1. Standard LaTeX symbols

The following tables show the standard symbols for LaTeX users.

TABLE I. Text accents with letter a.

à `\`{a}`	á `\'{a}`	â `\^{a}`	ä `\"{a}`
ã `\~{a}`	ā `\={a}`	ȧ `\.{a}`	ă `\u{a}`
ǎ `\v{a}`	a̋ `\H{a}`	a͡a `\t{aa}`	a̧ `\c{a}`
ạ `\d{a}`	a̱ `\b{a}`		

TABLE II. Math accents with letter a.

$\hat{a}$ `\hat{a}`	$\check{a}$ `\check{a}`	$\dot{a}$ `\dot{a}`	$\ddot{a}$ `\ddot{a}`
$\breve{a}$ `\breve{a}`	$\tilde{a}$ `\tilde{a}`	$\grave{a}$ `\grave{a}`	$\acute{a}$ `\acute{a}`
$\bar{a}$ `\bar{a}`	$\vec{a}$ `\vec{a}`		

TABLE III. Special symbols; any mode.

† `\dag`	§ `\S`	© `\copyright`
‡ `\ddag`	¶ `\P`	£ `\pounds`

TABLE IV. Other special (foreign) symbols; text mode.

å `\aa`	Å `\AA`	æ `\ae`	Æ `\AE`
ø `\o`	Ø `\O`	œ `\oe`	Œ `\OE`
ł `\l`	Ł `\L`	¿ `?‘`	¡ `!‘`
ß `\ss`			

TABLE V. Greek letters; used in math mode.

			Lowercase				
α	`\alpha`	β	`\beta`	γ	`\gamma`	δ	`\delta`
ϵ	`\epsilon`	ε	`\varepsilon`	ζ	`\zeta`	η	`\eta`
θ	`\theta`	ϑ	`\vartheta`	ι	`\iota`	κ	`\kappa`
λ	`\lambda`	μ	`\mu`	ν	`\nu`	ξ	`\xi`
o	`o`	π	`\pi`	ϖ	`\varpi`	ρ	`\rho`
ϱ	`\varrho`	σ	`\sigma`	ς	`\varsigma`	τ	`\tau`
υ	`\upsilon`	ϕ	`\phi`	φ	`\varphi`	χ	`\chi`
ψ	`\psi`	ω	`\omega`				
			Uppercase				
Γ	`\Gamma`	Δ	`\Delta`	Θ	`\Theta`	Λ	`\Lambda`
Ξ	`\Xi`	Π	`\Pi`	Σ	`\Sigma`	Υ	`\Upsilon`
Φ	`\Phi`	Ψ	`\Psi`	Ω	`\Omega`		

TABLE VI. Binary operation symbols; used in math mode.

$\pm$ \pm	$\mp$ \mp	$\times$ \times	$\div$ \div
$\ast$ \ast	$\star$ \star	$\circ$ \circ	$\bullet$ \bullet
$\cap$ \cap	$\cup$ \cup	$\uplus$ \uplus	$\cdot$ \cdot
$\sqcap$ \sqcap	$\sqcup$ \sqcup	$\vee$ \vee	$\wedge$ \wedge
$\oplus$ \oplus	$\ominus$ \ominus	$\otimes$ \otimes	$\oslash$ \oslash
$\bigtriangleup$ \bigtriangleup	$\odot$ \odot	$\lhd$ \lhd	$\dagger$ \dagger
$\bigtriangledown$ \bigtriangledown	$\bigcirc$ \bigcirc	$\rhd$ \rhd	$\ddagger$ \ddagger
$\triangleleft$ \triangleleft	$\diamond$ \diamond	$\unlhd$ \unlhd	$\setminus$ \setminus
$\triangleright$ \triangleright	$\wr$ \wr	$\unrhd$ \unrhd	$\amalg$ \amalg

TABLE VII. Relation symbols; used in math mode.

$\leq$	`\leq`	$\geq$	`\geq`	$\ll$	`\ll`	$\gg$	`\gg`
$\equiv$	`\equiv`	$\asymp$	`\asymp`	$\neq$	`\neq`	$\doteq$	`\doteq`
$\subset$	`\subset`	$\supset$	`\supset`	$\subseteq$	`\subseteq`	$\supseteq$	`\supseteq`
$\sqsubset$	`\sqsubset`	$\sqsupset$	`\sqsupset`	$\sqsubseteq$	`\sqsubseteq`	$\sqsupseteq$	`\sqsupseteq`
$\models$	`\models`	$\perp$	`\perp`	$\mid$	`\mid`	$\parallel$	`\parallel`
$\prec$	`\prec`	$\succ$	`\succ`	$\preceq$	`\preceq`	$\succeq$	`\succeq`
$\sim$	`\sim`	$\simeq$	`\simeq`	$\approx$	`\approx`	$\cong$	`\cong`
$\bowtie$	`\bowtie`	$\Join$	`\Join`	$\smile$	`\smile`	$\frown$	`\frown`
$\in$	`\in`	$\ni$	`\ni`	$\vdash$	`\vdash`	$\dashv$	`\dashv`
$\propto$	`\propto`						

Negated relations can sometimes be constructed with `\not`. For example,

```
If $x \not< y$ then $x \not\leq z$.
```

gives

$$\text{If } x \not< y \text{ then } x \not\leq z.$$

TABLE VIII. Arrow symbols; used in math mode.

$\leftarrow$	`\leftarrow`	$\rightarrow$	`\rightarrow`
$\longleftarrow$	`\longleftarrow`	$\longrightarrow$	`\longrightarrow`
$\Leftarrow$	`\Leftarrow`	$\Rightarrow$	`\Rightarrow`
$\Longleftarrow$	`\Longleftarrow`	$\Longrightarrow$	`\Longrightarrow`
$\hookleftarrow$	`\hookleftarrow`	$\hookrightarrow$	`\hookrightarrow`
$\leftharpoonup$	`\leftharpoonup`	$\rightharpoonup$	`\rightharpoonup`
$\leftharpoondown$	`\leftharpoondown`	$\rightharpoondown$	`\rightharpoondown`
$\rightleftharpoons$	`\rightleftharpoons`	$\leadsto$	`\leadsto`
$\leftrightarrow$	`\leftrightarrow`	$\longleftrightarrow$	`\longleftrightarrow`
$\Leftrightarrow$	`\Leftrightarrow`	$\Longleftrightarrow$	`\Longleftrightarrow`
$\mapsto$	`\mapsto`	$\longmapsto$	`\longmapsto`
		$\uparrow$	`\uparrow`
		$\downarrow$	`\downarrow`
		$\Uparrow$	`\Uparrow`
		$\Downarrow$	`\Downarrow`
		$\updownarrow$	`\updownarrow`
		$\Updownarrow$	`\Updownarrow`
		$\nearrow$	`\nearrow`
		$\searrow$	`\searrow`
		$\swarrow$	`\swarrow`
		$\nwarrow$	`\nwarrow`

TABLE IX. Miscellaneous symbols; used in math mode.

$\flat$	`\flat`	$\natural$	`\natural`	$\sharp$	`\sharp`	$\prime$	`\prime`
$\backslash$	`\backslash`	$\forall$	`\forall`	∞	`\infty`	$\exists$	`\exists`
$\emptyset$	`\emptyset`	$\Box$	`\Box`	∇	`\nabla`	$\neg$	`\neg`
$\Diamond$	`\Diamond`	$\surd$	`\surd`	$\triangle$	`\triangle`	$\Vert$	`|`
$\clubsuit$	`\clubsuit`	$\aleph$	`\aleph`	$\wp$	`\wp`	$\top$	`\top`
$\diamondsuit$	`\diamondsuit`	$\Re$	`\Re`	ℓ	`\ell`	$\bot$	`\bot`
$\heartsuit$	`\heartsuit`	$\Im$	`\Im`	$\imath$	`\imath`	∂	`\partial`
$\spadesuit$	`\spadesuit`	$\hbar$	`\hbar`	$\jmath$	`\jmath`	$\angle$	`\angle`
$\mho$	`\mho`						

TABLE X. Log-like functions; used in math mode.

\arccos	\arcsin	\arctan	\arg	\cos
\cosh	\cot	\coth	\csc	\deg
\det	\dim	\exp	\gcd	\hom
\inf	\ker	\lg	\lim	\liminf
\limsup	\ln	\log	\max	\min
\Pr	\sec	\sin	\sinh	\sup
\tan	\tanh			

TABLE XI. Delimiters; used in math mode.

<table>
<tr><td>$($ (</td><td>$)$)</td><td>$/$ /</td></tr>
<tr><td>$[$ [</td><td>$]$]</td><td>$\backslash$ \backslash</td></tr>
<tr><td>$\{$ \{</td><td>$\}$ \}</td><td>$\vert$ |</td></tr>
<tr><td>$\langle$ \langle</td><td>$\rangle$ \rangle</td><td>$\Vert$ \|</td></tr>
<tr><td>$\uparrow$ \uparrow</td><td>$\Uparrow$ \Uparrow</td><td>$\lfloor$ \lfloor</td></tr>
<tr><td>$\downarrow$ \downarrow</td><td>$\Downarrow$ \Downarrow</td><td>$\rfloor$ \rfloor</td></tr>
<tr><td>$\updownarrow$ \updownarrow</td><td>$\Updownarrow$ \Updownarrow</td><td>$\lceil$ \lceil</td></tr>
<tr><td></td><td></td><td>$\rceil$ \rceil</td></tr>
</table>

TABLE XII. Miscellaneous symbols; used in math mode.

$\sum$	$\displaystyle\sum$	`\sum`	$\prod$	$\displaystyle\prod$	`\prod`	$\coprod$	$\displaystyle\coprod$	`\coprod`
$\int$	$\displaystyle\int$	`\int`	$\oint$	$\displaystyle\oint$	`\oint`	$\biguplus$	$\displaystyle\biguplus$	`\biguplus`
$\bigcap$	$\displaystyle\bigcap$	`\bigcap`	$\bigcup$	$\displaystyle\bigcup$	`\bigcup`	$\bigsqcup$	$\displaystyle\bigsqcup$	`\bigsqcup`
$\bigodot$	$\displaystyle\bigodot$	`\bigodot`	$\bigotimes$	$\displaystyle\bigotimes$	`\bigotimes`	$\bigoplus$	$\displaystyle\bigoplus$	`\bigoplus`
$\bigvee$	$\displaystyle\bigvee$	`\bigvee`	$\bigwedge$	$\displaystyle\bigwedge$	`\bigwedge`			

You can access a pair of special typefaces in $\LaTeX$.

You can switch to script (calligraphic) letters by using the `\cal` command (note the $\mathcal{L}$):

```
{\cal L}_{\text{int}} = e F^{3}_{\pi} r^{2}
  B^{0}(r,t) \epsilon \sin(\Omega t)
  \exp(\eta t),
```

gives

$$\mathcal{L}_{\text{int}} = e F^{3}_{\pi} r^{2} B^{0}(r,t) \epsilon \sin(\Omega t) \exp(\eta t),$$

Only uppercase letters are available in the `\cal` font.

You can switch to sans serif letters by using the `\sf` command (note the M):

```
R({\cal Q}-{\cal Q}_{0})
=R_{0} \exp\left(-\frac{1}{2}\Delta {\cal Q}
 \cdot{\sf M}\cdot\Delta{\cal Q}\right).
  \label{eq:rdef}
```

gives

$$R(\mathcal{Q}-\mathcal{Q}_{0}) = R_{0} \exp\left(-\frac{1}{2}\Delta \mathcal{Q} \cdot \mathsf{M} \cdot \Delta \mathcal{Q}\right).$$

Both uppercase and lowercase letters are available with `\sf`.

The `\overline` command puts a horizontal line above its argument in math mode:

```
$\overline{x}+\overline{y}$
```

gives

$$\overline{x}+\overline{y}$$

There is an analogous `\underline` command that works in text or math mode:

```
The equation \underline{is} $\underline{x+y}$.
```

gives

The equation <u>is</u> $\underline{x+y}$.

Horizontal braces are put above or below an expression with the `\overbrace` and `\underbrace` commands:

```
$\underbrace{a_{1} + \overbrace{a_{2}+a_{3}}
  + a_{4}}$
```

gives

$$\underbrace{a_{1} + \overbrace{a_{2}+a_{3}} + a_{4}}$$

and in displayed math, a subscript or a superscript puts a label on the brace:

```
$\underbrace{a_{1} +
  \overbrace{a_{2}+\cdots+a_{n-1}}^{n-2}
   + a_{n}}_{n}$
```

gives

$$\underbrace{a_{1} + \overbrace{a_{2}+\cdots+a_{n-1}}^{n-2} + a_{n}}_{n}$$

Wide versions of the `\hat` and `\tilde` commands are available. They are called `\widehat` and `\widetilde`, respectively. Here is an example:

```
$\widehat{a} + \widehat{ab}
 + \widehat{abc} + \widehat{abcd}$
```

gives

$$\widehat{a} + \widehat{ab} + \widehat{abc} + \widehat{abcd}$$