Symbols & Logical Syntax in LATEX

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Greek & Hebrew Letters

Alphabetical Characters

A, α	\Alpha, \alpha	Ι, ι	\Iota, \iota	Ρ, ρ, ρ	\Rho, \rho, \varrho
B, β	\Beta, \beta	K, κ, \varkappa	\Kappa, \kappa, \varkappa	Σ , σ , ς	\Sigma, \sigma, \varsigma
Γ, γ	\Gamma, \gamma	$\Lambda,~\lambda$	\Lambda, \lambda	T, τ	\Tau, \tau
$\Delta, \ \delta$	\Delta, \delta	M, μ	\Mu, \mu	Υ , v	\Upsilon, \upsilon
E, ϵ , ε	\Epsilon, \epsilon, \varepsilon	N, ν	\Nu, \nu	Φ, ϕ, φ	\Phi, \phi, \varphi
Z, ζ	\Zeta, \zeta	Ξ, ξ	\Xi, \xi	Χ, χ,	\Chi, \chi
H, η	\Eta, \eta	О, о	\Omicron, \omicron	Ψ, ψ	\Psi, \psi
Θ , θ , ϑ	\Theta, \theta, \vartheta	Π, π, ϖ	\Pi, \pi, \varpi	Ω, ω	\Omega, \omega

Miscellaneous Characters & Punctuation

F	\digamma	C	\complement	3	\Im	ē	\Game	£	\pounds		
×	\aleph	ℓ	\ell	R	\Re	E	\Finv	\$	\\$,	,
コ	\beth	ð	\eth	ប	\mho	ð	\partial	§	\S	٠, ٠	٠, ٠
٦	\daleth	ħ	\hbar	B	\wp	TM , ©	\trademark, \copyright	!	!	", "	", ,, or "
I	\gimel	ħ	\hslash	k	\Bbbk	®, ®	\textregistered, \circledR	?	?	:	\colon or :
\imath	\imath	T	\top	Ø	\emptyset	\Diamond	\diamondsuit	Ц	\natural	;	;
J	\jmath		bot	∞	∞	\Diamond	\heartsuit	#	\sharp		
∇	\nabla		\angle		\Box	*	\clubsuit	b	\flat		
\triangle	\triangle		\surd	♦	Diamond	^	\spadesuit				

Basic Math Mode Syntax

	YZ xyz XZ	XYZ\ xyz \mathbb{XYZ}	XYZ xyz		XYZ xyz XY3 xŋ3	<pre>\mathit{XYZ\ xyz} \mathfrak{XYZ\ xyz}</pre>	XYZ xyz XYZ xyz	<pre>\mathbf{XYZ\ xyz} \mathtt{XYZ\ xyz}</pre>
xyz xyz $abcd$ $abcd$ abc	a\qua	z mspace{4mu}c\med d b18mu] ntom{xxx}b		Math spacing Extended spacing 4mu ('medium') space 18mu ('quad') space Space width of 'xxx'	$\begin{vmatrix} \sin x \cos y \\ abcd \\ abcd \\ abad \end{vmatrix}$	\sin x\cos y ab\mspace{3mu}c\t a\;b\mspace{5mu}c\t a\!b\mspace{-3mu}c\	hickspace d	Operator spacing 3mu ('thin') space 5mu ('thick') space i Neg. 3mu ('thin') space

Math Accents & Constructs

\hat{x}	\hat{x}	×	\check{x}	\tilde{x}	\tilde{x}	x x	\acute{x}	À	\grave{x}
\dot{x}	\dot{x}	\ddot{x}	\ddot{x}	×	\breve{x}	\bar{x}	\bar{x}	\vec{x}	$\operatorname{vec}\{x\}$
\widehat{xyz}	\widehat{xyz}	\widetilde{xyz}	<page-header></page-header>	$\frac{abc}{xyz}$	\frac{abc}{xyz}	f, f'	f, f\prime	\sqrt{x}	\sqrt{x}
$\sqrt[n]{x}$	$\sqrt[n]{x}$	\overline{xyz}	\overline{xyz}	$\frac{xyz}{}$	\underline{xyz}	\widehat{xyz}	\overbrace{xyz}	xyz	\underbrace{xyz}
\overrightarrow{xyz}	\overrightarrow{xyz}	$\frac{\overleftarrow{xyz}}{}$	\overleftarrow{xyz}	\overrightarrow{xyz}	\overleftrightarrow{xyz}	$\frac{xyz}{abc}$	\xleftarrow[abc]{xyz}	$\frac{xyz}{abc}$	\xrightarrow[abc]{
$\sum_{i=1}^{x} \sum_{k=1}^{j} i_{k}$	$\left(y^x\right)_{k^j}\sum_{k^j}$	\sum_{K}	\overset{K}{\sum}	\sum_{i}	\sunderset{k=1}{\sum}			•	

Binary Relations

Note that you can produce according negations by either adding the \not command as a prefix or ordinarily by preceding the commands with 'n'. For example, \not= or \neq turns = to \neq .

<	<	>	>	=	=	€	\in	∋	\ni or \owns
\leq	$\leq or \leq o$	\geq	\geq or \ge	=	\equiv	-	\vdash	-	\dashv
«	\11	>>	\gg	<u>=</u>	\doteq		\mid		\parallel
\prec	\prec	>	\succ	~	\sim	_	\smile		\frown
\preceq	\preceq	≥	\succeq	~	\simeq	∃	\exists		\lnot or \neg
\subset	\subset	\supset	\supset	\approx	\approx	⊨	\models	上	\perp
\subseteq	\subseteq	\supseteq	\supseteq	\simeq	\cong	\asymp	$\agnumber \agnumber \agn$	\propto	\propto
	\sqsubset		\sqsupset	M	Join	≠	\neq	\forall	\forall
	\sqsubseteq		\sqsupseteq	\bowtie	\bowtie	∉	\notin	٧, ١	\prime, \backprime

Binary Operators

Standard Operators

+	+	-	-	V	\lor or \vee	Λ	\land or \wedge	⊲	\lhd	\triangleright	\rhd	†	\dagger
\pm	\pm	=	\mp	\oplus	\oplus	Θ	\ominus	⊴	$\under unlhd$	⊵	\unrhd	‡	\ddagger
×	\times		\cdot	0	\odot	Ø	\oslash	•	\bullet	0	\circ	¶	\P
÷	\div	\	\setminus	\otimes	\otimes	0	\bigcirc	*	\ast	*	\star		
\cup	\cup	\cap	\cap	Δ	\bigtriangleup	∇	\bigtriangledown	♦	\diamond	}	\wr		
\sqcup	\sqcup	П	\sqcap	⊲	\triangleleft	⊳	\triangleright	П	\amalg	₩	\uplus		

Large Operators

\sum	\sum	ſ	\int	ſſſ	\iiint	\cap	\bigcap		\oplus	\bigoplu	ıs	V	bigvee	
Π	\prod	∮	\oint	ſſſſ	\iiiint	U	\bigcup		\otimes	\bigotim	ies	\wedge	\bigwedge	
П	\coprod	ſſ	\iint			\forall	\bigoplu	ıs	\odot	\bigodot	;	\sqcup	\bigsqcup	
			,								•			
	Functions													
arccos	\arcoss	csc	\csc	inj lim	\injlim	n	ıax	\max		tan	\ta	n		
arcsin	\arcsin	deg	\deg	ker	\ker	n	nin	\min		tanh	\ta	nh		
\arctan	\arctan	det	\det	lg	\lg	P	r	\Pr		$\stackrel{\lim}{\longrightarrow}$	\va	rinjl	im	
arg	\arg	dim	\dim	lim	\lim	p	roj lim	\pro	jlim	lim im	\va	rproj	lim	
cos	\cos	exp	\exp	lim inf	\liminf	se	ec	\sec		lim	\va	rlimi	nf	
\cosh	\cosh	gcd	\gcd	lim sup	\limsup	si	in	\sin		$\overline{\lim}$	\va	rlims	up	
cot	\cot	hom	\hom	ln	\ln	si	inh	\sinl	n	226_0^1	\op	erato	rname{226}_0^1	
\coth	\coth	inf	\inf	log	\log	SI	пр	sup						

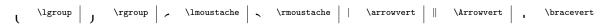
Delimiters

Note that you can produce according relatively sized symbols by preceding the commands with \left or \right. For example, \left(\frac{abc}{xyz}\right) turns $(\frac{abc}{xyz})$ to $(\frac{abc}{xyz})$. Sometimes commands can be preceded with '1' or 'r' e.g., \left xyz\rVert makes ||xyz||. Thus, giving the \Vert command properties of paired symbols.

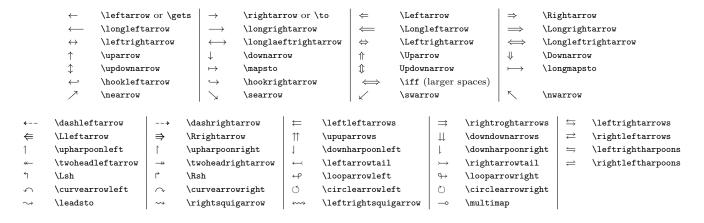




Large Delimiters



Arrows



Matrices

Note that any of the following can also be displayed inline as well as stand-alone. It's recommended that you use smallmatrix for this. Thus, you must preced and succeed \begin and \end smallmatrix with \left<delimiter> and \right<delimiter>, respectively. For example, \left(\begin{smallmatrix}a & b & c\x & y & z\end{smallmatrix}\right) yields $\begin{pmatrix} a & b & c \\ x & y & z \end{pmatrix}$.

Syntax