LaTeX Reference Card

1 Greek Letters

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

2 AMS

$\hbar$	\hbar	$\hslash$	\hslash	$\backprime$	\backprime	$\varnothing$	\varnothing
$\vartriangle$	\vartriangle	$\triangledown$	\triangledown	$\circledS$	\circledS	$\bigstar$	\bigstar
$\angle$	\angle	$\sphericalangle$	\sphericalangle	$\measuredangle$	\measuredangle	$\nexists$	\nexists
$\Game$	\Game	$\dotplus$	\dotplus	$\smallsetminus$	\smallsetminus	$\ltimes$	\ltimes
$\rtimes$	\rtimes	$\Cap$	\Cap	$\Cup$	\Cup	$\boxplus$	\boxplus
$\leftthreetimes$	\leftthreetimes	$\rightthreetimes$	\rightthreetimes	$\curlywedge$	\curlywedge	$\curlyvee$	\curlyvee
$\circleddash$	\circleddash	$\blacktriangle$	\blacktriangle	$\blacktriangledown$	\blacktriangledown	$\square$	\square
$\blacksquare$	\blacksquare	$\lozenge$	\lozenge	$\blacklozenge$	\blacklozenge	$\complement$	\complement
$\mho$	\mho	$\eth$	\eth	$\Finv$	\Finv	$\diagup$	\diagup
$\diagdown$	\diagdown	$\Bbbk$	\Bbbk	$\barwedge$	\barwedge	$\veebar$	\veebar
$\doublebarwedge$	\doublebarwedge	$\boxminus$	\boxminus	$\boxtimes$	\boxtimes	$\boxdot$	\boxdot
$\circledast$	\circledast	$\circledcirc$	\circledcirc	$\centerdot$	\centerdot	$\divideontimes$	\divideontimes
$\intercal$	\intercal	$\blacktriangleleft$	\blacktriangleleft	$\blacktriangleright$	\blacktriangleright	$\therefore$	\therefore
$\because$	\because	$\because$	\because				

3 More AMS

$\leqq$	\leqq	$\geqq$	\geqq	$\leqslant$	\leqslant	$\geqslant$	\geqslant
$\eqslantless$	\eqslantless	$\eqslantgtr$	\eqslantgtr	$\lesssim$	\lesssim	$\gtrsim$	\gtrsim
$\lessapprox$	\lessapprox	$\gtrapprox$	\gtrapprox	$\approxeq$	\approxeq	$\eqcirc$	\eqcirc
$\risingdotseq$	\risingdotseq	$\circeq$	\circeq	$\fallingdotseq$	\fallingdotseq	$\triangleq$	\triangleq
$\backsim$	\backsim	$\thicksim$	\thicksim	$\backsimeq$	\backsimeq	$\thickapprox$	\thickapprox
$\subseteqq$	\subseteqq	$\supseteqq$	\supseteqq	$\succapprox$	\succapprox	$\vartriangleleft$	\vartriangleleft
$\vartriangleright$	\vartriangleright	$\trianglelefteq$	\trianglelefteq	$\trianglerighteq$	\trianglerighteq	$\vDash$	\vDash
$\Vdash$	\Vdash	$\Vvdash$	\Vvdash	$\smallsmile$	\smallsmile	$\lessdot$	\lessdot
$\gtrdot$	\gtrdot	$\lll$	\lll	$\ggg$	\ggg	$\lessgtr$	\lessgtr
$\gtrless$	\gtrless	$\lesseqgtr$	\lesseqgtr	$\gtreqless$	\gtreqless	$\lesseqqgtr$	\lesseqqgtr
$\gtreqqless$	\gtreqqless	$\doteqdot$	\doteqdot	$\Subset$	\Subset	$\Supset$	\Supset
$\sqsubset$	\sqsubset	$\sqsupset$	\sqsupset	$\preccurlyeq$	\preccurlyeq	$\succcurlyeq$	\succcurlyeq
$\curlyeqprec$	\curlyeqprec	$\curlyeqsucc$	\curlyeqsucc	$\precsim$	\precsim	$\succsim$	\succsim
$\precapprox$	\precapprox	$\smallfrown$	\smallfrown	$\bumpeq$	\bumpeq	$\Bumpeq$	\Bumpeq
$\shortmid$	\shortmid	$\shortparallel$	\shortparallel	$\between$	\between	$\pitchfork$	\pitchfork
$\varpropto$	\varpropto	$\backepsilon$	\backepsilon				

4 Binary Operations

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

5 Relation Symbols

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

6 Arrow Symbols

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

7 Miscellaneous

$\ldots$	\ldots	$\cdots$	\cdots	$\vdots$	\vdots	$\ddots$	\ddots	$\aleph$	\aleph
$\prime$	\prime	$\forall$	\forall	∞	\infty	$\hbar$	\hbar	$\emptyset$	\emptyset
$\exists$	\exists	∇	\nabla	$\surd$	\surd	$\Box$	\Box	$\triangle$	\triangle
$\Diamond$	\Diamond	$\imath$	\imath	$\jmath$	\jmath	ℓ	\ell	$\neq$	\neq
$\top$	\top	$\flat$	\flat	$\natural$	\natural	$\sharp$	\sharp	$\wp$	\wp
$\bot$	\bot	$\clubsuit$	\clubsuit	$\diamondsuit$	\diamondsuit	$\heartsuit$	\heartsuit	$\spadesuit$	\spadesuit
$\mho$	\mho	$\Re$	\Re	$\Im$	\Im	$\angle$	\angle	∂	\partial

8 Sum Like Symbols

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

9   Delimiters

```
⌊  \lfloor   ⌋  \rfloor   ⌈  \lceil   ⌉  \rceil   ⟨  \langle
⟩  \rangle   |  |         ‖  \|       {  \{       }  \}
```

10   Special Characters

The following are "reserved" characters. This means that in your source you have to use special commands to input them into your document. These are the ten reserved symbols:

Reserved Character	Command
$	\$
&	\&
%	\%
#	\#
{	\{
}	\}
_	_
~	$\sim$
∧	$\wedge$
\	$\backslash$

11   Class Summary

Basic comparison between the *standard* document classes in LaTeX just to illustrate the differences between the environment within each class. Adopted from Albert.Ornstein.

environment	article	report	book	letter	slides
abstract	●	●			
description	●	●	●	●	●
figure	●	●	●		
figure*	●	●	●		
picture	●	●	●	●	●
quotation	●	●	●	●	●
quote	●	●	●	●	●
table	●	●	●		
table*	●	●	●		
tabular	●	●	●	●	●
thebibliography	●	●	●		
theindex	●	●	●		
titlepage	●	●	●		●
verse	●	●	●	●	●

12   Remarks

Originally AMS-LaTeX was separate from LaTeX , but in the new version of LaTeX , called LaTeX2e , introduced three years ago, all these separate programs became LaTeX packages. So now AMS-LaTeX is just a set of LaTeX packages.