A direct LaTeX-to-Braille transcribing method
Tables of supported symbols and structures

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1. Symbols

Each of the following tables has a pair of three columns. The first gives the LaTeX command of the symbol depicted in the second. The third column gives the equivalent six-dot character in Nemeth Braille or contains the word "unsupported". The reason for a symbol to be unsupported is that this symbol was not found in the Nemeth code (published by Dr. Nemeth in 1972) or we do not see how it can composed by already existing symbols. Luckily enough most of the unsupported symbols appear very rarely in the literature. Some of them may be supported in the future if the community or the institutions involved the Nemeth code aggree to such an extension.

On the last 3 pages we make a proposal about most of the unsupported symbols. These symbols are already supported by our software. After this there are only very few symbols (ten symbols) that are not supported by our software.

| \mathbb R | $\mathbb{R}$ | ⠠⠩ | | | |

and similarly for the rest of the capital latin letters.

\arccos	arccos	⠁⠗⠉⠉⠕⠎	\cot	cot	⠉⠕⠞
\exp	exp	⠑⠭⠏	\lim	lim	⠇⠊⠍
\min	min	⠍⠊⠝	\tan	tan	⠞⠁⠝
\arcsin	arcsin	⠁⠗⠉⠎⠊⠝	\coth	coth	⠉⠕⠞⠓
\gcd	gcd	⠛⠉⠙	\liminf	lim inf	⠇⠊⠍⠊⠝⠋
\Pr	Pr	⠠⠏⠗	\tanh	tanh	⠞⠁⠝⠓
\arctan	arctan	⠁⠗⠉⠞⠁⠝	\csc	csc	⠉⠎⠉
\hom	hom	⠓⠕⠍	\limsup	lim sup	⠇⠊⠍⠎⠥⠏
\sec	sec	⠎⠑⠉	\arg	arg	⠁⠗⠛
\deg	deg	⠙⠑⠛	\inf	inf	⠊⠝⠋
\ln	ln	⠇⠝	\sin	sin	⠎⠊⠝
\cos	cos	⠉⠕⠎	\det	det	⠙⠑⠞
\ker	ker	⠅⠑⠗	\log	log	⠇⠕⠛
\sinh	sinh	⠎⠊⠝⠓	\cosh	cosh	⠉⠕⠎⠓
\dim	dim	⠙⠊⠍	\lg	lg	⠇⠛
\max	max	⠍⠁⠭	\sup	sup	⠎⠥⠏

Table 1. Functions.

\hat{a}	â	⠁⠔	\breve{a}	ă	⠁⠬
\ddot{a}	ä	⠁⠒	\acute{a}	á	unsupported
\check{a}	ǎ	unsupported	\tilde{a}	ã	⠁⠔
\bar{a}	ā	⠁⠉	\overline{abc}	a̅b̅c̅	⠁⠉⠃⠉⠉⠉
\underline{abc}	abc	⠁⠤⠃⠤⠉⠤	\grave{a}	à	unsupported
\mathring{a}	å	⠁⠂	\dot{a}	ȧ	⠁⠨
\vec{a}	a⃗	⠁⠒⠒	\widetilde{a}	ã̃	⠁⠔⠔
\AA	Å	⠠⠂	\aa	å	⠁⠂
@	@	⠈	\P	¶	⠰⠏
\dag	†	⠸⠻	\ddag	‡	⠸⠸⠻
\S	§	⠠⠎	\textsection	§	⠠⠎
\textregistered	®	⠘⠗	\copyright	©	⠘⠉
\pounds	£	⠈⠇	\textstirling	£	⠈⠇
\SS	SS	⠠⠠⠎⠎	\lq	'	⠠⠦
\leftquote	'	⠠⠦	\rq	'	⠠⠴
\rightquote	'	⠠⠴	\texttrademark	™	⠘⠞⠍
\textvisiblespace	␣	unsupported	\textcircled{S}	Ⓢ	⠘⠎
\textasciicircum	^	�	\&	&	�
_	_	space	\textbackslash	\	⠰⠡
\cent	¢	⠈⠉	\checked	✓	⠠⠹
\dj	đ	�	\barlambda	Δ	⠠⠓
\planck	ℏ	�	\$	$	⠈⠎

Table 2. Accents and text symbols.

\sum	Σ	⠨⠎	\bigcap	∩	⠨⠩
\bigodot	⊙	⠘⠒	\int	∫	⠮
\oint	∮	⠮⠐	\prod	∏	⠨⠏
\bigcup	∪	⠨⠬	\bigotimes	⊗	⠘⠦
\bigvee	⋁	⠠⠬	\bigwedge	⋀	⠠⠩
\coprod	∐	unsupported	\bigsqcup	⊔	unsupported
\bigoplus	⊕	⠘⠖	\biguplus	⊎	⠨�

Table 3. Variable size operators

\uparrow	↑	⠨⠣⠠⠄⠒⠒⠨⠜	\\{	{	⠨⠣
\left\\{	{	⠐⠨⠣	\bigl\\{	{	⠰⠐⠨⠣
\Bigl\\{	{	⠰⠐⠨⠣	\biggl\\{	{	⠰⠐⠨⠣
\Biggl\\{	{	⠰⠐⠨⠣	\lfloor	⌊	⠈⠼⠣
\langle	⟨	⠨⠨⠣	\left\langle	⟨	⠐⠨⠨⠣
\bigl\langle	⟨	⠰⠐⠨⠨⠣	\Biggl\langle	(	⠰⠐⠨⠨⠣
\biggl\langle	⟨	⠰⠐⠨⠨⠣	\Biggl\langle	(	⠰⠐⠨⠨⠣
|			⠳	\bigm|			⠰⠳
\Bigm|			⠰⠳	\biggm|			⠰⠳
\Biggm				⠰⠳	\Uparrow	⇑	⠨⠣⠠⠿⠿⠨⠜
\\}	}	⠨⠜	\right\\}	}	⠐⠨⠜
\bigr\\}	}	⠰⠐⠨⠜	\Bigr\\}	}	⠰⠐⠨⠜
\biggr\\}	}	⠰⠐⠨⠜	\Biggr\\}	}	⠰⠐⠨⠜
\rfloor	⌋	⠈⠼⠜	\rangle	⟩	⠨⠨⠜
\right\rangle	⟩	⠐⠨⠨⠜	\bigr\rangle	⟩	⠰⠐⠨⠨⠜
\Bigr\rangle	⟩	⠰⠐⠨⠨⠜	\biggr\rangle	⟩	⠰⠐⠨⠨⠜
\Biggr\rangle	⟩	⠰⠐⠨⠨⠜	\\|	‖	⠳⠳
\left\\|	‖	⠐⠳⠐⠳	\right\\|	‖	⠐⠳⠐⠳
\big\\|	‖	⠰⠐⠳⠐⠳	\Big\\|	‖	⠰⠐⠳⠐⠳
\bigg\\|	‖	⠰⠐⠳⠐⠳	\Bigg\\|	‖	⠰⠐⠳⠐⠳
\downarrow	↓	⠨⠣⠠⠄⠒⠒⠨⠜	\updownarrow	↕	⠨⠣⠠⠄⠒⠒⠨⠜
\lceil	⌈	⠈⠠⠼⠣	/	/	⠌
\Downarrow	⇓	⠨⠣⠠⠿⠿⠨⠜	\Updownarrow	⇕	⠨⠣⠠⠿⠿⠨⠜
\rceil	⌉	⠈⠠⠼⠜	\backslash	\	⠸⠌
\ulcorner	⌜	⠈⠠⠼⠣	\left\ulcorner	⌜	⠐⠈⠠⠼⠣
\bigl\ulcorner	⌜	⠰⠐⠈⠠⠼⠣	\Bigl\ulcorner	⌜	⠰⠐⠈⠠⠼⠣
\biggl\ulcorner	⌜	⠰⠐⠈⠠⠼⠣	\Biggl\ulcorner	⌜	⠰⠐⠈⠠⠼⠣
\urcorner	⌝	⠈⠠⠼⠜	\right\urcorner	⌝	⠐⠈⠠⠼⠜
\bigr\urcorner	⌝	⠰⠐⠈⠠⠼⠜	\Bigr\urcorner	⌝	⠰⠐⠈⠠⠼⠜
\biggr\urcorner	⌝	⠰⠐⠈⠠⠼⠜	\Biggr\urcorner	⌝	⠰⠐⠈⠠⠼⠜
\llcorner	⌞	⠈⠼⠣	\left\llcorner	⌞	⠐⠈⠼⠣
\bigl\llcorner	⌞	⠰⠐⠈⠼⠣	\Bigl\llcorner	⌞	⠰⠐⠈⠼⠣
\biggl\llcorner	⌞	⠰⠐⠈⠼⠣	\Biggl\llcorner	⌞	⠰⠐⠈⠼⠣
\lrcorner	⌟	⠈⠼⠜	\right\lrcorner	⌟	⠐⠈⠼⠜
\bigr\lrcorner	⌟	⠰⠐⠈⠼⠜	\Bigr\lrcorner	⌟	⠰⠐⠈⠼⠜
\biggr\lrcorner	⌟	⠰⠐⠈⠼⠜	\Biggr\lrcorner	⌟	⠰⠐⠈⠼⠜

Table 4. Delimiters

\alpha	α	⠈⠨	\epsilon	ϵ	⠈⠱
\theta	θ	⠈⠹	\lambda	λ	⠈⠇
\varrho	ϱ	⠈⠈⠗	\upsilon	υ	⠈⠥
\psi	ψ	⠈⠽	\Gamma	Γ	⠈⠈⠯
\Xi	Ξ	⠈⠈⠭	\Phi	Φ	⠈⠈⠋
\beta	β	⠈⠃	\varepsilon	ε	⠈⠈⠱
\vartheta	ϑ	⠈⠈⠹	\mu	μ	⠈⠍
\pi	π	⠈⠏	\sigma	σ	⠈⠎
\phi	ϕ	⠈⠋	\omega	ω	⠈⠺
\Delta	Δ	⠈⠈⠙	\Pi	Π	⠈⠈⠏
\Psi	Ψ	⠈⠈⠽	\gamma	γ	⠈⠯
\zeta	ζ	⠈⠵	\iota	ι	⠈⠊
\nu	ν	⠈⠝	\varpi	ϖ	⠈⠈⠏
\varsigma	ς	⠈⠈⠎	\varphi	φ	⠈⠈⠋
\Theta	Θ	⠈⠈⠹	\Sigma	Σ	⠈⠈⠎
\Omega	Ω	⠈⠈⠺	\delta	δ	⠈⠙
\eta	η	⠈⠱	\kappa	κ	⠈⠅
\xi	ξ	⠈⠭	\rho	ρ	⠈⠗
\tau	τ	⠈⠞	\chi	χ	⠈⠯
\Lambda	Λ	⠈⠈⠇	\Upsilon	Υ	⠈⠈⠥
\digamma	F	⠈⠿	\varkappa	$\varkappa$	⠈⠈⠅
\beth	$\beth$	⠠⠈�.	\daleth	$\daleth$	⠠⠈⠮
\gimel	$\gimel$	⠠⠈⠛	\stigma	ς	⠈⠎
\qoppa	$\qoppa$	⠈⠟	\sampi	λ	⠈⠎

Table 5. Greek letters and Hebrew letters

\pm	$\pm$	⠬⠤	\mp	$\mp$	⠤⠬
\times	$\times$	⠦	\div	$\div$	⠲
\ast	$\ast$	⠐⠦	\star	$\star$	⠷⠪
\circ	$\circ$	⠴	\bullet	$\bullet$	⠸⠲
\cdot	$\cdot$	⠄	\cap	$\cap$	⠯
\cup	$\cup$	⠬	\uplus	$\uplus$	⠬⠸⠬
\sqcap	$\sqcap$	unsupported	\sqcup	$\sqcup$	unsupported
\vee	$\vee$	⠦	\wedge	$\wedge$	⠯
\wr	$\wr$	unsupported	\diamond	$\diamond$	⠫⠪
\bigtriangleup	$\triangle$	⠫⠲	\bigtriangledown	$\triangledown$	⠫⠻
\triangleleft	$\triangleleft$	unsupported	\triangleright	$\triangleright$	unsupported
\lhd	$\lhd$	unsupported	\rhd	$\rhd$	unsupported
\unlhd	$\unlhd$	unsupported	\unrhd	$\unrhd$	unsupported
\oplus	$\oplus$	⠯⠈⠯⠬⠿	\ominus	$\ominus$	⠯⠈⠯⠤⠿
\otimes	$\otimes$	⠯⠈⠯⠦⠿	\oslash	$\oslash$	⠯⠈⠯⠌⠿
\odot	$\odot$	⠯⠈⠯⠄⠿	\bigcirc	$\bigcirc$	⠯⠈
\dagger	$\dagger$	⠻⠿	\ddagger	$\ddagger$	⠻⠻⠿
\amalg	$\amalg$	unsupported			

Table 6. Binary Operators.

\dotplus	∔	⠀⠨⠱⠫⠉⠿	\Cup	⋓	⠨⠬ �⠎ ⠨⠌⠿
\doublebarwedge	⩟	⠒⠂ ⠈⠒	\boxdot	⊡	⠮⠲ ⠿⠠⠈⠿
\ltimes	⋉	unsupported	\rightthreetimes	⋌	unsupported
\circleddash	⊝	⠮⠈⠙ ⠿⠲⠄⠿	\centerdot	·	⠐
\smallsetminus	╲	⠐⠱⠄	\barwedge	⊼	⠡ ⠈⠒
\boxminus	⊟	⠮⠲⠧ ⠿⠱⠈⠿	\boxplus	⊞	⠮⠲⠧ ⠿⠠⠈⠿
\rtimes	⋊	unsupported	\curlywedge	⋏	unsupported
\circledast	⊛	⠮⠈⠙ ⠿⠄⠘⠿	\intercal	⊺	⠮⠐⠂⠄⠄⠒
\Cap	⋒	⠬⠫ ⠿ ⠿⠿⠿	\veebar	⊻	⠐⠱⠐
\boxtimes	⊠	⠮⠲⠧ ⠿ ⠈⠿⠿	\divideontimes	⋇	⠈⠂ ⠿ ⠠⠈⠿
\leftthreetimes	⋋	unsupported	\curlyvee	⋎	unsupported
\circledcirc	⊚	⠮⠈⠙ ⠿⠠⠈⠿			

Table 7. AMS binary operators (amssymb.sty).

Command	Symbol	Braille	Command	Symbol	Braille
\leftarrow	←	⠈⠪⠂	\Leftarrow	⇐	⠈⠪⠶⠶
\rightarrow	→	⠈⠕⠂	\to	→	⠈⠕⠂
\Rightarrow	⇒	⠈⠶⠶⠕⠂	\leftrightarrow	↔	⠈⠪⠪⠒⠒⠕⠂
\Leftrightarrow	⇔	⠈⠪⠪⠶⠶⠕⠂	\mapsto	↦	⠈⠮⠪⠒⠒⠂
\hookleftarrow	↩	⠈⠪⠂⠒⠒⠄⠠⠪	\leftharpoonup	↼	⠈⠪⠈⠪⠒⠒⠄
\leftharpoondown	↽	⠈⠪⠠⠪⠒⠒⠄	\leadsto	↝	⠈⠪⠠⠒⠒⠄⠠⠂
\longleftarrow	⟵	⠈⠪⠂⠒⠒⠄	\Longleftarrow	⟸	⠈⠪⠂⠶⠶
\longrightarrow	⟶	⠈⠕⠒⠒⠂	\Longrightarrow	⟹	⠈⠕⠶⠶⠂
\longleftrightarrow	⟷	⠈⠪⠪⠒⠒⠕⠂	\Longleftrightarrow	⟺	⠈⠪⠪⠶⠶⠕⠂
\longmapsto	⟼	⠈⠮⠪⠒⠒⠂	\hookrightarrow	↪	⠈⠪⠈⠪⠒⠒⠂
\rightharpoonup	⇀	⠈⠕⠒⠒⠈⠂	\rightharpoondown	⇁	⠈⠕⠒⠒⠠⠂
\uparrow	↑	⠈⠪⠈⠒⠒⠂	\Uparrow	⇑	⠈⠪⠈⠶⠶⠂
\downarrow	↓	⠈⠪⠡⠒⠒⠂	\Downarrow	⇓	⠈⠪⠡⠶⠶⠂
\updownarrow	↕	⠈⠪⠈⠡⠒⠒⠂	\Updownarrow	⇕	⠈⠪⠈⠡⠶⠶⠂
\nearrow	↗	⠈⠪⠈⠒⠒⠂	\searrow	↘	⠈⠪⠠⠒⠒⠂
\swarrow	↙	⠈⠪⠠⠪⠒⠒⠄	\nwarrow	↖	⠈⠪⠈⠪⠒⠒⠄
\leftrightarrows	⇆	⠈⠪⠪⠒⠒⠄⠒⠒⠕⠂	\leftarrowtail	↢	⠈⠪⠪⠒⠒⠕⠄
\curvearrowleft	↶	⠈⠪⠄⠠⠕⠂	\upuparrows	⇈	⠈⠪⠈⠒⠒⠂⠄⠈⠪⠈⠒⠒⠂
\multimap	⊸	⠈⠕⠒⠒⠈⠂	\rightleftarrows	⇄	⠈⠕⠒⠒⠂⠈⠪⠒⠒⠄
\twoheadrightarrow	↠	⠈⠕⠒⠒⠕⠂	\rightleftharpoons	⇌	⠈⠕⠒⠒⠈⠂⠈⠪⠠⠪⠒⠒⠄
\Rsh	↱	unsupported	\downharpoonright	⇂	⠈⠪⠡⠒⠒⠈⠂
\Lleftarrow	⇚	⠈⠪⠂⠿⠿	\looparrowleft	↫	unsupported
\circlearrowleft	↺	⠈⠪⠈⠒⠒⠈⠿	\upharpoonleft	↿	⠈⠪⠈⠒⠒⠈⠂
\leftrightsquigarrow	↭	⠈⠪⠪⠄⠠⠄⠠⠕⠂	\rightrightarrows	⇉	⠈⠕⠒⠒⠂⠈⠕⠒⠒⠂
\curvearrowright	↷	⠈⠪⠈⠠⠄	\downdownarrows	⇊	⠈⠪⠡⠒⠒⠂⠄⠈⠪⠡⠒⠒⠂
\rightsquigarrow	⇝	⠈⠕⠄⠠⠄⠠⠂	\rightarrowtail	↣	⠈⠕⠒⠒⠕⠂
\leftleftarrows	⇇	⠈⠪⠪⠒⠒⠈⠪⠪⠒⠒⠄	\twoheadleftarrow	↞	⠈⠪⠪⠒⠒⠄
\leftrightharpoons	⇋	⠈⠪⠠⠪⠒⠒⠈⠪⠒⠒⠈⠂	\Lsh	↰	unsupported
\downharpoonleft	⇃	⠈⠪⠡⠒⠒⠠⠂	\looparrowright	↬	unsupported
\circlearrowright	↻	⠈⠪⠈⠒⠒⠠⠿	\upharpoonright	↾	⠈⠪⠈⠒⠒⠠⠂
\Rrightarrow	⇛	⠈⠿⠿⠕⠂	\nleftarrow	↚	⠠⠈⠪⠂
\nRightarrow	⇏	⠠⠈⠶⠶⠕⠂	\nrightarrow	↛	⠠⠈⠕⠂
\nleftrightarrow	↮	⠠⠈⠪⠪⠒⠒⠕⠂	\nLeftarrow	⇍	⠠⠈⠪⠂⠶⠶
\nLeftrightarrow	⇎	⠠⠈⠪⠪⠶⠶⠕⠂			

Table 8. Arrows.

\leq	≤	⠠⠇ ⠿	\le	≤	⠠⠇ ⠿
\prec	≺	⠒⠪	\preceq	⪯	⠒⠪⠿
\ll	≪	⠪⠪ ⠿	\subset	⊂	⠪⠒
\subseteq	⊆	⠸⠪⠿	\sqsubset	⊏	unsupported
\sqsubseteq	⊑	unsupported	\in	∈	⠈⠑
\vdash	⊢	⠸⠒ ⠒⠸	\geq	≥	⠂⠂⠿
\succ	≻	⠪⠒	\succeq	⪰	⠪⠒⠿
\gg	≫	⠒⠪ ⠿	\supset	⊃	⠒⠪
\supseteq	⊇	⠸⠒⠿	\sqsupset	⊐	unsupported
\sqsupseteq	⊒	unsupported	\ni	∋	⠈⠢
\dashv	⊣	⠒⠸ ⠸⠒	\equiv	≡	⠿
\sim	∼	⠰⠱	\simeq	≃	⠰⠱⠿
\asymp	≍	⠒⠒	\approx	≈	⠰⠰
\cong	≅	⠰⠿	\neq	≠	⠌⠿
\ne	≠	⠌⠿	\not	/	⠌
\doteq	≐	⠤⠿	\propto	∝	⠶⠿
<	<	⠪	\models	⊨	⠸⠸⠿
\perp	⊥	⠸⠼	\mid			⠸
\parallel	∥	⠸⠸	\bowtie	⋈	unsupported
\Join	⋈	unsupported	\smile	⌣	⠠⠔
\frown	⌢	⠔⠠	=	=	⠿
>	>	⠒⠪	\leqq	≦	⠠⠇⠿
\lesssim	≲	⠪⠱	\lessdot	⋖	⠪⠤
\lesseqgtr	⋚	⠪⠿⠒	\risingdotseq	≓	unsupported
\backsimeq	⋍	unsupported	\sqsubset	⊏	unsupported
\precsim	≾	⠒⠪⠱	\triangllefteq	⊴	unsupported
\smallsmile	⌣	⠠⠔	\Bumpeq	≎	⠰⠴
\eqslantgtr	⪖	⠿⠒	\gtrdot	⋗	⠒⠪⠤
\gtreqless	⋛	⠒⠪⠿	\circeq	≗	⠴⠿
\thickapprox	≈	⠸⠰⠰	\sqsupset	⊐	unsupported
\succsim	≿	⠪⠒⠱	\trianglerighteq	⊵	unsupported
\shortparallel	∥	⠸⠸	\varpropto	∝	⠶⠿
\backepsilon	϶	⠈⠢	\leqslant	⩽	⠠⠇⠿
\lessapprox	⪅	⠪⠰⠰	\lll	⋘	⠪⠪⠪⠿
\lesseqqgtr	⪋	⠪⠿⠒	\fallingdotseq	≒	unsupported
\subseteqq	⫅	⠸⠪⠿	\preccurlyeq	≼	unsupported
\precapprox	⪷	⠒⠪⠰⠰	\vDash	⊨	⠸⠸⠿
\smallfrown	⌢	⠔⠠	\geqq	≧	⠂⠂⠿
\gtrsim	≳	⠒⠪⠱	\ggg	⋙	⠒⠪⠪⠿
\gtreqqless	⪌	⠒⠪⠿	\triangleq	≜	⠤⠿
\supseteqq	⫆	⠸⠒⠿	\succcurlyeq	≽	unsupported
\succapprox	⪸	⠪⠒⠰⠰	\Vdash	⊩	⠸⠸⠒
\between	≬	unsupported	\blacktriangleleft	◀	unsupported
\blacktriangleright	▶	unsupported	\eqslantless	⪕	⠿⠪
\approxeq	≊	⠰⠰⠿	\lessgtr	≶	⠪⠒
\doteqdot	≑	⠤⠿	\backsim	∽	unsupported
\Subset	⋐	⠸⠪⠒⠿	\curlyeqprec	⋞	unsupported
\vartriangleleft	◁	unsupported	\Vvdash	⊪	⠸⠸⠸⠒
\bumpeq	≏	unsupported	\geqslant	⩾	⠂⠂⠿
\gtrapprox	⪆	⠒⠪⠰⠰	\gtrless	≷	⠒⠪⠪
\eqcirc	≖	⠰⠴⠿	\thicksim	∼	⠸⠰⠱
\Supset	⋑	⠸⠒⠪⠿	\curlyeqsucc	⋟	unsupported
\vartriangleright	▷	unsupported	\shortmid	∣	⠸
\pitchfork	⋔	unsupported	\therefore	∴	⠠⠡
\because	∵	⠡⠄			

Table 9. Relation operators.

Command		Braille	Command		Braille
\nless	≮	⠐⠅	\nleqq	≰	⠐⠅⠿⠿
\lvertneqq	≨	unsupported	\nprec	⊀	⠐⠅⠿
\precnapprox	⪹	⠐⠅⠿⠿⠿	\nmid	∤	⠐⠤
\ntriangleleft	⋪	unsupported	\subsetneq	⊊	⠨⠅⠿
\varsubsetneqq	⊊	⠨⠅⠿⠿	\ngeqslant	⩾̸	⠐⠅⠿
\gneqq	≩	⠐⠇⠿	\gnapprox	⪊	⠐⠇⠿⠿
\succnsim	⋩	⠐⠇⠿⠿	\nshortparallel	∦	⠐⠿⠿
\nVDash	⊮	⠐⠿⠿⠿	\nsupseteq	⊉	⠨⠅⠿
\varsupsetneq	⊋	⠨�	\nleq	≰	⠐⠅⠿
\lneq	⪇	⠐⠅⠿	\lnsim	⋦	⠐⠅⠿
\npreceq	⋠	⠐⠅⠿	\nsim	≁	⠐⠿
\nvdash	⊬	⠐⠿⠿⠿	\ntrianglelefteq	⋬	unsupported
\varsubsetneq	⊊	⠨⠅⠿	\ngtr	≯	⠐⠇
\ngeqq	≱	⠐⠇⠿	\gvertneqq	≩	⠐⠇⠿
\nsucc	⊁	⠐⠇	\succnapprox	⪺	⠐⠇⠿⠿
\nparallel	∦	⠐⠿⠿	\ntriangleright	⋫	unsupported
\nsupseteqq	⊉	⠨⠅⠿⠿	\supsetneqq	⊋	⠨⠇⠿⠿
\nleqslant	⩽̸	⠐⠅⠿	\lneqq	≨	⠐⠅⠿
\lnapprox	⪉	⠐⠅⠿⠿	\precnsim	⋨	⠐⠅⠿
\nshortmid	∤	⠐⠤	\nvDash	⊭	⠐⠿⠿⠿
\nsubseteq	⊄	⠨⠅⠿	\subsetneqq	⊊	⠨⠅⠿
\ngeq	≱	⠐⠇	\gneq	⪈	⠐⠇
\gnsim	⋧	⠐⠇⠿	\nsucceq	⋡	⠐⠇⠿
\ncong	≇	⠐⠿⠿	\nvDash	⊭	⠐⠿⠿⠿
\ntrianglerighteq	⋭	unsupported	\supsetneq	⊋	⠨⠇⠿
\varsupsetneqq	⊋	⠨⠇⠿⠿			

Table 10. AMS negated relation operators.

`\ldots`	⋯	⠄ ⠄ ⠄	`\aleph`	ℵ	⠄⠄⠄
`\hbar`	ℏ	⠐⠆⠦	`\surd`	√	⠲⠆
`\imath`	ı	unsupported	`\top`	⊤	⠳⠩ ⠠⠭ ⠳⠰
`\wp`	℘	⠈⠱⠒	`\heartsuit`	♡	unsupported
`\Im`	ℑ	⠠⠊⠩	`\cdots`	⋯	⠄ ⠄ ⠄
`\prime`	′	⠄	`\emptyset`	∅	⠿⠒⠠⠭
`\varnothing`	∅	⠿⠒⠠⠭	`\Box`	□	⠶⠶⠶
`\jmath`	ȷ	unsupported	`\flat`	♭	unsupported
`\bot`	⊥	⠳⠩⠒	`\spadesuit`	♠	unsupported
`\angle`	∠	⠫⠼⠩	`\vdots`	⋮	⠒⠒⠒ ⠄⠄⠄
`\forall`	∀	⠈⠯	`\exists`	∃	⠈⠿
`\triangle`	△	⠫⠼	`\ell`	ℓ	⠈⠇
`\natural`	♮	unsupported	`\clubsuit`	♣	unsupported
`\mho`	℧	unsupported	`\partial`	∂	⠈⠲
`\ddots`	⋱	⠒⠒⠒ ⠄⠄⠄	`\infty`	∞	⠿⠿
`\nabla`	∇	⠫⠻	`\Diamond`	◇	⠫⠳
`\neg`	¬	⠈⠔⠒ ⠠⠬	`\sharp`	♯	⠈⠡
`\diamondsuit`	◇	unsupported	`\Re`	ℜ	⠠⠗⠫
`\adots`	⋰	⠒⠒⠒ ⠄⠄⠄	`\hslash`	ℏ	unsupported
`\lozenge`	◊	⠫⠳	`\nexists`	∄	⠌⠈⠿
`\backprime`	‵	unsupported	`\blacksquare`	■	⠿⠿⠿
`\complement`	∁	⠈⠒⠈	`\square`	□	⠶⠶⠶
`\blacktriangledown`	▼	⠫⠫⠫	`\vartriangle`	△	⠫⠼
`\circledS`	Ⓢ	⠫⠎ ⠫⠎ ⠫⠎	`\Finv`	⅂	unsupported
`\varnothing`	∅	⠿⠒⠠⠭	`\blacklozenge`	⧫	⠫⠫⠳
`\eth`	ð	unsupported	`\measuredangle`	∡	⠫⠼⠩ ⠫⠼ ⠈⠿
`\sphericalangle`	∢	unsupported	`\triangledown`	▽	unsupported
`\Game`	⅁	unsupported	`\blacktriangle`	▲	⠫⠫⠼
`\bigstar`	★	⠫⠫⠔	`\diagup`	╱	⠌
`\Bbbk`	⅀	⠰�	`\diagdown`	╲	⠳

Table 11. Miscellaneous Symbols.

\llbracket	⟦	˙ ⦂⦂	\left\llbracket	⟦	˙ ⦂ ⦂⦂
\bigl\llbracket	⟦	˙ ⦂ ⦂⦂	\Bigl\llbracket	⟦	˙ ⦂ ⦂⦂
\biggl\llbracket	⟦	˙ ⦂ ⦂⦂	\Biggl\llbracket	⟦	˙ ⦂ ⦂⦂
\rrbracket	⟧	˙ ⦂⦂	\right\rrbracket	⟧	˙ ⦂ ⦂⦂
\bigr\rrbracket	⟧	˙ ⦂ ⦂⦂	\Bigr\rrbracket	⟧	˙ ⦂ ⦂⦂
\biggr\rrbracket	⟧	˙ ⦂ ⦂⦂	\Biggr\rrbracket	⟧	˙ ⦂ ⦂⦂
\lbag	⟮	unsupported	\rbag	⟯	unsupported
\varg	g	˙⦂⦂	\varv	v	˙⦂.
\varw	w	˙⦂⦂	\vary	y	˙⦂⦂
\medcirc	○	⦂⦂˙˙	\circledwedge	⊘	⦂⦂˙˙ ⦂⦂˙ ˙˙⦂⦂
\circledbslash	⦸	⦂⦂˙˙ ⦂⦂⦂·⦂⦂	\boxbslash	⧅	⦂⦂·⦂ ⦂⦂·⦂⦂
\Wr	≀	unsupported	\rhd	▷	unsupported
\unlhd	⊴	unsupported	\medbullet	●	⦂⦂ ⦂˙˙
\circledvee	⊚	⦂⦂˙˙ ⦂⦂⦂ ˙⦂⦂⦂	\nplus	⊞	⦂˙⦂ ⦂⦂⦂⦂⦂
\boxbar	⊟	⦂⦂·⦂ ⦂⦂⦂·⦂⦂	\sqcupplus	⊎	unsupported
\lhd	◁	unsupported	\invamp	⅋	unsupported
\circledbar	⦶	⦂⦂˙˙ ⦂⦂⦂·⦂⦂	\boxast	⊠	⦂⦂·⦂ ⦂⦂ ˙⦂⦂⦂
\boxslash	⧄	⦂⦂·⦂ ⦂⦂⦂·⦂⦂	\sqcapplus	⊓	unsupported
\unrhd	⊵	unsupported	\Diamonddot	◇	⦂⦂˙˙ ⦂⦂⦂·⦂⦂
\lambdabar	ƛ	˙ ⦂⦂	\varheartsuit	♥	unsupported
\Bot	⫫	⦂⦂˙⦂ ⦂⦂⦂⦂·⦂	\Diamondblack	◆	⦂⦂ ⦂˙˙
\varclubsuit	♣	unsupported	\varspadesuit	♠	unsupported
\Diamond	◇	⦂⦂˙˙	\lambdaslash	ƛ	unsupported
\vardiamondsuit	♦	unsupported	\Top	⫪	⦂⦂·⦂ ⦂⦂ ⦂⦂·⦂

Table 12. More symbols from txfonts.sty.

\bignplus	⊞	⦂˙⦂ ⦂⦂⦂·⦂⦂	\bigsqcap	⨅	unsupported
\oiint	∯	⦂⦂ ˙⦂˙˙⦂⦂	\ointclockwise	∲	⦂⦂ ˙⦂⦂·⦂·⦂⦂
\sqint	⨓	⦂⦂ ˙⦂⦂·⦂⦂	\fint	⨏	˙⦂⦂
\iiiint	⨌	⦂⦂⦂⦂⦂	\oiintclockwise	∯	⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂
\oiiintctrclockwise	∰	⦂⦂⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂	\varoiiintclockwise	∰	⦂⦂⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂
\bigsqcupplus	⨄	unsupported	\bigsqcup	⨆	unsupported
\oiiint	∰	⦂⦂⦂⦂⦂ ˙⦂˙˙⦂⦂	\varointctrclockwise	∲	⦂⦂ ˙⦂⦂·⦂·⦂⦂
\sqiintop	⨖	⦂⦂⦂ ˙⦂⦂·⦂⦂	\iint	∬	⦂⦂⦂
\idotsint	∫⋯∫	⦂⦂. . .⦂⦂	\varoiintctrclockwise	∯	⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂
\oiiintclockwise	∰	⦂⦂⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂	\bigsqcapplus	⨄	unsupported
\varprod	⨯	˙ ˙˙.	\ointctrclockwise	∳	⦂⦂ ˙⦂⦂·⦂·⦂⦂
\varointclockwise	∲	⦂⦂ ˙⦂⦂·⦂·⦂⦂	\sqiiintop	⨖	⦂⦂⦂⦂ ˙⦂⦂·⦂⦂
\iiint	∭	⦂⦂⦂⦂	\iiiint	⨌	⦂⦂⦂⦂⦂
\oiintctrclockwise	∯	⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂	\varoiintclockwise	∯	⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂
\varoiiintctrclockwise	∰	⦂⦂⦂⦂⦂ ˙⦂⦂·⦂·⦂⦂			

Table 13. Large operators by txfonts.sty.

Command	Symbol	Braille	Command	Symbol	Braille
\nsqsubset	⊏̸	unsupported	\dashrightarrow	⇢	⠶⠄⠄⠶
\ntwoheadrightarrow	↠	⠄⠶⠄⠄⠶⠄	\Searrow	⬂	⠶⠶⠶⠶
\Perp	⫫	⠶⠶⠶⠶⠶	\boxright	⊟→	⠶⠶⠶⠶
\boxdotleft	←⊡	⠶⠶⠶⠶⠶	\Diamonddotright	◇→	⠶⠶⠶⠶⠶⠶
\boxLeft	⇐□	⠶⠶⠶⠶	\DiamondRight	◇⇒	⠶⠶⠶⠶
\DiamonddotLeft	⇐◇	⠶⠶⠶⠶⠶⠶	\circleddotright	⊙→	⠶⠶⠶⠶⠶
\multimapdotbothvert		⠶⠶⠶⠶	\nsqsupset	⊐̸	unsupported
\dashleftrightarrow	↔	⠶⠶⠶⠶	\ntwoheadleftarrow	↞	⠄⠶⠶⠄⠄
\Nwarrow	⬁	⠶⠶⠶⠶⠶	\leadstoext	∼	⠶⠶
\boxleft	←□	⠶⠶⠶⠶	\Diamondright	◇→	⠶⠶⠶⠶
\Diamonddotleft	←◇	⠶⠶⠶⠶⠶	\boxdotRight	⊡⇒	⠶⠶⠶⠶⠶⠶
\DiamondLeft	⇐◇	⠶⠶⠶⠶	\circleright	○→	⠶⠶⠶⠶
\circleddotleft	←⊙	⠶⠶⠶⠶⠶	\multimapdotbothAvert		⠶⠶⠶⠶
\dashleftarrow	⇠	⠶⠶⠶⠶	\leftsquigarrow	↜	⠶⠶⠶⠶
\Nearrow	⬀	⠶⠶⠶⠶	\Swarrow	⬃	⠶⠶⠶⠶
\leadsto	⇝	⠶⠶⠶⠶	\boxdotright	⊡→	⠶⠶⠶⠶
\Diamondleft	←◇	⠶⠶⠶⠶	\boxRight	□⇒	⠶⠶⠶⠶
\boxdotLeft	⇐⊡	⠶⠶⠶⠶⠶⠶	\DiamonddotRight	◇⇒	⠶⠶⠶⠶⠶⠶
\circleleft	←○	⠶⠶⠶⠶	\multimapbothvert		⠶⠶⠶⠶
\multimapdotbothBvert		⠶⠶⠶⠶	\mappedfrom	↤	⠶⠶⠶⠶
\Longmapsto	⟾	⠶⠶⠶⠶	\mmapsto	⊢→	⠶⠶⠶⠶
\longmmappedfrom	⟻	⠶⠶⠶⠶⠶	\Mmappedfrom	⇐⊣	⠶⠶⠶⠶
\varparallelinv	⫽	⠶⠶⠶	\colonapprox	≔≈	⠶⠶⠶
\Colonsim	∷∼	⠶⠶⠶	\multimapboth	○─○	⠶⠶⠶⠶
\multimapdotboth	●─●	⠶⠶⠶	\Vdash	⊩	⠶⠶⠶⠶
\preceqq	⪳	⠶⠶⠶	\nsuccsim	⋩̸	⠶⠶⠶⠶
\nlessapprox	⪉̸	⠶⠶⠶⠶	\nsucccurlyeq	⋡̸	unsupported
\nbumpeq	≠	unsupported	\nbacksimeq	≠	unsupported
\nequiv	≢	⠶⠶	\nsubset	⊄	⠶⠶⠶
\ngg	⪢̸	⠶⠶⠶⠶	\nprecapprox	⪹̸	⠶⠶⠶⠶
\nsucceqq	⪴̸	⠶⠶⠶	\notni	∌	⠶⠶
\notowns	∌	⠶⠶	\nsqsubseteq	⋢	unsupported
\eqqcolon	≕	⠶⠶	\Coloneqq	∷=	⠶⠶⠶
\Eqcolon	∹	⠶⠶⠶	\strictiff	⧦	⠶⠶⠶
\lJoin	⋉	unsupported	\openJoin	×	unsupported
\longmappedfrom	⟵	⠶⠶⠶⠶	\Mappedfrom	⟸	⠶⠶⠶
\longmmapsto	⊢⟶	⠶⠶⠶⠶	\Mmapsto	⊢⟹	⠶⠶⠶
\Longmmappedfrom	⟻	⠶⠶⠶⠶⠶	\nvarparallel	∦	⠶⠶
\colonsim	≔∼	⠶⠶⠶	\doteq	≐	⠶⠶⠶
\multimapdot	─●	⠶⠶⠶	\multimapdotbothA	○─●	⠶⠶⠶⠶
\VvDash	⊪	⠶⠶⠶⠶⠶	\succeqq	⪴	⠶⠶⠶
\nlesssim	⋦	⠶⠶⠶	\ngtrapprox	⪊̸	⠶⠶⠶⠶
\ngtrless	≹	⠶⠶⠶	\nBumpeq	≠	⠶⠶⠶
\nsim	≁	⠶⠶	\nsupset	⊅	⠶⠶⠶
\nthickapprox	≉	⠶⠶⠶⠶	\nsuccapprox	⪺̸	⠶⠶⠶⠶
\nsimeq	≄	⠶⠶⠶	\nSubset	⋐̸	⠶⠶⠶⠶⠶
\nsqsupseteq	⋣	unsupported	\coloneq	≔	⠶⠶
\Eqqcolon	≕	⠶⠶⠶	\strictif	⇁	⠶⠶⠶

Table 14a. More binary by txfonts.sty.

\circledless	⦵	⠒⠐⠛ ⠿⠒⠒ ⠐⠂ ⠿	\rJoin	⋈	unsupported
\lrtimes	⋈	unsupported	\Mapsto	⇨	⠿⠒ ⠿⠂ ⠒⠒ ⠿
\Longmappedfrom	⟸	⠿⠒ ⠐⠂ ⠒⠒ ⠒⠒ ⠿⠂	\mmappedfrom	↤	⠿⠒ ⠿⠂ ⠄⠄ ⠿⠂ ⠿⠂
\Longmmapsto	⟼	⠿⠒ ⠿⠂ ⠿⠂ ⠒⠒ ⠒⠒ ⠿⠂	\varparallel	∥	⠿⠒ ⠒
\nvarparallelinv	∦	⠐⠂ ⠿⠒ ⠐⠂ ⠿⠂ ⠠	\Colonapprox	∷≈	⠒ ⠒ ⠐ ⠐⠂ ⠒⠂ ⠐⠂
\multimapinv	⊸	⠿⠒ ⠒⠂ ⠄⠄ ⠄⠄	\multimapdotinv	●	⠿⠒ ⠂ ⠄⠄ ⠄⠄
\multimapdotbothB	●─○	⠿⠒ ⠒⠂ ⠄⠄ ⠄⠄ ⠿⠂ ⠒⠂	\nprecsim	⋨	⠐⠂ ⠒ ⠐⠂ ⠒ ⠠ ⠒⠂
\ngtrsim	⋧	⠐⠂ ⠒⠂ ⠐ ⠐⠂ ⠒	\npreccurlyeq	⋠	unsupported
\nlessgtr	≸	⠐⠂ ⠒⠂ ⠐ ⠐⠂	\nbacksim	⋍	unsupported
\nasymp	≭	⠐⠂ ⠿⠒ ⠿⠒ ⠠	\napprox	≉	⠐⠂ ⠒ ⠐⠂ ⠒ ⠐⠂
\nll	⋘	⠐⠂ ⠐⠂ ⠐ ⠐⠂ ⠿	\napproxeq	≊	⠐⠂ ⠒ ⠐⠂ ⠒ ⠐⠂ ⠐⠂
\npreceqq	⋞	⠐⠂ ⠒ ⠐⠂ ⠐⠂ ⠒⠒	\notin	∉	⠐⠂ ⠒ ⠠
\nSupset	⋣	⠐⠂ ⠿⠒ ⠿⠒ ⠐⠂ ⠿⠒ ⠿⠒ ⠐⠂ ⠐ ⠿	\coloneqq	≔	⠒ ⠐ ⠐⠂ ⠒⠒
\eqcolon	≕	⠒⠂ ⠐ ⠐	\Coloneq	∷─	⠒ ⠒ ⠐ ⠒⠂
\strictfi	⅂	⠿⠒ ⠿⠒ ⠄⠄ ⠄⠄	\circledgtr	⦵	⠿⠒ ⠐⠛ ⠿⠒⠒ ⠐⠂ ⠿
\Join	⋈	unsupported	\Join	⋈	unsupported
\opentimes	⨯	unsupported			

Table 14b. More binary by txfonts.sty.

\upint		⨛	⠒⠄ ⠐⠒	\lowint		⨜	⠐⠒ ⠒⠄

Table 15. Custom symbols.

Proposal for most of the unsupported symbols

The rules for what we attempt here are as follows:

1. For alternative character Nemeth preceeds the char 6 (used eg in ⊐). For doubly alternate we use char 6 two times. Eg for `\backsim` (∽) (first char 6 is to make the dash a tilde and the second char 6 is to invert tilde).

2. For curly characters Nemeth preceeds the char 46 (eg `\succ` (≻) or `\prec` (≺)).

3. Symbol-begin character 1246 and termination character 12456 are used to compose symbols (eg `\lhd` (◁)). However the inclusion of an already existing symbol means next level of curliness, or next level of scriptness. This is done for complex curly symbols, since confusion may arise if 46 is repeated (eg 46,156 below `\succ` (≻) can be interpreted as a Greek eta). So we propose to put `\succ` (≻) between symbol 1246 and termination 12456. Thus `\preccurlyeq` (≼) is ⠪ ⠂ ⠂⠉ ⠊⠒⠪

4. The same proceedure for letters means inversion. So `\coprod` (∐) is inverted `\Pi` (Π), that is ⠪ ⠐⠏ ⠵ Especially for i and j it means dotless (`\imath` (ı), `\jmath` (ȷ)).

Ten (10) symbols still remain unsupported. The table follows.

Command	Symbol	Braille	Command	Symbol	Braille
\coprod	∐	⠿	\vartriangleleft	◁	⠿
\sqcup	⊔	⠿	\curlyeqsucc	⋟	⠿
\sqcap	⊓	⠿	\vartriangleright	▷	⠿
\bigsqcup	⨆	⠿	\lvertneqq	≨	⠿
\bigsqcap	⨅	⠿	\ntriangleleft	⋪	⠿
\wr	≀	unsupported	\ntrianglelefteq	⋬	⠿
\triangleleft	◄	⠿	\ntriangleright	⋫	⠿
\triangleright	►	⠿	\ntrianglerighteq	⋭	⠿
\lhd	◁	⠿	\mho	℧	⠿
\unlhd	⊴	⠿	\hslash	ℏ	⠿
\rhd	▷	⠿	\backprime	‵	⠿
\unrhd	⊵	⠿	\Finv	⅁	⠿
\amalg	⨿	⠿	\eth	ð	⠿
\ltimes	⋉	⠿	\triangledown	▽	⠿
\rightthreetimes	⋌	unsupported	\Game	⅁	⠿
\rtimes	⋊	⠿	\Wr	≀	unsupported
\curlywedge	⋏	⠿	\sqcupplus	⊎	⠿
\leftthreetimes	⋋	unsupported	\invamp	⅋	⠿
\curlyvee	⋎	⠿	\sqcapplus	⊟	⠿
\sqsubset	⊏	⠿	\lambdaslash	ƛ	⠿
\sqsubseteq	⊑	⠿	\bigsqcupplus	⨄	⠿
\sqsupset	⊐	⠿	\bigsqcapplus	⨅	⠿
\sqsupseteq	⊒	⠿	\nsqsubset	⋢	⠿
\bowtie	⋈	⠿	\nsqsupset	⋣	⠿
\Join	⋈	⠿	\nsucccurlyeq	⋡	⠿
\risingdotseq	≓	unsupported	\nbacksim	∽̸	⠿
\backsimeq	⋍	⠿	\nsqsubseteq	⋢	⠿
\trianglelefteq	⊴	⠿	\lJoin	⋉	⠿
\trianglerighteq	⊵	⠿	\openJoin	⋈	⠿
\fallingdotseq	≒	unsupported	\nsqsupseteq	⋣	⠿
\preccurlyeq	≼	⠿	\lrtimes	⋈	⠿
\succcurlyeq	≽	⠿	\rJoin	⋊	⠿
\between	≬	⠿	\npreccurlyeq	⋠	⠿
\blacktriangleleft	◄	⠿	\nbacksim	∽̸	⠿
\blacktriangleright	►	⠿	\textvisiblespace	␣	⠿
\backsim	∽	⠿	\imath	ı	⠿
\curlyeqprec	⋞	⠿	\jmath	ȷ	⠿
\Rsh	↱	unsupported	\Lsh	↰	unsupported
\looparrowleft	↫	unsupported	\looparrowright	↬	unsupported

Table 16. Proposal for most of the unsupported symbols.

Proposal for accents not supported in Nemeth.

These are the \check (used for the inverse Fourier transform), the \acute, the \grave, and the \bar. The rules we propose are as follows:

1. \check is and alternative hat above.

2. Accent acute is a prime above.

3. Grave is an alternative prime above.

The following table shows an example.

\check{z}	ž	z followed without a space by ⠘⠡ ⠘ ⠒⠘⠡
\acute{z}	ź	z followed without a space by ⠘⠂
\grave{a}	à	a followed without a space by ⠘⠄ ⠘
\bar{a}	ā	a followed without a space by ⠱

Table 17. Proposal for unsupported accents.

2. Environments and structures

We list below the LaTeX environments and structures supported by latex2nemeth. By "structures" we mean commands that are not producing a special symbol, such as \frac.

1.1 Text commands

```
\documentclass (Recognized but ignored)
\usepackage (Recognized but ignored)
\newcommand (Recognized but ignored)
\newtheorem
\item
\index
\label
\ref
\textbf
\textit
\textsc (The command is ignored, the parameter is translated in the output)
\huge (The command is ignored, the parameter is translated in the output)
\accent
\input
\Input
\include
\textlatin
\grave
\chapter
\section
\subsection
$. . .$ (inline math mode)
```

1.2 Math commands

```
\sqrt
```

```
\frac
\mathcal
\underbrace
\overbrace
\overline
\underline
\tilde
\widetilde
\lenqno
\binom
\hat
\textrm
\mathrm
\text
\hbox
\textlatin
\left
\right
```
\textsc (The command is ignored, the parameter is translated in the output)
```
\quad
\bigr
\bigl
\biggr
\biggl
\Bigr
\Bigl
\Biggr
\Biggl
\big
\bigg
```
\\<SPACE>

1.3 Text Environments

```
document
enumerate
itemize
description
```
`figure` (recognized but ignored)
`center` (recognized but ignored)
```
quote
proof
math
equation
equation*
```
(the following introduce transitions in math mode)
```
$$
\[...\]
eqnarray
eqnarray*
align
align*
```

1.4 Math environments

```
array
cases
split
```

1.5 Abstract syntax of LATEX mathematical language.

The following provides the basic abstract syntax of the LATEX math language parsed by the program, expressed in BNF form.

```
<mathexpression> := (<simpleexpression>)+
```

```
<simpleexpression>:=<basicexpression>[ˆ<basicexpression>[_<basicexpression>]]
 |
<basicexpression>[_<basicexpression>[ˆ<basicexpression>]]
```

```
<basicexpression> := <mathcommand> | <atomicexpression> | <mathenvironment>
```

```
<atomicexpression>:= <character> | <symbol> | <atomic-command> |
\{" <mathexpression> \}" | <leftrightexpression>
```

```
<leftrightexpression> := <LEFT> <delimiter> <mathexpression> <RIGHT><delimiter>
```

In the above, `<mathenvironment>` is one of the math environments listed above. `<mathcommand>` is one of the math commands listed above. `<atomic-command>` is any command symbol (without parameters) that is not a `<mathcommand>`.

In BNF, `[...]` means optional, | means OR, `(...)*` means repetition zero or more times and `(...)+` means repetition one or more times.