LaTeX Math Symbols

Prepared by L. Kocbach, on the basis of this document (origin: David Carlisle, Manchester University)

File A.tex contains all necessary code

This file is prepared by running

latex A.tex

and cutting the pictures out of the resulting preview. Relevant parts of the latex code are reproduced under each of the pictures. Some of the symbols have an explanatory text. This text is found in the latex code, mostly stating that they are parts of some spacial setup and cannot be used in standard LaTeX. Each of the figures also has a link to itself.

Greek Letters

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

Table 1: Greek Letters

t1.gif

\alpha	\theta	o	\tau
\beta	\vartheta	\pi	\upsilon
\gamma	\gamma	\varpi	\phi
\delta	\kappa	\rho	\varphi
\epsilon	\lambda	\varrho	\chi
\varepsilon	\mu	\sigma	\psi
\zeta	\nu	\varsigma	\omega
\eta \Gamma	\xi \Lambda	\Sigma	\Psi
\Delta	\Xi	\Upsilon	\Omega
\Theta	\Pi	\Phi	

Binary Operation Symbols

\pm	\p m	\cap	\cap	♦	\diamond	\oplus	\oplus
Ŧ	\mp	U	\cup	Δ	\bigtriangleup	Θ	\ominus
×	\times	₩	\uplus	∇	\bigtriangledo	wn 🛇	\otimes
*	\div	П	\sqcap	∢	\triangleleft	0	\oslash
*	\ast	\sqcup	\sqcup	⊳	\triangleright	⊙	\odot
*	\star	V	\vee	⊲	$ackslash \mathtt{lhd}^b$	0	\bigcirc
0	\circ	Λ	\wedge	\triangleright	$ackslash exttt{Thd}^b$	†	\dagger
•	\bullet	\	\setminus	⊴	$ackslash{\mathtt{unlhd}^b}$	‡	\ddagger
•	\cdot	l	\wr	⊵	$ackslash{\mathtt{unrhd}}^b$	П	\amalg
+	+	_	-				
t2.gif							
\pm		\cap		\diamono	l \op	olus	
\mp		\cup		\bigtria	angleup \om	ninus	

\times \uplus \bigtriangledown \otimes \div \triangleleft \oslash \sqcap \triangleright \odot \ast \sqcup \star \vee $\hline 1 hd b$ \bigcirc \rhd \$^b\$ \circ \wedge \dagger $\ \n$ \bullet \setminus \ddagger \unrhd\$^b\$ \cdot \wr \aggreen

\$^b\$ Not predefined in a format based on {\tt basefont.tex}.
Use one of the style options
{\tt oldlfont}, {\tt newlfont}, {\tt amsfonts} or {\tt amssymb}.

Relation Symbols

```
\geq
                                                      \equiv
                                                                         \models
       \leq
                                                                         \perp
                               \succ
                                                      \sim
                                                                   \perp
       \prec
       \preceq
                               \succeq
                                                      \simeq
                                                                         \mid
       \11
                               \gg
                                                      \asymp
                                                                         \parallel
                                                 \asymp
 \cup \cup \cup
                               \supset
                                                      \approx
                                                                         \bowtie
       \subset
                                                 \approx
                                                                   M
                                                 \cong
                                                                         \Join^b
                                                                   M
       \subseteq
                               \supseteq
                                                      \cong
                                                 ≠
       \sqsubset<sup>b</sup>
                               \sqsupset<sup>b</sup>
                                                      \neq
                                                                         \smile
       \sqsubseteq
                                                      \doteq
                                                                         \frown
                               \sqsupseteq
  €
       \in
                          ∋
                               \ni
                                                       \propto
                                                 \alpha
       \vdash
                               \dashv
                                                  <
                                                       <
                                                                         >
t3.gif
 \leq
                                     \equiv
                                                       \models
                   \geq
 \prec
                   \succ
                                     \sim
                                                       \perp
```

\simeq

\mid

\succeq

```
\11
                                                                 \parallel
                       \gg
                                            \asymp
 \subset
                                                                \bowtie
                       \supset
                                            \approx
 \subseteq
                       \supseteq
                                                                 \Join$^b$
                                            \cong
 \sqsubset$^b$
                       \sqsupset$^b$
                                            \neq
                                                                 \smile
 \sqsubseteq
                       \sqsupseteq
                                                                \frown
                                            \doteq
 \in
                       \ni
                                            \propto
 \vdash
                       \dashv
$^b$ Not predefined in a format based on {\tt basefont.tex}.
     Use one of the style options
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```

Punctuation Symbols

```
, , ; ; : \colon . \ldotp - \cdotp
```

Table 4: Punctuation Symbols

t4.gif

, ; \colon \ldotp \cdotp

Arrow Symbols

←	\leftarrow	←—	\longleftarrow	↑	\uparrow
(\Leftarrow	\Leftarrow	\Longleftarrow	\uparrow	\Uparrow
\rightarrow	\rightarrow	\longrightarrow	\longrightarrow	\downarrow	\downarrow
\Rightarrow	\Rightarrow	\Longrightarrow	\Longrightarrow	\downarrow	\Downarrow
\leftrightarrow	\leftrightarrow	\longleftrightarrow	\longleftrightarrow	1	\updownarrow
\Leftrightarrow	\Leftrightarrow	\iff	\Longleftrightarrow	1	\Updownarrow
\mapsto	\mapsto	\longmapsto	\longmapsto	7	\nearrow
\leftarrow	\hookleftarrow	\hookrightarrow	\hookrightarrow	\	\searrow
_	\leftharpoonup		\rightharpoonup	Ź	\swarrow
•	\leftharpoondown	—	\rightharpoondown	\	\nwarrow
\rightleftharpoons	\rightleftharpoons	~ <i>></i>	\leadsto ^b	·	

<u>t5.gif</u>

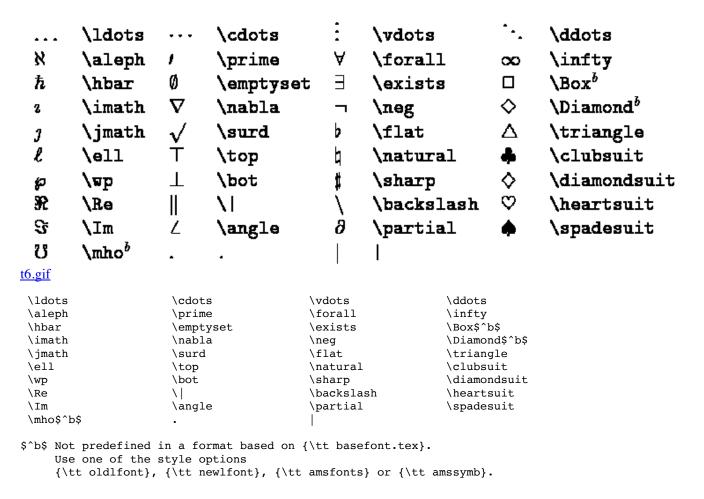
\leftarrow	\longleftarrow	\uparrow
\Leftarrow	\Longleftarrow	\Uparrow
\rightarrow	\longrightarrow	\downarrow
\Rightarrow	\Longrightarrow	\Downarrow
\leftrightarrow	\longleftrightarrow	\updownarrow
\Leftrightarrow	\Longleftrightarrow	\Updownarrow
\mapsto	\longmapsto	\nearrow
\hookleftarrow	\hookrightarrow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

```
\rightleftharpoons
```

\leadsto\$^b\$

```
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Use one of the style options
{\tt oldlfont}, {\tt newlfont}, {\tt amsfonts} or {\tt amssymb}.
```

Miscellaneous Symbols



Variable-sized Symbols

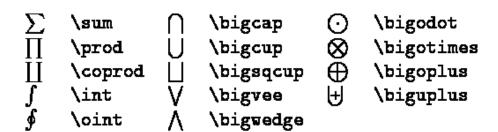


Table 7: Variable-sized Symbols

t7.gif

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

Log-like Symbols

\arccos	\cos	\csc	\exp	\ker	\limsup	\min	\sinh
\arcsin	\cosh	\deg	\gcd	\1g	\ln	\Pr	\sup
\arctan	\cot	\det	\hom	\lim	\log	\sec	\tan
\arg	\coth	\dim	\inf	\liminf	\ma.x	\sin	\tanh

Table 8: Log-like Symbols

t8.gif

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

Delimiters

Table 9: Delimiters

t9.gif

Large Delimiters

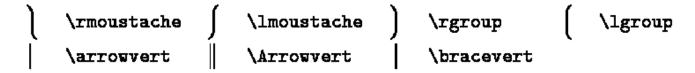


Table 10: Large Delimiters

t10.gif

\rmoustache \lmoustache \rgroup \lgroup
\arrowvert \bracevert \bracevert

Math mode accents

â	\hat{a}	á	\acute{a}	ā	\bar{a}	\dot{a}	\dot{a}	ă	\breve{a}
ă	\check{a}	à	\grave{a}	\vec{a}	\vec{a}	ä	\ddot{a}	ã	\tilde{a}

Table 11: Math mode accents

t11.gif

 \hat{a}
 \bar{a}
 \dot{a}
 \breve{a}

 \check{a}
 \grave{a}
 \ddot{a}
 \tilde{a}

Some other constructions

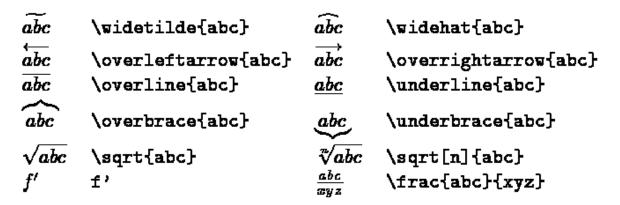


Table 12: Some other constructions

t12.gif

\widetilde{abc} \widehat{abc}
\overleftarrow{abc} \overrightarrow{abc}
\overline{abc} \underline{abc}
\overbrace{abc} \underbrace{abc}
\sqrt{abc} \sqrt[n]{abc}
\frac{abc}{xyz}