashline`
			`  g & h & i`
			`\end{array}`

$\begin{aligned} a &= b + c \\ d + e &= f \end{aligned}$	`\begin{aligned}`
	`  a&=b+c \\`
	`  d+e&=f`
	`\end{aligned}`
		$\begin{aligned} 10x+ \ 3y &= 2 \\ 3x+13y &= 4 \end{aligned}$	`\begin{alignedat}{2}`
			`  10&x+ &3&y = 2 \\`
			`  3&x+&13&y = 4`
			`\end{alignedat}`

$\begin{gathered} a = b \\ e = b + c \end{gathered}$	`\begin{gathered}`
	`  a=b \\`
	`  e=b+c`
	`\end{gathered}`
		$x = \begin{cases} a & \text{if } b \\ c & \text{if } d \end{cases}$	`x = \begin{cases}`
			`  a &\text{if } b \\`
			`  c &\text{if } d`
			`\end{cases}`

$\left(\begin{smallmatrix} a & b \\ c & d \end{smallmatrix}\right)$	`\begin{smallmatrix}` `  a & b \\`		

Acceptable line separators include: `\\` , `\cr` , `\\[distance]` , and `\cr[distance]` . *Distance* can be written with any of the KaTeX units.

The `{array}` environment supports `|` and `:` vertical separators.

The `{array}` environment does not yet support `\cline` or `\multicolumn` .

HTML

The following "raw HTML" features are potentially dangerous for untrusted inputs, so they are disabled by default, and attempting to use them produces the command names in red (which you can configure via the `errorColor` option). To fully trust your LaTeX input, you need to pass an option of `trust: true` ; you can also enable just some of the commands or for just some URLs via the `trust` option.

KaTeX	`\href{https://katex.org/}{\KaTeX}`
https://katex.org/	`\url{https://katex.org/}`
	`\includegraphics[height=0.8em, totalheight=0.9em, width=0.9em, alt=KA logo]{https://katex.org/img/khan-academy.png}`

`\includegraphics` supports `height` , `width` , `totalheight` , and `alt` in its first argument. `height` is required.

Letters and Unicode

Greek Letters

Direct Input: $\mathrm{AB\Gamma\Delta EZH\Theta IK\Lambda MN\Xi O\Pi P\Sigma T\Upsilon\Phi X\Psi\Omega}$ $\alpha\beta\gamma\delta\epsilon\zeta\eta\theta\iota\kappa\lambda\mu\nu\xi o\pi\rho\sigma\tau\upsilon\phi\chi\psi\omega\varepsilon\vartheta\varpi\varrho\varsigma\varphi$

A `\Alpha`	B `\Beta`	Γ `\Gamma`	Δ `\Delta`
E `\Epsilon`	Z `\Zeta`	H `\Eta`	Θ `\Theta`
I `\Iota`	K `\Kappa`	Λ `\Lambda`	M `\Mu`

Γ \varGamma	Δ \varDelta	Θ \varTheta	Λ \varLambda
Ξ \varXi	Π \varPi	Σ \varSigma	Υ \varUpsilon
Φ \varPhi	Ψ \varPsi	Ω \varOmega	
α \alpha	β \beta	γ \gamma	δ \delta
ϵ \epsilon	ζ \zeta	η \eta	θ \theta
ι \iota	κ \kappa	λ \lambda	μ \mu
ν \nu	ξ \xi	o \omicron	π \pi
ρ \rho	σ \sigma	τ \tau	υ \upsilon
ϕ \phi	χ \chi	ψ \psi	ω \omega
ε \varepsilon	$\varkappa$ \varkappa	ϑ \vartheta	$\thetasym$ \thetasym
ϖ \varpi	ϱ \varrho	ς \varsigma	φ \varphi
F \digamma			

Other Letters

$\imath$ \imath	∇ \nabla	$\Im$ \Im	$\mathbb{R}$ \Reals	Œ \text{\OE}
$\jmath$ \jmath	∂ \partial	$\Im$ \image	$\wp$ \wp	ø \text{\o}
$\aleph$ \aleph	$\Game$ \Game	$\Bbbk$ \Bbbk	$\wp$ \weierp	Ø \text{\O}
$\aleph$ \alef	$\Finv$ \Finv	$\mathbb{N}$ \N	$\mathbb{Z}$ \Z	ß \text{\ss}
$\aleph$ \alefsym	$\mathbb{C}$ \cnums	$\mathbb{N}$ \natnums	å \text{\aa}	ı \text{\i}
$\beth$ \beth	$\mathbb{C}$ \Complex	$\mathbb{R}$ \R	Å \text{\AA}	ȷ \text{\j}
$\gimel$ \gimel	ℓ \ell	$\Re$ \Re	æ \text{\ae}	
$\daleth$ \daleth	$\hbar$ \hbar	$\Re$ \real	Æ \text{\AE}	
$\eth$ \eth	$\hbar$ \hslash	$\mathbb{R}$ \reals	œ \text{\oe}	

Item	Range	Item	Range
Bold	$\mathbf{A\text{-}Z\ a\text{-}z\ 0\text{-}9}$	Double-struck	$\mathbb{A}\text{-}\mathbb{Z}\ \Bbbk$
Italic	$\mathit{A\text{-}Z\ a\text{-}z}$	Sans serif	$\mathsf{A\text{-}Z\ a\text{-}z\ 0\text{-}9}$
Bold Italic	$\boldsymbol{A\text{-}Z\ a\text{-}z}$	Sans serif bold	$\mathbf{\mathsf{A\text{-}Z\ a\text{-}z\ 0\text{-}9}}$
Script	$\mathcal{A\text{-}Z}$	Sans serif italic	$\mathit{\mathsf{A\text{-}Z\ a\text{-}z}}$
Fractur	$\mathfrak{A\text{-}Z\ a\text{-}z}$	Monospace	$\mathtt{A\text{-}Z\ a\text{-}z\ 0\text{-}9}$

Unicode

The letters listed above will render properly in any KaTeX rendering mode.

In addition, Brahmic, Georgian, Chinese, Japanese, and Korean glyphs are always accepted in text mode. However, these glyphs will be rendered from system fonts (not KaTeX-supplied fonts) so their typography may clash. You can provide rules for CSS classes `.latin-fallback`, `.cyrillic-fallback`, `.brahmic-fallback`, `.georgian-fallback`, `.cjk-fallback`, and `.hangul-fallback` to provide fallback fonts for these languages. Use of these glyphs may cause small vertical alignment issues: KaTeX has detailed metrics for listed symbols and most Latin, Greek, and Cyrillic letters, but other accepted glyphs are treated as if they are each as tall as the letter M in the current KaTeX font.

If the KaTeX rendering mode is set to `strict: false` or `strict: "warn"` (default), then KaTeX will accept all Unicode letters in both text and math mode. All unrecognized characters will be treated as if they appeared in text mode, and are subject to the same issues of using system fonts and possibly using incorrect vertical alignment.

For Persian composite characters, a user-supplied plug-in is under development.

Layout

Annotation

$\cancel{5}$ `\cancel{5}`	$\overbrace{a+b+c}^{\text{note}}$ `\overbrace{a+b+c}^{\text{note}}`

~~*abc*~~ `\sout{abc}`	$\boxed{\pi=\frac c d}$ `\boxed{\pi=\frac c d}`

```
\tag{hi} x+y^{2x}
```

$$x+y^{2x} \tag{hi}$$

```
\tag*{hi} x+y^{2x}
```

$$x+y^{2x} \tag*{hi}$$

Line Breaks

KaTeX 0.10.0+ will insert automatic line breaks in inline math after relations or binary operators such as "=" or "+". These can be suppressed by `\nobreak` or by placing math inside a pair of braces, as in `{F=ma}`. `\allowbreak` will allow automatic line breaks at locations other than relations or operators.

Hard line breaks are `\\` and `\newline`.

In display math, KaTeX does not insert automatic line breaks. It ignores display math hard line breaks when rendering option `strict: true`.

Vertical Layout

x_n `x_n`	$\stackrel{!}{=}$ `\stackrel{!}{=}`	$\begin{matrix}a\\b\end{matrix}$ `a \atop b`
e^x `e^x`	$\overset{!}{=}$ `\overset{!}{=}`	$a^{\mathrm{b}}c$ `a\raisebox{0.25em}{b}c`
$\begin{matrix}o\\u\end{matrix}$ `_u^o`	$\underset{!}{=}$ `\underset{!}{=}`	$\sum_{\substack{0<i<m\\0<j<n}}$ `\sum_{\substack{0<i<m\\0<j<n}}`

The second argument of `\raisebox` can contain math if it is nested within `$...$` delimiters, as in `\raisebox{0.25em}{$\frac a b$}`

$\mathllap{\,/}$ `\mathllap{\,/}`	$\sqrt{\smash[b]{y}}$ `\sqrt{\smash[b]{y}}`

$\sum_{\mathclap{1\le i\le j\le n}} x_{ij}$ `\sum_{\mathclap{1\le i\le j\le n}} x_{ij}`

KaTeX also supports `\llap`, `\rlap`, and `\clap`, but they will take only text, not math, as arguments.

Spacing

Function	Produces	Function	Produces
`\,`	3⁄18 em space	`\kern{distance}`	space, width = *distance*
`\thinspace`	3⁄18 em space	`\mkern{distance}`	space, width = *distance*
`\>`	4⁄18 em space	`\mskip{distance}`	space, width = *distance*
`\:`	4⁄18 em space	`\hskip{distance}`	space, width = *distance*
`\medspace`	4⁄18 em space	`\hspace{distance}`	space, width = *distance*
`\;`	5⁄18 em space	`\hspace*{distance}`	space, width = *distance*
`\thickspace`	5⁄18 em space	`\phantom{content}`	space the width and height of content
`\enspace`	½ em space	`\hphantom{content}`	space the width of content
`\quad`	1 em space	`\vphantom{content}`	a strut the height of content
`\qquad`	2 em space	`\!`	– 3⁄18 em space
`~`	non-breaking space	`\negthinspace`	– 3⁄18 em space
`\<space>`	space	`\negmedspace`	– 4⁄18 em space
`\nobreakspace`	non-breaking space	`\negthickspace`	– 5⁄18 em space
`\space`	space		

Notes:

except `mu`.

Logic and Set Theory

$\forall$ `\forall`	$\complement$ `\complement`	$\therefore$ `\therefore`	$\emptyset$ `\emptyset`
$\exists$ `\exists`	$\subset$ `\subset`	$\because$ `\because`	$\emptyset$ `\empty`
$\exists$ `\exist`	$\supset$ `\supset`	$\mapsto$ `\mapsto`	$\varnothing$ `\varnothing`
$\nexists$ `\nexists`	$\mid$ `\mid`	$\to$ `\to`	$\implies$ `\implies`
$\in$ `\in`	$\land$ `\land`	$\gets$ `\gets`	$\impliedby$ `\impliedby`
$\isin$ `\isin`	$\lor$ `\lor`	$\leftrightarrow$ `\leftrightarrow`	$\iff$ `\iff`
$\notin$ `\notin`	$\ni$ `\ni`	$\not\ni$ `\notni`	$\neg$ `\neg` or `\lnot`

Direct Input: $\forall \therefore \complement \because \exists \mid \in \notin \ni \subset \supset \land \lor \mapsto \to \gets \leftrightarrow \neg \mathbb{C} \mathbb{H} \mathbb{N} \mathbb{P} \mathbb{Q} \mathbb{R}$

Macros

$x^2 + x^2$	`\def\foo{x^2} \foo + \foo`
$y^2 + y^2$	`\gdef\bar#1{#1^2} \bar{y} + \bar{y}`
	`\global\def\macroname#1#2…{definition}`
	`\newcommand\macroname[numargs]{definition}`
	`\renewcommand\macroname[numargs]{definition}`
	`\providecommand\macroname[numargs]{definition}`

Macros can also be defined in the KaTeX rendering options.

Macros accept up to nine arguments: #1, #2, etc.

`\gdef` and `\global\def` macros will persist between math expressions.

@ is a valid character for commands, as if `\makeatletter` were in effect.

Operators

Big Operators

$\sum$ `\sum`	$\prod$ `\prod`	$\bigotimes$ `\bigotimes`	$\bigvee$ `\bigvee`
$\int$ `\int`	$\coprod$ `\coprod`	$\bigoplus$ `\bigoplus`	$\bigwedge$ `\bigwedge`
$\iint$ `\iint`	$\int$ `\intop`	$\bigodot$ `\bigodot`	$\bigcap$ `\bigcap`
$\iiint$ `\iiint`	$\int$ `\smallint`	$\biguplus$ `\biguplus`	$\bigcup$ `\bigcup`
$\oint$ `\oint`	$\oiint$ `\oiint`	$\oiiint$ `\oiiint`	$\bigsqcup$ `\bigsqcup`

Direct Input: $\int \iint \iiint \oint \prod \coprod \sum \bigwedge \bigvee \bigcap \bigcup \bigodot \bigoplus \bigotimes \biguplus \bigsqcup$

Binary Operators

$+$ `+`	$\cdot$ `\cdot`	$\gtrdot$ `\gtrdot`	$x \pmod a$ `x \pmod a`
$-$ `-`	$\cdotp$ `\cdotp`	$\intercal$ `\intercal`	$x \pod a$ `x \pod a`
$/$ `/`	$\centerdot$ `\centerdot`	$\land$ `\land`	$\rhd$ `\rhd`
$*$ `*`	$\circ$ `\circ`	$\leftthreetimes$ `\leftthreetimes`	$\rightthreetimes$ `\rightthreetimes`
$\amalg$ `\amalg`	$\circledast$ `\circledast`	$\ldotp$ `\ldotp`	$\rtimes$ `\rtimes`
$\&$ `\And`	$\circledcirc$ `\circledcirc`	$\lor$ `\lor`	$\setminus$ `\setminus`
$\ast$ `\ast`	$\circleddash$ `\circleddash`	$\lessdot$ `\lessdot`	$\smallsetminus$ `\smallsetminus`
$\barwedge$ `\barwedge`	$\Cup$ `\Cup`	$\lhd$ `\lhd`	$\sqcap$ `\sqcap`
$\bigcirc$ `\bigcirc`	$\cup$ `\cup`	$\ltimes$ `\ltimes`	$\sqcup$ `\sqcup`
$\bmod$ `\bmod`	$\curlyvee$ `\curlyvee`	$x \mod a$ `x\mod a`	$\times$ `\times`
$\boxdot$ `\boxdot`	$\curlywedge$ `\curlywedge`	$\mp$ `\mp`	$\unlhd$ `\unlhd`

⧓ \boxtimes	∔ \dotplus	⊎ \uplus	∨ \vee
∙ \bullet	⩚ \doublebarwedge	⊗ \otimes	⩒ \veebar
⋒ \Cap	⋒ \doublecap	⊘ \oslash	∧ \wedge
∩ \cap	⋓ \doublecup	± \pm or \plusmn	≀ \wr

Direct Input: + − / ∗ ⋅ ± × ÷ ∓ ∔ ∧ ∨ ∩ ∪ ≀ ⊎ ⊓ ⊔ ⊕ ⊖ ⊗ ⊘ ⊙ ◎ ⊛ ⊝

Fractions and Binomials

$\frac{a}{b}$ \frac{a}{b}	$\tfrac{a}{b}$ \tfrac{a}{b}	$\left(\frac{a}{a+1}\right]$ \genfrac ( ] {2pt}{1}a{a+1}
$\frac{a}{b}$ {a \over b}	$\dfrac{a}{b}$ \dfrac{a}{b}	$\frac{a}{b+1}$ {a \above{2pt} b+1}
a/b a/b		$\cfrac{a}{1 + \cfrac{1}{b}}$ \cfrac{a}{1 + \cfrac{1}{b}}

$\binom{n}{k}$ \binom{n}{k}	$\dbinom{n}{k}$ \dbinom{n}{k}	$\left\{{n \atop k}\right\}$ {n\brace k}
$\binom{n}{k}$ {n \choose k}	$\tbinom{n}{k}$ \tbinom{n}{k}	$\left[{n \atop k}\right]$ {n\brack k}

Math Operators

$\arcsin$ \arcsin	cotg \cotg	$\ln$ \ln	$\det$ \det
$\arccos$ \arccos	$\coth$ \coth	$\log$ \log	$\gcd$ \gcd
$\arctan$ \arctan	$\csc$ \csc	$\sec$ \sec	$\inf$ \inf
arctg \arctg	ctg \ctg	$\sin$ \sin	$\lim$ \lim
arcctg \arcctg	cth \cth	$\sinh$ \sinh	$\liminf$ \liminf
$\arg$ \arg	$\deg$ \deg	sh \sh	$\limsup$ \limsup
ch \ch	$\dim$ \dim	$\tan$ \tan	$\max$ \max

$\cot$ `\cot`	$\lg$ `\lg`	$\arg\max$ `\argmax`	$\arg\min$ `\argmin`
plim `\plim`	f `\operatorname{f}`	$\operatorname*{f}$ `\operatorname*{f}`	

Functions on the right column of this table can take `\limits`.

\sqrt

$\sqrt{x}$ `\sqrt{x}`

$\sqrt[3]{x}$ `\sqrt[3]{x}`

Relations

$\stackrel{!}{=}$ `\stackrel{!}{=}`

$=$ `=`	$\circeq$ `\eqcirc`	$\lesseqgtr$ `\lesseqgtr`	$\sqsupset$ `\sqsupset`
$<$ `<`	$\eqcolon$ `\eqcolon`	$\lesseqqgtr$ `\lesseqqgtr`	$\sqsupseteq$ `\sqsupseteq`
$>$ `>`	$\Eqcolon$ `\Eqcolon`	$\lessgtr$ `\lessgtr`	$\Subset$ `\Subset`
$:$ `:`	$\eqqcolon$ `\eqqcolon`	$\lesssim$ `\lesssim`	$\subset$ `\subset` or `\sub`
$\approx$ `\approx`	$\Eqqcolon$ `\Eqqcolon`	$\ll$ `\ll`	$\subseteq$ `\subseteq` or `\sube`
$\approxeq$ `\approxeq`	$\eqsim$ `\eqsim`	$\lll$ `\lll`	$\subseteqq$ `\subseteqq`
$\asymp$ `\asymp`	$\eqslantgtr$ `\eqslantgtr`	$\llless$ `\llless`	$\succ$ `\succ`
$\ni$ `\backepsilon`	$\eqslantless$ `\eqslantless`	$<$ `\lt`	$\succapprox$ `\succapprox`
$\backsim$ `\backsim`	$\equiv$ `\equiv`	$\mid$ `\mid`	$\succcurlyeq$ `\succcurlyeq`
$\backsimeq$ `\backsimeq`	$\fallingdotseq$ `\fallingdotseq`	$\models$ `\models`	$\succeq$ `\succeq`
$\between$ `\between`	$\frown$ `\frown`	$\multimap$ `\multimap`	$\succsim$ `\succsim`
$\bowtie$ `\bowtie`	$\ge$ `\ge`	$\ni$ `\owns`	$\Supset$ `\Supset`
$\bumpeq$ `\bumpeq`	$\geq$ `\geq`	$\parallel$ `\parallel`	$\supset$ `\supset`

0.11.1 Search

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::≈ \Colonapprox	⋙ \ggg	≋ \precapprox	∼ \thicksim
:− \coloneq	⋙ \gggtr	≼ \preccurlyeq	⊴ \trianglelefteq
::− \Coloneq	> \gt	⪯ \preceq	≜ \triangleq
:= \coloneqq	≋ \gtrapprox	≾ \precsim	⊵ \trianglerighteq
::= \Coloneqq	≷ \gtreqless	∝ \propto	∝ \varpropto
:∼ \colonsim	≷ \gtreqqless	≒ \risingdotseq	△ \vartriangle
::∼ \Colonsim	≷ \gtrless	∣ \shortmid	◁ \vartriangleleft
≅ \cong	≳ \gtrsim	∥ \shortparallel	▷ \vartriangleright
≼ \curlyeqprec	∈ \in or \isin	∼ \sim	: \vcentcolon
≽ \curlyeqsucc	⋈ \Join	≃ \simeq	⊢ \vdash
⊣ \dashv	≤ \le	⌒ \smallfrown	⊨ \vDash
:: \dblcolon	≤ \leq	⌣ \smallsmile	⊩ \Vdash
≐ \doteq	≦ \leqq	⌣ \smile	⊪ \Vvdash
≑ \Doteq	⩽ \leqslant	⊏ \sqsubset	
≑ \doteqdot	≲ \lessapprox	⊑ \sqsubseteq	

Direct Input: ═<>:∈∋∝∼∽≂≅≅≈≌≍≎≐≑≒≓≔≕≖≗≘≡≤≥≦≧≫≪≳≷≺≻≼≽≾≿⊂⊃⊆⊇⊏⊐⊑⊒⊢⊣⊩⊪⊢⊸⋈⋍⋐⋑⋔⋙⋙≥≤≺≻⌒⌣≥≋≧≦≪≫≺≻≾≿⊆⊇≦≧≲≳≤≥≦≧⊥⊨ ≔ ≕ ::=

Negated Relations

≠ \not =

≋ \gnapprox	≱ \ngeqslant	⊈ \nsubseteq	⪈ \precneqq
≯ \gneq	≯ \ngtr	⊈ \nsubseteqq	⪉ \precnsim

⪉ \lnapprox	≮ \nless	⫆̸ \nsupseteqq	⪶̸ \succneqq
≨ \lneq	∤ \nmid	⋪ \ntriangleleft	⪸̸ \succnsim
≨ \lneqq	∉ \notin	⋬ \ntrianglelefteq	⊋ \supsetneq
⪅̸ \lnsim	∌ \notni	⋫ \ntriangleright	⫌ \supsetneqq
⪇ \lvertneqq	∦ \nparallel	⋭ \ntrianglerighteq	⫋ \varsubsetneq
≇ \ncong	⊀ \nprec	⊬ \nvdash	⫋̸ \varsubsetneqq
≠ \ne	⪯̸ \npreceq	⊭ \nvDash	⊋ \varsupsetneq
≠ \neq	∤ \nshortmid	⊯ \nVDash	⫌̸ \varsupsetneqq
≱ \ngeq	∦ \nshortparallel	⊮ \nVdash	
≱ \ngeqq	≁ \nsim	⪹̸ \precnapprox	

Direct Input: ∉∌∦≁≇≠≨≩≮≯≰≱⪇≨⋦≧⪈≩⪉⪊≨≩⋨⋧⪉⪊⊄⊅⊈⊉⫋̸⫌̸⊊⊋⊬⊭⊮⊯⪹̸⪺̸⋠⋡⪯̸⪰̸⊀⊁⋪⋫⪵⪶⋨⋧⪉⪊⊊⫋⊋⫌

Arrows

↻ \circlearrowleft	↼ \leftharpoonup	⇒ \rArr
↻ \circlearrowright	⇇ \leftleftarrows	→ \rarr
↶ \curvearrowleft	↔ \leftrightarrow	↾ \restriction
↷ \curvearrowright	⇔ \Leftrightarrow	→ \rightarrow
⇓ \Darr	⇆ \leftrightarrows	⇒ \Rightarrow
⇓ \dArr	⇋ \leftrightharpoons	↣ \rightarrowtail
↓ \darr	↭ \leftrightsquigarrow	⇁ \rightharpoondown
⇠ \dashleftarrow	⇐ \Lleftarrow	⇀ \rightharpoonup
⇢ \dashrightarrow	⟵ \longleftarrow	⇄ \rightleftarrows
↓ \downarrow	⟸ \Longleftarrow	⇌ \rightleftharpoons

⇂ \downharpoonright	⟶ \longrightarrow	↱ \Rsh
← \gets	⟹ \Longrightarrow	↘ \searrow
⇔ \Harr	↫ \looparrowleft	↙ \swarrow
⇔ \hArr	↬ \looparrowright	→ \to
↔ \harr	⇔ \Lrarr	↞ \twoheadleftarrow
↩ \hookleftarrow	⇔ \lrArr	↠ \twoheadrightarrow
↪ \hookrightarrow	↔ \lrarr	⇑ \Uarr
⟺ \iff	↰ \Lsh	⇑ \uArr
⟸ \impliedby	↦ \mapsto	↑ \uarr
⟹ \implies	↗ \nearrow	↑ \uparrow
⇐ \Larr	↚ \nleftarrow	⇑ \Uparrow
⇐ \lArr	⇍ \nLeftarrow	↕ \updownarrow
← \larr	↮ \nleftrightarrow	⇕ \Updownarrow
⇝ \leadsto	⇎ \nLeftrightarrow	↿ \upharpoonleft
← \leftarrow	↛ \nrightarrow	↾ \upharpoonright
⇐ \Leftarrow	⇏ \nRightarrow	⇈ \upuparrows
↢ \leftarrowtail	↖ \nwarrow	
↽ \leftharpoondown	⇒ \Rarr	

Direct Input: ←↑→↓↔↕↖↗↘↙↚↛↞↠↩↪↫↬↭↰↱↶↷↺↻←↼↾⇀ ⇁⇃⇄⇆⇇⇈⇉⇊⇋⇌⇍⇎⇏⇐⇑⇒⇓⇔⇕⇚⇛⇜⇠⇢⟵⟶⟷⟸⟹⟺⟼⥟

Extensible Arrows

$\xleftarrow{abc}$ \xleftarrow{abc}	$\xrightarrow[under]{over}$ \xrightarrow[under]{over}
$\xleftarrow{abc}$	$\xrightarrow{abc}$

$\xtwoheadleftarrow{abc}$ `\xtwoheadleftarrow{abc}`	$\xtwoheadrightarrow{abc}$ `\xtwoheadrightarrow{abc}`
$\xleftharpoonup{abc}$ `\xleftharpoonup{abc}`	$\xrightharpoonup{abc}$ `\xrightharpoonup{abc}`
$\xleftharpoondown{abc}$ `\xleftharpoondown{abc}`	$\xrightharpoondown{abc}$ `\xrightharpoondown{abc}`
$\xleftrightharpoons{abc}$ `\xleftrightharpoons{abc}`	$\xrightleftharpoons{abc}$ `\xrightleftharpoons{abc}`
$\xtofrom{abc}$ `\xtofrom{abc}`	$\xmapsto{abc}$ `\xmapsto{abc}`
$\xlongequal{abc}$ `\xlongequal{abc}`	

Extensible arrows all can take an optional argument in the same manner as `\xrightarrow[under]{over}`.

Style, Color, Size, and Font

Class Assignment

`\mathbin` `\mathclose` `\mathinner` `\mathop`
`\mathopen` `\mathord` `\mathpunct` `\mathrel`

Color

$F = ma$ `\color{blue} F=ma`

Note that KaTeX `\color` acts like a switch. This aligns with LaTeX and differs from MathJax. Other KaTeX color functions expect the content to be a function argument:

$F = ma$ `\textcolor{blue}{F=ma}`
$F = ma$ `\textcolor{#228B22}{F=ma}`
A `\colorbox{aqua}{A}`
A `\fcolorbox{red}{aqua}{A}`

For color definition, KaTeX color functions will accept the standard HTML predefined color names. They will also accept an RGB argument in CSS hexadecimal style. The "#" is optional before a six-digit specification.

Font

Ab0 `\rm Ab0`	**Ab0** `\bold{Ab0}`	Ab0 `\textup{Ab0}`
Ab0 `\textnormal{Ab0}`	***Ab0*** `\boldsymbol{Ab}`	$\mathbb{AB}$ `\Bbb{AB}`
Ab0 `\text{Ab0}`	***Ab0*** `\bm{Ab0}`	$\mathbb{AB}$ `\mathbb{AB}`
Ab0 `\mathsf{Ab0}`	Ab0 `\textmd{Ab0}`	$\mathfrak{Abo}$ `\frak{Ab0}`
Ab0 `\textsf{Ab0}`	**Ab0** `\mathtt{Ab0}`	$\mathfrak{Abo}$ `\mathfrak{Ab0}`
Ab0 `\sf Ab0`	**Ab0** `\texttt{Ab0}`	$\mathcal{ABo}$ `\mathcal{AB0}`
	Ab0 `\tt Ab0`	$\mathscr{AB}$ `\mathscr{AB}`

One can stack font family, font weight, and font shape by using the `\textXX` versions of the font functions. So `\textsf{\textbf{H}}` will produce **H**. The other versions do not stack, e.g., `\mathsf{\mathbf{H}}` will produce $\mathbf{H}$.

In cases where KaTeX fonts do not have a bold glyph, `\pmb` can simulate one. For example, `\pmb{\mu}` renders as : $\pmb{\mu}$

Size

AB `\Huge AB`	AB `\normalsize AB`
AB `\huge AB`	AB `\small AB`
AB `\LARGE AB`	AB `\footnotesize AB`
AB `\Large AB`	AB `\scriptsize AB`
AB `\large AB`	AB `\tiny AB`

Style

x `\scriptstyle x`	(The size of a first sub/superscript)
x `\scriptscriptstyle x`	(The size of subsequent sub/superscripts)
$\lim\limits_x$ `\lim\limits_x`	
$\lim_x$ `\lim\nolimits_x`	
`x^2` `\verb!x^2!`	

`\text{…}` will accept nested `$…$` fragments and render them in math mode.

Symbols and Punctuation

`% comment`	`...` `\dots`	KaTeX `\KaTeX`
% `\%`	⋯ `\cdots`	LaTeX `\LaTeX`
# `\#`	⋱ `\ddots`	TeX `\TeX`
& `\&`	`...` `\ldots`	∇ `\nabla`
_ `\_`	⋮ `\vdots`	∞ `\infty`
_ `\text{\textunderscore}`	⋯ `\dotsb`	∞ `\infin`
– `\text{--}`	`...` `\dotsc`	✓ `\checkmark`
– `\text{\textendash}`	⋯ `\dotsi`	† `\dag`
— `\text{---}`	⋯ `\dotsm`	† `\dagger`
— `\text{\textemdash}`	`...` `\dotso`	† `\text{\textdagger}`
~ `\text{\textasciitilde}`	· `\sdot`	‡ `\ddag`
^ `\text{\textasciicircum}`	`...` `\mathellipsis`	‡ `\ddagger`
‘ `` ` ``	`...` `\text{\textellipsis}`	‡ `\text{\textdaggerdbl}`
‘ `text{\textquoteleft}`	□ `\Box`	‡ `\Dagger`

“ \text{\textquotedblleft}	▽ \triangledown	⊤ \top
” "	◁ \triangleleft	⊥ \bot
” \text{\textquotedblright}	▷ \triangleright	$ \$
: \colon	▽ \bigtriangledown	$ \text{\textdollar}
‵ \backprime	△ \bigtriangleup	£ \pounds
′ \prime	▲ \blacktriangle	£ \mathsterling
< \text{\textless}	▼ \blacktriangledown	£ \text{\textsterling}
> \text{\textgreater}	◀ \blacktriangleleft	¥ \yen
| \text{\textbar}	▶ \blacktriangleright	√ \surd
‖ \text{\textbardbl}	◇ \diamond	° \degree
{ \text{\textbraceleft}	◇ \Diamond	° \text{\textdegree}
} \text{\textbraceright}	◊ \lozenge	℧ \mho
\ \text{\textbackslash}	⧫ \blacklozenge	╲ \diagdown
¶ \text{\P}	⋆ \star	╱ \diagup
§ \text{\S}	★ \bigstar	♭ \flat
§ \text{\sect}	♣ \clubsuit	♮ \natural
© \copyright	♣ \clubs	♯ \sharp
® \circledR	♢ \diamondsuit	♡ \heartsuit
® \text{\textregistered}	♢ \diamonds	♡ \hearts
Ⓢ \circledS	♠ \spadesuit	♠ \spades
ⓐ \text{\textcircled a}	✠ \maltese	

Direct Input: £¥∇∞· ∠∡◁♠♡♢♣♭♮♯✓ …⋮⋯⋱.! ‼

KaTeX Unit	Value	KaTeX Unit	Value
em	CSS em	bp	1/72 inch × F × G
ex	CSS ex	pc	12 KaTeX pt
mu	1/18 CSS em	dd	1238/1157 KaTeX pt
pt	1/72.27 inch × F × G	cc	14856/1157 KaTeX pt
mm	1 mm × F × G	nd	685/642 KaTeX pt
cm	1 cm × F × G	nc	1370/107 KaTeX pt
in	1 inch × F × G	sp	1/65536 KaTeX pt

where:

F = (font size of surrounding HTML text)/(10 pt)

G = 1.21 by default, because KaTeX font-size is normally 1.21 × the surrounding font size. This value can be overridden by the CSS of an HTML page.

The effect of style and size:

Unit	textstyle	scriptscript	huge
em or ex			
mu			
others			

← FONT SUPPORT TABLE →

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