List of LaTeX mathematical symbols

From OeisWiki

All the predefined mathematical symbols from the <span class="texhtml" style="font-family: cmr10, LMRoman10-Regular, Times, serif; font-size: {{#replace: **Expression error: Unrecognized punctuation character "{".** |-| − }}%;">TEX package are listed below. More symbols are available from extra packages.

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Greek letters

Greek letters

Symbol	-| − }}%;">LATEX	Symbol	-| − }}%;">LATEX
A and α	\Alpha and \alpha	N and ν	\Nu and \nu
B and β	\Beta and \beta	Ξ and ξ	\Xi and \xi
Γ and γ	\Gamma and \gamma	O and o	\Omicron and \omicron
Δ and δ	\Delta and \delta	Π, π and ϖ	\Pi, \pi and \varpi
E, ϵ and ε	\Epsilon, \epsilon and \varepsilon	P, ρ and ϱ	\Rho, \rho and \varrho
Z and ζ	\Zeta and \zeta	Σ, σ and ς	\Sigma, \sigma and \varsigma
H and η	\Eta and \eta	T and τ	\Tau and \tau
Θ, θ and ϑ	\Theta, \theta and \vartheta	Υ and υ	\Upsilon and \upsilon
I and ι	\Iota and \iota	Φ, ϕ, and φ	\Phi, \phi and \varphi
K, κ and $\varkappa$	\Kappa, \kappa and \varkappa	X and χ	\Chi and \chi
Λ and λ	\Lambda and \lambda	Ψ and ψ	\Psi and \psi
M and μ	\Mu and \mu	Ω and ω	\Omega and \omega

Archaic Greek letters

Symbol	-| − }}%;">LATEX
$\digamma$	\Digamma
$\Digamma$	\digamma

Unary operators

Unary operators

Symbol	-| − }}%;">LATEX	Comment	Symbol	-| − }}%;">LATEX	Comment	Symbol	-| − }}%;">LATEX	Comment	Symbol	-| − }}%;">LATEX	Comm
$+$	+		$-$	-	negation	$!$	!	factorial	$\#$	\#	primo
			$\neg$	\neg	not						

Relation operators

Relation operators

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment
$<$	`<`	is less than	$>$	`>`	is greater than
$\not<$	`\nless`	is not less than	$\not>$	`\ngtr`	is not greater than
$\leq$	`\leq`	is less than or equal to	$\geq$	`\geq`	is greater than or equal to
$\leqslant$	`\leqslant`	is less than or equal to	$\geqslant$	`\geqslant`	is greater than or equal to
$\not\leq$	`\nleq`	is neither less than nor equal to	$\not\geq$	`\ngeq`	is neither greater than nor equal to
$\not\leqslant$	`\nleqslant`	is neither less than nor equal to	$\not\geqslant$	`\ngeqslant`	is neither greater than nor equal to
$\prec$	`\prec`	precedes	$\succ$	`\succ`	succeeds
$\not\prec$	`\nprec`	doesn't precede	$\not\succ$	`\nsucc`	doesn't succeed
$\preceq$	`\preceq`	precedes or equals	$\succeq$	`\succeq`	succeeds or equals
$\not\preceq$	`\npreceq`	neither precedes nor equals	$\not\succeq$	`\nsucceq`	neither succeeds nor equals
$\ll$	`\ll`		$\gg$	`\gg`	
$\lll$	`\lll`		$\ggg$	`\ggg`	
$\subset$	`\subset`	is a proper subset of	$\supset$	`\supset`	is a proper superset of
$\not\subset$	`\not\subset`	is not a proper subset of	$\not\supset$	`\not\supset`	is not a proper superset of
$\subseteq$	`\subseteq`	is a subset of	$\supseteq$	`\supseteq`	is a superset of
$\not\subseteq$	`\nsubseteq`	is not a subset of	$\not\supseteq$	`\nsupseteq`	is not a superset of
$\sqsubset$	`\sqsubset`		$\sqsupset$	`\sqsupset`	
$\sqsubseteq$	`\sqsubseteq`		$\sqsupseteq$	`\sqsupseteq`	

Symbol	-| – }}%;">LaTeX	Comment
$=$	`=`	is equal to
$\doteq$	`\doteq`	
$\equiv$	`\equiv`	is equivalent to
$\approx$	`\approx`	is approximately
$\cong$	`\cong`	is congruent to
$\simeq$	`\simeq`	is similar or equal to
$\sim$	`\sim`	is similar to
$\propto$	`\propto`	is proportional to
$\neq$ or $\neq$	`\neq` or `\ne`	is not equal to

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment
$\parallel$	`\parallel`	is parallel with	$\nparallel$	`\nparallel`	is not parallel with
$\asymp$	`\asymp`	is asymptotic to	$\bowtie$	`\bowtie`	
$\vdash$	`\vdash`		$\dashv$	`\dashv`	
$\in$	`\in`	is member of	$\ni$	`\ni`	owns, has member
$\smile$	`\smile`		$\frown$	`\frown`	
$\models$	`\models`	models	$\notin$	`\notin`	is not member of
$\perp$	`\perp`	is perpendicular with	$\mid$	`\mid`	divides

Binary operators

Binary operators

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Com
$\pm$	`\pm`	plus or minus	$\cap$	`\cap`	set intersection	$\diamond$	`\diamond`		$\oplus$	`\oplus`	
$\mp$	`\mp`	minus or plus	$\cup$	`\cup`	set union	$\triangle$	`\bigtriangleup`		$\ominus$	`\ominus`	
$\times$	`\times`	multiplied by	$\uplus$	`\uplus`	multiset addition	$\triangledown$	`\bigtriangledown`		$\otimes$	`\otimes`	
$\div$	`\div`	divided by	$\sqcap$	`\sqcap`		$\triangleleft$	`\triangleleft`		$\oslash$	`\oslash`	
$*$	`\ast`	asterisk	$\sqcup$	`\sqcup`		$\triangleright$	`\triangleright`		$\odot$	`\odot`	
$\star$	`\star`		$\vee$	`\vee`		$\bigcirc$	`\bigcirc`		$\circ$	`\circ`	
$\dagger$	`\dagger`		$\wedge$	`\wedge`		$\bullet$	`\bullet`		$\setminus$	`\setminus`	set diffe
$\ddagger$	`\ddagger`		$\cdot$	`\cdot`		$\wr$	`\wr`		$\amalg$	`\amalg`	

Negated binary operators

Negated binary operators

Symbol	-| − }}%;">LaTeX	Comment	Symbol	-| − }}%;">LaTeX	Comment
$\neq$ or $\neq$	\neq or \ne	is not equal to	$\notin$	\notin	is not member of
$\not<$	\nless	is not less than	$\not>$	\ngtr	is not greater than
$\not\leq$	\nleq	is not less than or equal to	$\not\geq$	\ngeq	is not greater than or equal to
$\not\leqslant$	\nleqslant		$\not\geqslant$	\ngeqslant	
$\not\leqq$	\nleqq		$\not\geqq$	\ngeqq	
$\lneq$	\lneq		$\gneq$	\gneq	
$\lneqq$	\lneqq		$\gneqq$	\gneqq	
$\lvertneqq$	\lvertneqq		$\gvertneqq$	\gvertneqq	
$\lnsim$	\lnsim		$\gnsim$	\gnsim	
$\lnapprox$	\lnapprox		$\gnapprox$	\gnapprox	
$\not\prec$	\nprec	does not precede	$\not\succ$	\nsucc	does not succeed
$\not\preceq$	\npreceq	neither precedes nor equals	$\not\succeq$	\nsucceq	neither succedes nor equals
$\precneqq$	\precneqq		$\succneqq$	\succneqq	
$\precnsim$	\precnsim		$\succnsim$	\succnsim	
$\precnapprox$	\precnapprox		$\succnapprox$	\succnapprox	
$\not\sim$	\nsim	is not similar to	$\not\cong$	\ncong	is not congruent to
$\nshortmid$	\nshortmid		$\nshortparallel$	\nshortparallel	
$\nmid$	\nmid		$\nparallel$	\nparallel	is not parallel with
$\nvdash$	\nvdash		$\nvDash$	\nvDash	
$\nVdash$	\nVdash		$\nVDash$	\nVDash	
$\ntriangleleft$	\ntriangleleft		$\ntriangleright$	\ntriangleright	
$\ntrianglelefteq$	\ntrianglelefteq		$\ntrianglerighteq$	\ntrianglerighteq	
$\not\subseteq$	\nsubseteq		$\not\supseteq$	\nsupseteq	
$\not\subseteqq$	\nsubseteqq		$\not\supseteqq$	\nsupseteqq	
$\subsetneq$	\subsetneq		$\supsetneq$	\supsetneq	
$\varsubsetneq$	\varsubsetneq		$\varsupsetneq$	\varsupsetneq	
$\subsetneqq$	\subsetneqq		$\supsetneqq$	\supsetneqq	
$\varsubsetneqq$	\varsubsetneqq		$\varsupsetneqq$	\varsupsetneqq	

Set and/or logic notation

Set notation

Symbol	-| − }}%;">LaTeX	Comment
$\emptyset$ or $\emptyset$, and $\varnothing$	\O or \emptyset, and \varnothing	the empty set
$\mathbb{N}$	\N	set of natural numbers
$\mathbb{Z}$	\Z	set of integers
$\mathbb{Q}$	\Q	set of rational numbers
$\mathbb{A}$	\mathbb{A}	set of algebraic numbers
$\mathbb{R}$	\R	set of real numbers
$\mathbb{C}$	\C	set of complex numbers
$\mathbb{H}$	\mathbb{H}	set of quaternions
$\mathbb{O}$	\mathbb{O}	set of octonions
$\mathbb{S}$	\mathbb{S}	set of sedenions
$\in$	\in	is member of
$\notin$	\notin	is not member of
$\ni$	\ni	owns (has member)
$\subset$	\subset	is proper subset of
$\subseteq$	\subseteq	is subset of
$\supset$	\supset	is proper superset of
$\supseteq$	\supseteq	is superset of
$\cup$	\cup	set union
$\cap$	\cap	set intersection
$\setminus$	\setminus	set difference

Logic notation

Symbol	-| − }}%;">LaTeX	Comment
$\exists$	\exists	there exists at least one
$\exists!$	\exists!	there exists one and only one
$\nexists$	\nexists	there is no
$\forall$	\forall	for all
$\neg$	\neg	not (logical not)
$\vee$	\lor	or (logical or)
$\wedge$	\land	and (logical and)
$\Longrightarrow$ or $\implies$	\Longrightarrow or \implies	implies
$\Rightarrow$	\Rightarrow	*(preferred for right implication)*
$\Longleftarrow$	\Longleftarrow	is implied by (only if)
$\Leftarrow$	\Leftarrow	*(preferred for left implication)*
$\iff$	\iff	is equivalent to (if and only if, iff)
$\Leftrightarrow$	\Leftrightarrow	*(preferred for equivalence)*
$\top$	\top	
$\bot$	\bot	

Geometry

Geometry notation

Symbol	-| − }}%;">LaTeX	Comment	Symbol	-| − }}%;">LaTeX	Comment
$\overline{AB}$	\overline{\rm AB}	segment	$\overrightarrow{AB}$	\overrightarrow{\rm AB}	ray (half-line)
$\angle$	\angle	angle	$\measuredangle$	\measuredangle	measured angle
$\triangle$	\triangle	triangle	$\square$	\square	square
$\cong$	\cong	congruent (same shape and size)	$\ncong$	\ncong	not congruent
$\sim$	\sim	similar (same shape)	$\nsim$	\nsim	not similar
$\parallel$	\\|	is parallel with	$\nparallel$	\nparallel	is not parallel with
$\perp$	\perp	is perpendicular to	$\not\perp$	\not\perp	is not perpendicular to

Delimiters

Delimiters

Symbol	-| − }}%;">LaTeX	Comment	Symbol	-| − }}%;">LaTeX	Comment	Symbol	-| − }}%;">LaTeX	Comment	Symbol	-| − }}%;">LaTeX	Com
$\mid$	|	divides	$\parallel$	\\|	divides unitarily, is parallel with	/	/	slash	\	\backslash	
(	(\,	left parenthesis	)	) \,	right parenthesis	[	[\,	left [square] bracket	]	] \,	right [squa brack
{	\{	left brace	}	\}	right brace	$\langle$	\langle	left angle bracket	$\rangle$	\rangle	right angle brack
$\lceil$	\lceil	ceiling (left)	$\rceil$	\rceil	ceiling (right)	$\lfloor$	\lfloor	floor (left)	$\rfloor$	\rfloor	floor (righ
$\ulcorner$	\ulcorner		$\urcorner$	\urcorner		$\llcorner$	\llcorner		$\lrcorner$	\lrcorner	

Arrows

Arrows

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comm
→ or $\rightarrow$	\rightarrow or \to		⇒	\Rightarrow		⟶	\longrightarrow		⟹	\Longrightarrow	
↦	\mapsto					⟼	\longmapsto				
← or $\leftarrow$	\leftarrow or \gets		⇐	\Leftarrow		⟵	\longleftarrow		⟸	\Longleftarrow	

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment
↑	\uparrow	Knuth's up-arrow notation	⇑	\Uparrow	
↓	\downarrow		⇓	\Downarrow	
↕	\updownarrow		⇕	\Updownarrow	

Other symbols

Other symbols

Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Comment	Symbol	-| – }}%;">LaTeX	Co
∂	\partial	partial derivative	$\imath$	\imath		$\Re$	\Re	real part	∇	\nabla	del (ve calc
$\eth$	\eth		$\jmath$	\jmath		$\Im$	\Im	imaginary part	□	\Box	
$\hbar$	\hbar	reduced Planck's constant	ℓ	\ell		$\wp$	\wp	[Weierstrass] powerset	∞	\infty	infi

Hebrew lettters

Symbol	-| – }}%;">LaTeX	Comment
א	\aleph	aleph numbers
ב	\beth	
ג	\gimel	

Trigonometric functions

Circular functions
The prefix arc *used for inverse circular trigonometric functions is the abbreviation for* arcus.

Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX
sin	\sin	**arcsin**	\arcsin	**csc**	\csc	**arccsc**	\arccsc
cos	\cos	**arccos**	\arccos	**sec**	\sec	**arcsec**	\arcsec
tan	\tan	**arctan**	\arctan	**cot**	\cot	**arccot**	\arccot

Hyperbolic functions
The abbreviations arcsinh, arccosh, *etc., are commonly used for inverse hyperbolic trigonometric functions (area hyperbolic functions), even though they are misnomers, since the prefix* arc *is the abbreviation for* arcus, *while the prefix* ar *stands for* area.

Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX	Symbol	-| – }}%;">LaTeX
sinh	\sinh	**arsinh**	\operatorname{arsinh}	**csch**	\operatorname{csch}	**arcsch**	\operatorname{arcsch}
cosh	\cosh	**arcosh**	\operatorname{arcosh}	**sech**	\operatorname{sech}	**arsech**	\operatorname{arsech}
tanh	\tanh	**artanh**	\operatorname{artanh}	**coth**	\coth	**arcoth**	\operatorname{arcoth}

Sections remaining to be done*: Table 3 onwards from symbols.pdf* [1]

Notes

1. To do.

External links

- Scott Pakin, The Comprehensive <span class="texhtml" style="font-family: cmr10, LMRoman10-Regular, Times, serif; font-size: {{#replace: **Expression error: Unrecognized punctuation character "{".** |-| − }}%;">LaTeX Symbol List (http://tug.ctan.org/info/symbols/comprehensive/symbols-a4.pdf), 2017. (Lists thousands of symbols and the corresponding <span class="texhtml" style="font-family: cmr10, LMRoman10-Regular, Times, serif; font-size: {{#replace: **Expression error: Unrecognized punctuation character "{".** |-| − }}%;">LaTeX commands that produce them.)
- Comprehensive <span class="texhtml" style="font-family: cmr10, LMRoman10-Regular, Times, serif; font-size: {{#replace: **Expression error: Unrecognized punctuation character "{".** |-| − }}%;">TeX Archive Network (http://www.ctan.org/)
- http://ctan.cms.math.ca/tex-archive/info/symbols/comprehensive/SYMLIST