```
\acute{a}
                                      \bar{a}
                                                          \dot{a}
                                                               \dot{a}
                                                                              \check{a}
                                                                                   \breve{a}
                                            \bar{a}
                                      \vec{a}
\check{a}
                 à
                      \grave{a}
                                            \sqrt{a}
                                                         \ddot{a}
                                                               \ddot{a}
                                                                              \tilde{a}
                                                                                   \tilde{a}
```

Table 8.1: Math mode accents (available in LATEX)

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	0	π	\pi	ϖ	\varpi	ρ	\rho
ϱ	\varrho	σ	\sigma	ς	\varsigma	au	\tau	v	υ
ϕ	\phi	φ	\varphi	χ	\chi	ψ	\psi	ω	\omega
Γ	\Gamma	Δ	\Delta	Θ	\Theta	Λ	\Lambda	Ξ	\Xi
Π	\Pi	\sum	\Sigma	Υ	Υ	Φ	\Phi	Ψ	\Psi
Ω	\Omega								

Table 8.2: Greek letters (available in \LaTeX)

\pm	\pm	\cap	\cap	\Diamond	\diamond	\oplus	\oplus
Ŧ	\mp	\cup	\cup	\triangle	\bigtriangleup	\ominus	\ominus
×	\times	\forall	\uplus	∇	\bigtriangledown	\otimes	\otimes
÷	\div	П	\sqcap	◁	\triangleleft	\oslash	\oslash
*	\ast	\sqcup	\sqcup	\triangleright	\triangleright	\odot	\odot
*	\star	\vee	\vee	\triangleleft	$ackslash \mathrm{lhd}^a$	\bigcirc	\bigcirc
0	\circ	\wedge	\wedge	\triangleright	$ackslash \mathtt{rhd}^a$	†	\dagger
•	\bullet	\	\setminus	\leq	$ackslash \mathrm{unlhd}^a$	‡	\ddagger
	\cdot	?	\wr	\trianglerighteq	$ackslash \mathrm{unrhd}^a$	П	\aggreen amalg

 $^{^{\}it a}$ Not predefined in NFSS. Use the latex sym or amssymb package.

Table 8.3: Binary operation symbols (available in $\mbox{\sc IAT}_{\mbox{\sc E}} X)$

\leq	\leq,\le	\geq	\geq,\ge	=	\equiv	\models	\models	\prec	\prec
\succ	\succ	\sim	\sim	\perp	\perp	\preceq	\preceq	\succeq	\succeq
\simeq	\simeq		\mid	\ll	\11	\gg	\gg	\asymp	\asymp
	\parallel	\subset	\subset	\supset	\supset	\approx	\approx	\bowtie	\bowtie
\subseteq	\subseteq	\supseteq	\supseteq	\cong	\cong	\bowtie	\Join		\sqsubset
	\sqsupset	\neq	\neq	$\overline{}$	\smile		\sqsubseteq	\supseteq	\sqsupseteq
\doteq	\doteq	$\overline{}$	\frown	\in	\in	\ni	\ni	\propto	\propto
=	=	\vdash	\vdash	\dashv	\d ashv	<	<	>	>

Table 8.4: Relation symbols (available in LATEX)

```
\leftarrow
                                  \longleftarrow
                                                           \uparrow
                                                                 \uparrow
                                                                 \Uparrow
\Leftarrow
     \Leftarrow
                                  \Longleftarrow
                                                           \uparrow
                                                                 \downarrow
     \rightarrow
                                  \longrightarrow
                                                           1
     \Rightarrow
                                  \Longrightarrow
                                                           \Downarrow
                                                                \Downarrow
\Rightarrow
     \leftrightarrow
                                  \longleftrightarrow
                                                                 \updownarrow
                                                           $
     \Leftrightarrow
                                  \Longleftrightarrow
                                                                 \Updownarrow
\Leftrightarrow
                                                                 \nearrow
     \mapsto
                                  \longmapsto
     \hookleftarrow
                                  \hookrightarrow
                                                                 \searrow
     \leftharpoonup
                                  \rightharpoonup
                                                                 \swarrow
                                  \rightharpoondown
     \leftharpoondown
                                                                 \nwarrow
```

Table 8.5: Arrow symbols (available in LATEX)

```
\cdots
      \ldots
                     . . .
                                                \vdots
                                                                         \ddots
                                                                                          ×
                                                                                               \aleph
1
      \prime
                     \forall
                            \forall
                                                \infty
                                                                   \hbar
                                                                         \hbar
                                                                                          Ø
                                                                                               \emptyset
                                           \infty
\exists
                                                                   \exists
                     \nabla
                            \nabla
                                                \surd
                                                                         \backslash Box^a
                                                                                          Δ
                                                                                               \triangle
                                           \sqrt{}
\Diamond
      \Diamond<sup>a</sup>
                                                                   \ell
                            \imath
                                                \jmath
                                                                         \ell
                                                                                               \neg
                     \imath
      \top
T
                                                                         \sharp
                            \flat
                                                \natural
                                                                                               \wp
                                           Ь
                                                                   \Diamond
\perp
      \bot
                            \clubsuit
                                           \Diamond
                                                \diamondsuit
                                                                         \heartsuit
                                                                                                \spadesu.
      \backslash \mathtt{mho}^a
Ω
                     \Re
                            \Re
                                           \Im
                                                \Im
                                                                    7
                                                                         \angle
                                                                                               \partial
^{\it a} Not predefined in NFSS. Use the latex
sym or amssymb package.
                      Table 8.6: Miscellaneous symbols (available in IATEX)
                                                                                           \oint
        \sum
                      П
                            \prod
                                            Π
                                                  \coprod
                                                                       \int
        \bigcap
                            \bigcup
                                                  \bigsqcup
                                                                      \bigvee
                                                                                           \bigwedge
                                            \oplus
        \bigodot
                      \otimes
                            \bigotimes
                                                  \bigoplus
                                                                 \forall
                                                                      \biguplus
                      Table 8.7: Variable-sized symbols (available in LATEX)
             \arccos
                         \cos
                                   \csc
                                            \exp
                                                    \ker
                                                                 \limsup
                                                                             \min
                                                                                     \sinh
             \arcsin
                                                                             \Pr
                                                                                     \sup
                         \cosh
                                   \deg
                                            \gcd
                                                    \lg
                                                                \ln
             \arctan
                                   \det
                                                                             \sec
                                                                                     \tan
                         \cot
                                            \hom
                                                    \lim
                                                                \log
             \arg
                         \coth
                                   \dim
                                           \inf
                                                    \liminf
                                                                \max
                                                                             \sin
                                                                                     \tanh
```

Table 8.8: Log-like symbols (available in LATEX)

\uparrow	\uparrow	\uparrow	\Uparrow	\downarrow	\downarrow	\Downarrow	\Downarrow
{	\{	}	\}	\uparrow	\updownarrow	1	\Updownarrow
Ĺ	\lfloor	j	\rfloor	Ì	\lceil	ĺ	\rceil
(\ <mark>langle</mark>	\rangle	$\$ rangle	/	/	\	\backslash
ĺ	1		XI.				

Table 8.9: Delimiters (available in LATEX)

 \Rightarrow

 \prod

 \rightarrow

 \bigcirc

\nleftarrow

```
\rmoustache
                                                                      \lmoustache
                                                                                                                           \rgroup
                                                                                                                                                                              \lgroup
                 \arrowvert
                                                                      \Arrowvert
                                                                                                                           \bracevert
                                    Table 8.10: Large delimiters (available in LATEX)
               abc
                                                                                                     \widehat{abc}
                                   \widetilde{abc}
                                                                                                                          \widehat{abc}
               \overline{abc}
                                   \overleftarrow{abc}
                                                                                                     \overrightarrow{abc}
                                                                                                                          \overrightarrow{abc}
               \overline{abc}
                                   \overline{abc}
                                                                                                                          \underline{abc}
                                                                                                     \underline{abc}
                abc
                                   \overbrace{abc}
                                                                                                                           \underbrace{abc}
               \sqrt{abc}
                                   \sqrt{abc}
                                                                                                                           \sqrt[n]{abc}
                                   f,
                                                                                                                           \frac{abc}{xyz}
                                                      Table 8.11: LATEX math constructs
                                            x \varkappa \( \] \beth \( \] \daleth \( \] \gimel
        Table 8.12: AMS Greek and Hebrew (available with amssymb package)
                      \ulcorner \uncorner \ulcorner \ulcor
                   Table 8.13: AMS delimiters (available with amssymb package)
\Rrightarrow
                                                                           \rightsquigarrow
                                                                                                                                                             \leftleftarrows
\leftrightarrows
                                                            \Leftarrow
                                                                           \Lleftarrow
                                                                                                                                                              \twoheadleftarrow
\leftarrowtail
                                                           \leftarrow
                                                                           \looparrowleft
                                                                                                                                                              \leftrightharpoons
\curvearrowleft
                                                           Q
                                                                           \circlearrowleft
                                                                                                                                                             \Lsh
                                                                          \upharpoonleft
\upuparrows
                                                                                                                                                             \downharpoonleft
                                                                          \leftrightsquigarrow
                                                                                                                                                             \rightleftarrows
\multimap
                                                                                                                                               \rightleftharpoons
\rightrightarrows
                                                                           \twoheadrightarrow
                                                                                                                                                             \rightarrowtail
\looparrowright
                                                                           \rightleftharpoons
                                                                                                                                                             \curvearrowright
\circlearrowright
                                                                           \Rsh
                                                                                                                                                \downarrow \downarrow
                                                                                                                                                             \downdownarrows
                                                                           \upharpoonright,\restriction
\downharpoonright
                        Table 8.14: AMS arrows (available with amssymb package)
```

\nRightarrow

\to \nleftrightarrow

\to \nLeftrightarrow

Table 8.15: AMS negated arrows (available with amssymb package)

\nLeftarrow

\nrightarrow

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_

\leq	\leqq	\leq	\leqslant	<	\eqslantless
\lesssim	\lesssim	√ ≪	\lessapprox	$\stackrel{'}{pprox}$	\approxeq
$\stackrel{\sim}{\lessdot}$	\lessdot	///	\111,\111ess	_ ≶	\lessgtr
\leq	\lesseqgtr	≤	\lesseqqgtr	≑	\doteqdot,\Doteq
≓	\risingdotseq	=	\fallingdotseq	\sim	\backsim
<u>∽</u>	\backsimeq	\subseteq	\subseteqq	€	\Subset
	\sqsubset	$\stackrel{-}{\preccurlyeq}$	\preccurlyeq	\curlyeqprec	\curlyeqprec
\preceq	\precsim		\precapprox	\triangleleft	\vartriangleleft
\leq	\trianglelefteq	Υ ≋ μ	\vDash	III	\Vvdash
\smile	\smallsmile	$\overline{}$	\smallfrown	≏	\bumpeq
≎	\Bumpeq	\geq	\geqq	\geqslant	\geqslant
≽	\eqslantgtr	~ 1	\gtrsim		\gtrapprox
➣	\gtrdot	>>>	\ggg,\gggtr	\geqslant	\gtrless
\geq	\gtreqless	>> \ 	\gtreqqless	<u> </u>	\eqcirc
<u></u>	\circeq	$\stackrel{\triangle}{=}$	\triangleq	~	\thicksim
\approx	\thickapprox	\supseteq	\supseteqq	\supset	\Supset
\Box	\sqsupset	≽	\succcurlyeq	\succ	\curlyeqsucc
\succeq	\succsim	X	\succapprox	\triangleright	\vartriangleright
⊵	\trianglerighteq	ΪΉ	\Vdash	1	\shortmid
П	\shortparallel	Ŏ	\between	\forall	\pitchfork
\propto	\varpropto	~	\blacktriangleleft	··.	\therefore
Э	\backepsilon	•	\blacktriangleright	::	\because

Table 8.16: AMS binary relations (available with amssymb package)

≮	\nless	≰	\nleq	≰	\nleqslant
≰	\nleqq	≨	\lneq	≨	\lneqq
≠ ¥¥	\lvertneqq	\lesssim	\label{lnsim}	√&7%	\lnapprox
*	\nprec	Ź	\npreceq	$\frac{1}{2}$	\precnsim
\% -%	\precnapprox	~	\nsim	ł	\nshortmid
Ť	\nmid	\nvdash	\nvdash	$\not\models$	\nvDash
	\ntriangleleft	⊉	\n	⊈	\nsubseteq
\subsetneq	\subsetneq	\neq	\varsubsetneq	,	\subsetneqq
≨	\varsubsetneqq	*	\ngtr	≱	\ngeq
~Y#V#V#¥	\ngeqslant	≱	\ngeqq	\geq	\gneq
\geq	\gneqq	$\stackrel{\cdot}{\geq}$	\gvertneqq		\gnsim
≳	\gnapprox	X	\nsucc	$\gtrsim \pm$	\nsucceq
, ,>,	\succnsim	 ₩	\succnapprox	\ncong	\ncong
Ħ	\nshortparallel	$ \downarrow $	\nparallel	¥	\nvDash
¥	\nVDash	$\not\!$	\ntriangleright	⊭	\n
⊉ ⊋	\nsupseteq	$ ot \geq$	\nsupseteqq	\supseteq	\supsetneq
\supseteq	\varsupsetneq	\supseteq	\supsetneqq	$\supseteq \neq$	\varsupsetneqq

Table 8.17: AMS negated binary relations (available with ${\sf amssymb}$ package)

÷ ⊎ = < ⊡ × <	\dotplus \Cup,\doublecup \doublebarwedge \boxdot \ltimes \rightthreetimes	\rac{1}{2}	\barwedge \boxminus \boxplus	s ⋒ ⊻ ⊠ * ```	\veebar \boxtimes \divideontimes \leftthreetimes
(-)	\circleddash	, , (Я		(0)	
	\centerdot	T		Ü	(
	Table 8.18: AMS bina	ary (operators (available	with	amssymb package)
\hbar	\hbar	\hbar	\hslash	Δ	\vartriangle
∇	\triangledown		\square	\Diamond	\lozenge
\odot	\circledS	_	\angle	4	\measuredangle
∄	\nexists	Ω	\mho	\exists	\Finv
G	\Game	\Bbbk	\Bbbk	1	\backprime
Ø	\varnothing	\blacktriangle	\blacktriangle	\blacksquare	\blacktriangledown
	\blacksquare	♦	\blacklozenge	\star	\bigstar
\triangleleft	\sphericalangle	C	\complement	\eth	\eth
/	\diagup		\diagdown		

Table 8.19: AMS miscellaneous (available with amssymb package)

8.2.2 Names of Math Font Commands

The list of math font commands provided by the $\mathcal{A}_{\mathcal{M}}\mathcal{S}$ packages is shown in table 8.20 on the next page, where for each case an example is shown. In addition, the math font commands of table 7.4 on page 183 can be used.

In the amsmath package, \boldsymbol is to be used for individual bold math symbols and bold Greek letters—everything in math except for letters (where one would use \mathbf). For example, to obtain a bold ∞ , or \boldsymbol{\infty}, \boldsymbol{+}, \boldsymbol{\pi}, or \boldsymbol{0}.

Since \boldsymbol takes a lot of typing, you can introduce new commands for bold symbols to be used frequently:

For those math symbols where the command \boldsymbol has no effect because the bold version of the symbol does not exist in the currently available fonts, there exists a command "Poor man's bold" (\pmb), which simulates bold