```
\alpha
                        \theta
                             \theta
                                                                         \tau
\alpha
                                                   0
                                                                         \upsilon
β
     \beta
                             \vartheta
                                                   \pi
                                             \pi
     \gamma
                             \iota
                                                                         \phi
                                                   \varpi
                                             \varpi
\delta
                                                                        \varphi
     \delta
                        \kappa
                             \kappa
                                             \rho
                                                   \rho
                                                                   \varphi
     \epsilon
                        \lambda
                             \label{lambda}
                                                   \varrho
                                                                         \chi
\epsilon
                                             \varrho
                                                                   \chi
\varepsilon
     \varepsilon
                             \mu
                                                   \sigma
                                                                   \psi
                                                                         \psi
                        \mu
                                             \sigma
ζ
     \zeta
                                                   \varsigma
                                                                         \omega
                        \nu
                             \nu
\eta
     \eta
                        ξ
                              \xi
Γ
                                             \sum
     \Gamma
                        Λ
                             \Lambda
                                                   \Sigma
                                                                   \Psi
                                                                         \Psi
Δ
     \Delta
                        Ξ
                                             Υ
                                                   \Upsilon
                                                                   \Omega
                                                                        \Omega
                             \Xi
Θ
                        П
     \Theta
                             \Pi
                                                   \Phi
```

Table 1: Greek Letters

$\pm$	\pm	$\cap$	\cap	$\Diamond$	\diamond	$\oplus$	\oplus
Ŧ	\mp	$\cup$	\cup	Δ	\bigtriangleup	$\ominus$	\ominus
×	\times	$\forall$	\uplus	$\nabla$	\bigtriangledown	$\otimes$	\otimes
÷	\div	П	\sqcap	◁	$\$ triangleleft	$\oslash$	\oslash
*	\ast	$\Box$	\sqcup	$\triangleright$	$\triangleright$	$\odot$	\odot
*	\star	$\vee$	\vee	$\triangleleft$	$\backslash \mathtt{lhd}^*$	$\bigcirc$	\bigcirc
0	\circ	$\wedge$	\wedge	$\triangleright$	$\rhd^*$	†	\dagger
•	\bullet	\	\setminus	$\leq$	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	‡	\ddagger
•	\cdot	?	\wr	$\geq$	$\unrhd^*$	П	\amalg
+	+	_	_				

<sup>\*</sup> Not predefined in LATEX  $2_{\varepsilon}$ . Use one of the packages latexsym, amsfonts or amssymb.

Table 2: Binary Operation Symbols

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

<sup>\*</sup> Not predefined in LATeX  $2_{\mathcal{E}}$ . Use one of the packages latexsym, amsfonts or amssymb.

Table 3: Relation Symbols

, , ; ; :  $\colon$  .  $\dotp$ 

Table 4: Punctuation Symbols

$\leftarrow$	\leftarrow	$\leftarrow$	\longleftarrow	$\uparrow$	\uparrow
$\Leftarrow$	\Leftarrow	$\iff$	\Longleftarrow	$\uparrow$	\Uparrow
$\longrightarrow$	\rightarrow	$\longrightarrow$	\longrightarrow	$\downarrow$	\downarrow
$\Rightarrow$	\Rightarrow	$\Longrightarrow$	\Longrightarrow	$\Downarrow$	\Downarrow
$\longleftrightarrow$	\leftrightarrow	$\longleftrightarrow$	\longleftrightarrow	$\uparrow$	\updownarrow
$\Leftrightarrow$	$\Leftrightarrow$	$\iff$	\Longleftrightarrow	1	\Updownarrow
$\mapsto$	\mapsto	$\longmapsto$	\longmapsto	7	\nearrow
$\leftarrow$	\hookleftarrow	$\hookrightarrow$	\hookrightarrow		\searrow
_	\leftharpoonup		\rightharpoonup	/	\swarrow
$\overline{}$	\leftharpoondown	$\rightarrow$	\rightharpoondown	_	\nwarrow
$\rightleftharpoons$	\rightleftharpoons	$\sim$	$\label{leadsto} \$		

<sup>\*</sup> Not predefined in LATEX  $2_{\mathcal{E}}$ . Use one of the packages latexsym, amsfonts or amssymb.

Table 5: Arrow Symbols

	\ldots		\cdots	÷	\vdots	٠.	\ddots
×	\aleph	1	\prime	$\forall$	\forall	$\infty$	\infty
$\hbar$	\hbar	Ø	\emptyset	$\exists$	\exists		\Box*
$\imath$	$\$ imath	$\nabla$	\nabla	$\neg$	\neg	$\Diamond$	$\Diamond^*$
Ĵ	$\$ jmath		\surd	b	\flat	$\triangle$	\triangle
$\ell$	\ell	Ť	\top	þ	\natural	*	\clubsuit
Ø	\wp	$\perp$	\bot	#	\sharp	$\Diamond$	\diamondsuit
$\Re$	\Re		<b>\</b> I	\	\backslash	$\Diamond$	\heartsuit
$\Im$	\Im	_	\angle	$\partial$	\partial	$\spadesuit$	\spadesuit
$\Omega$	$\mbox{\mbo}^*$				1		

<sup>\*</sup> Not predefined in  $\LaTeX$ 2 $\varepsilon$ . Use one of the packages latexsym, amsfonts or amssymb.

Table 6: Miscellaneous Symbols

$\sum$	\sum	$\cap$	\bigcap	$\odot$	\bigodot
П	\prod	U	\bigcup	$\otimes$	\bigotimes
П	\coprod		\bigsqcup	$\oplus$	\bigoplus
ſ	$\$ int	V	\bigvee	+	\biguplus
∮	\oint	$\wedge$	\bigwedge		

Table 7: Variable-sized Symbols

\arccos	\cos	\csc	\exp	\ker	\limsup	\min	$\sinh$
\arcsin	\cosh	\deg	\gcd	\lg	\ln	\Pr	\sup
\arctan	\cot	\det	$\hom$	\lim	\log	\sec	\tan
\arg	$\c$	\dim	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$\label{liminf}$	$\max$	\sin	\tanh

Table 8: Log-like Symbols

Table 9: Delimiters

```
\lambda \text{rmoustache} \lambda \text{lmoustache} \rangle \text{rgroup} \left( \lambda \text{lgroup} \right) \lambda \text{rable 10: Large Delimiters} \hfrac{\hata}{a} \hat{a} \ha
```

$\frac{\widetilde{abc}}{\overline{abc}}$ $\overline{abc}$	<pre>\widetilde{abc} \overleftarrow{abc} \overline{abc}</pre>	$ \begin{array}{c} \widehat{abc} \\ \widehat{abc} \\ \underline{abc} \end{array} $	<pre>\widehat{abc} \overrightarrow{abc} \underline{abc}</pre>
$\widehat{abc}$	\overbrace{abc}	$\underline{abc}$	\underbrace{abc}
$ \sqrt{abc}  f' $	\sqrt{abc} f'	$\sqrt[n]{abc}$ $\frac{abc}{xyz}$	\sqrt[n]{abc} \frac{abc}{xyz}

Table 12: Some other constructions

 $^{\sqcap}$  \ulcorner  $^{\dashv}$  \urcorner  $_{\perp}$  \llcorner  $_{\perp}$  \llcorner

Table 13: AMS Delimiters

>	\dashrightarrow	<b>←</b>	\dashleftarrow	otin	\leftleftarrows	$\stackrel{\longleftarrow}{\Longrightarrow}$	\leftrightarrows
$\Leftarrow$	\Lleftarrow	<del>~~</del>	\twoheadleftarrow	$\leftarrow$	\leftarrowtail	$\leftarrow$	\looparrowleft
$\leftrightharpoons$	\leftrightharpoons	$ \leftarrow $	\curvearrowleft	O	\circlearrowleft	$\uparrow$	\Lsh
$\uparrow\uparrow$	\upuparrows	1	\upharpoonleft	1	\downharpoonleft	_	$\mbox{\mbox{\tt multimap}}$
<b>&lt;</b> ~~→	\leftrightsquigarrow	$\Rightarrow$	\rightrightarrows	ightleftarrows	\rightleftarrows	$\Rightarrow$	\rightrightarrows
ightleftarrows	\rightleftarrows	$\longrightarrow$	\twoheadrightarrow	$\longrightarrow$	\rightarrowtail	$\rightarrow$	$\label{looparrowright}$
$\rightleftharpoons$	\rightleftharpoons	$\curvearrowright$	\curvearrowright	$\bigcirc$	\circlearrowright	d	\Rsh
$\downarrow \downarrow$	\downdownarrows	1	\upharpoonright		\downharpoonright	<b>~</b> →	\rightsquigarrow

Table 14: AMS Arrows

Table 15: AMS Negated Arrows

 $\digamma$  \digamma  $\varkappa$  \varkappa

Table 16: AMS Greek

☐ \beth ☐ \daleth ☐ \gimel

Table 17: AMS Hebrew

ħ □ ∠ ⊃ ▲ ★ /	\hbar \square \measuredangle \Game \blacktriangle \bigstar \diagup	<i>ħ</i>	<pre>\hslash \lozenge \nexists \Bbbk \blacktriangledown \sphericalangle \diagdown</pre>	△ ⑤ ♡ ` C	\vartriangle \circledS \mho \backprime \blacksquare \complement	<ul><li>♀</li><li>♀</li><li>✓</li><li>✓</li></ul>	\triangledown \angle \Finv \varnothing \blacklozenge \eth
*/		4		C scella		ð	\eth

$\dot{+}$	\dotplus	\	\smallsetminus	$\bigcap$	\Cap	U	\Cup
$\overline{\wedge}$	\barwedge	$\underline{\vee}$	\veebar	$\overline{\wedge}$	\doublebarwedge	$\Box$	\boxminus
$\boxtimes$	\boxtimes	•	\boxdot	$\blacksquare$	\boxplus	*	\divideontimes
$\ltimes$	\ltimes	$\rtimes$	\rtimes	$\rightarrow$	\leftthreetimes	$\angle$	\rightthreetimes
人	\curlywedge	Υ	\curlyvee	$\ominus$	\circleddash	*	\circledast
0	\circledcirc		\centerdot	Т	\intercal		

Table 19: AMS Binary Operators

$\square \land \square \lor $	<pre>\leqq \lessapprox \lessgtr \risingdotseq \subseteqq \curlyeqprec \trianglelefteq \smallfrown \geqslant \gtrdot \gtreqqless \thicksim \sgsupset</pre>	<b>₩ 8 ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩</b>	<pre>\leqslant \approxeq \lesseqgtr \fallingdotseq \Subset \precsim \vDash \bumpeq \eqslantgtr \ggg \eqcirc \thickapprox \succcurlyeq</pre>	W IV II• W VV ∜ ₹RX II S VIIA A M	<pre>\eqslantless \lessdot \lesseqqgtr \backsim \sqsubset \precapprox \Vvdash \Bumpeq \gtrsim \gtrless \circeq \supseteqq \curlyeqsucc</pre>	Y @ II⊳∧IV??VIIV ( △ 从 IS ·II· ∰ ?∧	<pre>\lesssim \lll \doteqdot \backsimeq \preccurlyeq \vartriangleleft \smallsmile \geqq \gtrapprox \gtreqless \triangleq \Supset \succsim</pre>
	\thicksim	$\approx$	\thickapprox	$\supseteq$	\supseteqq	∋	\Supset
□ ↓≈ _ ∀ .	\sqsupset \succapprox \shortmid \varpropto	<b>∦</b> Δ = <b>▼</b>	\vartriangleright \shortparallel \blacktriangleleft	★ △ ∴	\curlyeqsucc \trianglerighteq \between \therefore		\succsim \Vdash \pitchfork \backepsilon
	\blacktriangleright	•	\because				

Table 20: AMS Binary Relations

	` -	L	\ -	L	<b>.</b>	+	\ -
$\checkmark$	\nless	≯	\nleq	*	\nleqslant	≱	\nleqq
$\leq$	\lneq	≨	\lneqq	$\stackrel{\leq}{=}$	$lem:lemma_lemma$	$\lesssim$	$\label{lnsim}$
≨	$\label{lnapprox}$	$\star$	\nprec	$\npreceq$	\npreceq	$\stackrel{\sim}{\sim}$	\precnsim
V%Y%	\precnapprox	$\nsim$	$\n$	<b>∤</b>	\nshortmid	1	\nmid
¥	\nvdash	¥	\nvDash		$\n$	⊉	$\n$
⊈	\nsubseteq	$\subsetneq$	\subsetneq	$\subseteq$	$\varsubsetneq$	$\subseteq$	\subsetneqq
$\neq$	\varsubsetneqq	$\nearrow$	\ngtr	≱	\ngeq	¥	\ngeqslant
, \\ <b>\</b> <b> </b>	\ngeqq	$\geq$	\gneq	$\geq$	\gneqq	$\geq$	\gvertneqq
$\gtrsim$	\gnsim	⋧	\gnapprox	$\neq$	\nsucc	$\not\succeq$	\nsucceq
$\not\succeq$	\nsucceq	}	\succnsim	,	\succnapprox	$\ncong$	\ncong
Ħ	\nshortparallel	Ĥ	nparallel	¥	\nvDash	$\not\Vdash$	\nVDash
$\not\triangleright$	$\ntriangleright$	⋭	$\n$	$ ot \geq$	$\nsupseteq$	$ \not\equiv$	\nsupseteqq
$\supseteq$	\supsetneq	$\supseteq$	\varsupsetneq	$\supseteq$	\supsetneqq	₽	$\vert var supsetneqq$

Table 21: AMS Negated Binary Relations

```
\llbracket
                                           \rrbracket
                                       Table 22: stmaryrd Delimiters
     \Longmapsfrom
                              \Longmapsto
                                                      \Mapsfrom
                                                                                 \Mapsto
     \nnearrow
                              \nnwarrow
                                                      \ssearrow
                                                                                 \sswarrow
                                                 7
                         7
     \shortdownarrow
                              \shortuparrow
                                                      \shortleftarrow
                                                                                 \shortrightarrow
                        1
                                                                                 \rightarrowtriangle
     \longmapsfrom
                              \mapsfrom
                                                      \leftarrowtriangle
                        \leftarrow
                                                 4—
                                                                            →
     \lightning
                              \rrparenthesis
                                                      \leftrightarroweq
                                                                                 \leftrightarrowtriangle
                        )
                                                 \Leftrightarrow
                                                                             ↔
                                         Table 23: stmaryrd Arrows
                             / \Arrownot |
                                              \Mapsfromchar | \Mapstochar
                             / \arrownot |
                                              \mapsfromchar
                                  Table 24: stmaryrd Extension Characters
    \Ydown
                               \Yleft
                                                        \Yright
                                                                                      \Yup
Υ
    \baro
                           \\
                               \bbslash
                                                        \binampersand
                                                                                      \bindnasrepma
φ
                                                    &
                                                                                 B
                                                                                      \boxbslash
    \boxast
                               \boxbar
                                                        \boxbox
                                                                                 *
                           \Box
                                                    \boxempty
    \boxcircle
                               \boxdot
                                                                                      \boxslash
0
                           •
                                                    \square
    \curlyveedownarrow
                           \nabla
                               \curlyveeuparrow
                                                        \curlywedgedownarrow
                                                                                      \curlywedgeuparrow
Υ
                                                    人
                                                                                 Â
\fatbslash
                           9
                               \fatsemi
                                                    \fatslash
                                                                                 \interleave
    \leftslice
                           \mathbb{M}
                               \merge
                                                        \minuso
                                                                                      \moo
                                                                                 \pm
                                                        \oblong
                                                                                      \obslash
\oplus
    \nplus
                           Φ
                               \obar
                                                    0
    \ogreaterthan
                           \olessthan
                                                        \ovee
                                                                                      \owedge
\bigcirc
                                                    \bigcirc
                                                                                 \bigcirc
    \rightslice
                               \sslash
                                                    \talloblong
                                                                                 \bigcirc
                                                                                      \varbigcirc
\Diamond
γ
    \varcurlyvee
                               \varcurlywedge
                                                    *
                                                        \varoast
                                                                                 Φ
                                                                                      \varobar
                           人
    \varobslash
                               \varocircle
                                                    \odot
                                                        \varodot
                                                                                      \varogreaterthan
\Diamond
                           0
                                                                                 \bigcirc
    \varolessthan
                           \Theta
                               \varominus
                                                    \oplus
                                                        \varoplus
                                                                                 0
                                                                                      \varoslash
 \bigcirc 
    \varotimes
                                                                                 Χ
                                                                                      \vartimes
                               \varovee
                                                    \Diamond
                                                        \varowedge
                                    Table 25: stmaryrd Binary Operators
                       \bigbox
                                              \bigcurlyvee
                                                                       \bigcurlywedge
                        \biginterleave
                                                                       \bigparallel
                                              \bignplus
                       \bigsqcap
                                              \bigtriangledown
                                                                       \bigtriangleup
                                 Table 26: stmaryrd Large Binary Operators
        \inplus
                           \niplus
                                                 \subsetplus
                                                                              \subsetpluseq
    \oplus
                       \oplus
                                             \oplus
                                                 \trianglelefteqslant
        \supsetplus
                            \supsetpluseq
                                                                              \trianglerighteqslant
                                    Table 27: stmaryrd Binary Relations
                                                          \ntrianglerighteqslant
                           \ntrianglelefteqslant ≱
```

\Lbag

\llceil

\Rbag

\rrceil

\lbag

\llfloor

\rbag

\rrfloor

Table 28: stmaryrd Negated Binary Relations

Required pa	ckage
-------------	-------

		1 1 0
ABCdef	\mathrm{ABCdef}	
ABCdef	\mathit{ABCdef}	
ABCdef	\mathnormal{ABCdef}	
$\mathcal{ABC}$	\mathcal{ABC}	
$\mathcal{ABC}$	\mathcal{ABC}	euscript with option: mathcal
	\mathscr{ABC}	euscript with option: mather
ABCdef	<pre>\mathfrak{ABCdef}</pre>	eufrak
$\mathbb{ABC}$	\mathbb{ABC}	amsfonts or amssymb

Table 29: Math Alphabets