## fmocdmac — FM's OCD LATEX Macro\*

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## Abstract

This package contains almost all the latex macros I heavily use in my tcs research activity and, in particular, in the writing of conference and journal articles. As few of my co-authors have kindly pointed out, and probably many have thought, they are somehow a clear expression of an underlying ocd-like behavior... hence the name!

## 1 Implementation & Usage

```
1 (*package)
    Required external packages:
  3 \RequirePackage{etoolbox}
  5 \RequirePackage{xargs}
  6 \RequirePackage{xspace}
  7 \RequirePackage{stringstrings}
     Package options:
 10 %% Auxiliary packages
 11 \newif\ifaux@ \aux@false
 12 \DeclareOption{aux}{\aux@true}
13 \DeclareOption{noaux}{\aux@false}
15 %% AMS defaults
 16 \newif\ifamsdef@ \amsdef@true
17 \DeclareOption{noamsdef}{\amsdef@false}
19\ \mbox{\%\%} AMS theorem tools
20 \newif\ifamsthm@ \amsthm@true
23 %% Extended Theorem tools
24 \newif\ifthmtls@ \thmtls@true
25 \DeclareOption{nothmtls}{\thmtls@false}
27 %% Enumeration tools
28 \newif\ifenmtls@ \enmtls@true
29 \verb|\DeclareOption{noenmtls}{\cline{Condition}} | \cline{Condition} | \cline{Condit
31 %% Hyper reference
32 \neq 0 
35 %% Font tools
36 \newif\iffnttls@ \fnttls@true
```

<sup>\*</sup>This document describes version v0.12 of the fmocdmac package, last revised 2023/01/23.

```
37 \DeclareOption{nofnttls}{\fnttls@false}
39 %% Camera-ready version
40 \newif\ifcrv@ \crv@false
41 \DeclareOption{crv}{\crv@true}
43 %% Change bars
44 \newif\ifchgbar@ \chgbar@false
45 \DeclareOption{chgbar}{\chgbar@true}
47 %% Line numbers
48 \newif\iflinnum@ \linnum@false
49 \DeclareOption{linnum}{\linnum@true}
51
52 %% Text macro generation
53 \newif\iftxtgen@ \txtgen@false
54 \DeclareOption{txtgen}{\txtgen@true}
55 \DeclareOption{notxtgen}
    {\txtgen@false\text@false\com@false\log@false\aut@false}
57
58 %% Math macro generation
59 \newif\ifmthgen@ \mthgen@false
60 \DeclareOption{mthgen}{\mthgen@true}
61 \DeclareOption{nomthgen}
    {\mthgen@false\math@false\gam@false\log@false\aut@false}
63
64
65 %% Elementary macros for text
66 \newif\iftext@ \text@false
67 \DeclareOption{text}{\text@true\txtgen@true}
68 \DeclareOption{notext}{\text@false}
70 %% Elementary macros for math
71 \newif\ifmath@ \math@false
72 \DeclareOption{math}{\math@true\mthgen@true}
73 \ensuremath{$\ \ $$ \{\mathbf x_i\}$}
75
76 %% Macros for computational-complexity classes
77 \newif\ifcom@ \com@false
78 \DeclareOption{com}{\com@true\txtgen@true}
79 \DeclareOption{nocom}{\com@false}
82 %% Macros for games
83 \newif\ifgam@ \gam@false
84 \end{true} txtgen@true\mthgen@true\}
85 \DeclareOption{nogam}{\gam@false}
87 %% Macros for logics
88 \newif\iflog@ \log@false
89 \DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
90 \DeclareOption{nolog}{\log@false}
91
92 %% Macros for automata
93 \newif\ifaut@ \aut@false
94 \end{true} txtgen@true\end{true}
95 \DeclareOption{noaut}{\aut@false}
96
98 %% Format-related tricks
99 \newif\iffrm@ \frm@false
```

```
100 \DeclareOption{frm}{\frm@true}
101 \DeclareOption{nofrm}{\frm@false}
102
103
104 %% Figure-related tricks
105 \neq \frac{1}{100} \fig@false
106 \DeclareOption{fig}{\fig@true}
107 \DeclareOption{nofig}{\fig@false}
108
109 %% Wrapfig package
110 \newif\ifwrpfig@ \wrpfig@true
111 \DeclareOption{nowrpfig}{\wrpfig@false}
112
113
114 %% Table-related tricks
115 \newif\iftab@ \tab@false
116 \DeclareOption{tab}{\tab@true}
117 \DeclareOption{notab}{\tab@false}
118
119
120 %% Algorithm-related tricks
121 \newif\ifalg@ \alg@false
122 \DeclareOption{alg}{\alg@true}
123 \DeclareOption{noalg}{\alg@false}
124
     Option-processing code:
125
126 \ensuremath{\mbox{\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{
128 \ExecuteOptions{aux,txtgen,mthgen,text,math,com,gam,log,aut}%
130 \ProcessOptions\relax%
132 \ifcsdef{if@twocolumn}{}{\newif\if@twocolumn}
137 \ifaux@
138
139 \ifamsdef@
140 % AMS Packages
          \RequirePackage{amsmath}
          \RequirePackage{amssymb}
          \RequirePackage{stmaryrd}
          \interdisplaylinepenalty=2500
144
145\,\backslash\mathrm{fi}
146
147 \ifamsthm@
148 % AMS Theorem Tools
        \RequirePackage{amsthm}
150 \fi
151
152 \left| \text{ifthmtls@} \right|
153 % Extended Theorem Tools
154
          \RequirePackage{thmtools, thm-restate}
155 \fi
156
157 \ifenmtls@
          % Enumeration Tools
           \RequirePackage{paralist}
160 \fi
161
```

```
163
                                                                                  % Hyper References
                                                         164
                                                                                    \RequirePackage{hyperref}
                                                         165
                                                                                   \hypersetup {
                                                                                                                                                                       = {},
                                                                                             pdfsubject
                                                         166
                                                                                             pdfkeywords
                                                                                                                                                                       = {},
                                                         167
                                                                                             pdfproducer
                                                                                                                                                                       = {},
                                                         168
                                                                                             pdfcreator
                                                         169
                                                                                                                                                                       = {},
                                                                                             pdfpagemode
                                                                                                                                                                      = {UseNone},
                                                         170
                                                                                             pdfstartview = {FitH},
                                                         171
                                                                                              urlcolor
                                                                                                                                                                       = {blue},
                                                         172
                                                         173
                                                                                               colorlinks
                                                         174
                                                                                }
                                                         175 \fi
                                                        176
                                                        177 \iffnttls@
                                                                                 % Font Tools
                                                                                   \RequirePackage[final]{microtype}
                                                         179
                                                         180 \fi
                                                        181
                                                         182 \ifcrv@
                                                         183
                                                                                 % Camera-Ready Version
                                                         184
                                                                                  %%...
                                                         185
                                                         186
                                                        187 \else
                                                                                 % Draft Version
                                                        188
                                                         189
                                                        190
                                                                                 %%...
                                                        191
                                                                                   \ifchgbar@
                                                         192
                                                                                             % Change Bars
                                                         193
                                                                                              \RequirePackage{changebar}
                                                         194
                                                         195
                                                                                   \fi
                                                         196
                                                                                   \iflinnum@
                                                         197
                                                                                             % Line Numbers
                                                         198
                                                                                               \if@twocolumn
                                                         199
                                                                                                         \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
                                                         200
                                                         201
                                                         202
                                                                                                         \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
                                                         203
                                                         204
                                                                                   \fi
                                                         205
                                                                                  %%...
                                                        206
                                                        207
                                                       208 \fi
                                                       209
                                                       210 \fi
                                                        \mathbbo Bbo Math Font: ... to do!
                                                         215 \left\{ \mathbf{Mathbbo}_{\ mathbbo}_{\ mathbboo}_{\ mathb
\matheus Eus Math Font: ... to do!
                                                        216 \left\{ \mathbf{Matheus} \right\} \left\{ \mathbf{Matheux} \right\} \left\{ \mathbf{Matheus} \right\} \left\{ \mathbf{Matheus} \right\} \left\{ \mathbf{Matheux} \right\} \left\{ \mathbf{Matheus} \right\} \left\{ \mathbf{Matheux} \right\} 
\mathpzc Pzc Math Font: ... to do!
                                                        217 \ifdef{\mathpzc}{}{\DeclareMathAlphabet{\mathpzc}{T1}{pzc}{m}{it}}
```

162 \ifhypref@

```
\mathscr Scr Math Font: ... to do!
                                218 \left\{ \mathbf{Wathscr} \right\} \left\{ \mathbf{Mathscr} \right\} 
                                \omicron Auxiliary Greek lowercase letter: ... to do!
                                223 \csdef{omicron}{o}
\Alpha, ... Auxiliary Greek uppercase letters: ... to do!
                                224 \csdef{Alpha}{A} \csdef{Beta}{B} \csdef{Epsilon}{E} \csdef{varEpsilon}{E}
                                225 \texttt{\Zeta}{Z} \texttt{\Acsdef{Eta}{H} \texttt{\Iota}{I} \texttt{\Acsdef{Kappa}{K}}
                                226 \csdef{Nu}{N} \csdef{Nu}{N} \csdef{Omicron}{O}
                                227 \csdef{Rho}{P} \csdef{varRho}{P} \csdef{Tau}{T} \csdef{Chi}{X}
                                Emptiness check: \{A\}\{\langle B\}\}\ evaluates to the empty string, if Argument \langle A\rangle is empty,
                              and to Argument \langle B \rangle, otherwise.
                                      • \empchk{}{B} = ""
                                      • \empchk{A}{B} = "B"
                                232 \newcommand{\empchk}[2]
                                          {\left\{ if & 1 \right\} }
         \defval Default value: \defval{\langle A \rangle}{\langle B \rangle} evaluates to Argument \langle B \rangle, if Argument \langle A \rangle is empty, and to
                              Argument \langle A \rangle itself, otherwise.
                                      • \defval{}{B} = "B"
                                      • \defval{A}{B} = "A"
                                234 \newcommand{\defval}[2]
                                           {\left\{ if & 1 & 2 \le 1 \le 1 \right\}}
                                \alpha Left extension: \alpha \alpha evaluates to the concatenation \langle AB \rangle of the two arguments, if
                              Argument \langle B \rangle is non-empty, and to the empty string, otherwise.
                                      • \arglef{A}{} = ""
                                      • \arglef{A}{B} = "AB"
                                237 \newcommand{\arglef}[2]
                                           {\empchk{#2}{#1\allowbreak#2}}
         \argrig Right extension: \argrig{\langle A\rangle}{\langle B\rangle} evaluates to the concatenation \langle AB \rangle of the two arguments,
                              if Argument \langle A \rangle is non-empty, and to the empty string, otherwise.
                                      • \argrig{}{B} = ""
                                      • \argrig{A}{B} = "AB"
                                239 \newcommand{\argrig}[2]
                                           {\empchk{#1}{#1\allowbreak#2}}
         \ Middle extension: \ of the three
                              arguments, if Argument \langle B \rangle is non-empty, and to the empty string, otherwise.
                                      • \argmid{A}{}{C} = ""
                                      • \argmid{A}{B}{C} = "ABC"
                                241 \newcommand{\argmid}[3]
                                         {\empchk{#2}{#1\allowbreak#2\allowbreak#3}}
```

```
Separators: \argsep{\langle A \rangle}{\langle B \rangle}{\langle C \rangle} evaluates to Argument \langle C \rangle, if Argument \langle A \rangle is empty, to
               Argument \langle A \rangle, if Argument \langle C \rangle is empty, and to the concatenation \langle ABC \rangle, otherwise.
                  • \argsep{}{B}{C} = "C"
                  • \argsep{A}{B}{} = "A"
                  • \argsep{A}{}{C} = "AC"
                  • \argsep{A}{B}{C} = "ABC"
               243 \newcommand{\argsep}[3]
                    {\left \frac{1\&\#1\&\#3\leq\#1\arg\{\allowbreak\#2\}\{\#3\}\left i\right \}}{i}}
               Variadic commands: \operatorname{Varcmd}\{\langle A \rangle\}\{\langle B \rangle\}\{\langle C \rangle\}\{\langle D \rangle\}\{\langle E \rangle\}\{\langle F \rangle\} \dots to do!
     \varcmd
               246 \newcommand{\varcmd}[6]
                     {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
               247
                        {\csname check#1arg\endcsname{\argsep{##1}{#4}{##2}}}%
               248
               249
                     \expandafter\newcommand\csname check#larg\endcsname[1]
               250
                       {\csname @ifnextchar\endcsname%
                         \bgroup{\csname gobble#1arg\endcsname{##1}}{#2{##1#5}#6}}%
                251
                     \expandafter\newcommand\csname#1\endcsname[1]
                252
                       {\csname check#1arg\endcsname{#3##1}}}
               Sequence of tags: \ensuremath{\mathsf{Sequence}}\ (A) + (B) + (C) + \dots  to do!
   \seqoftag
                255 \newcommand{\seqoftag}[3]
               256
                    {\@for\itr:={#1}\do%
                257
                       {\expandafter\csedef{\itr#2}%
                         {\noexpand\csname #3\endcsname{\itr}}}
               258
              Sequence of commands: \sqoign{A}{\langle A \rangle} {\langle A \rangle} {\langle C \rangle} \dots \text{ to do!}
   \seqofcmd
                259 \newcommand{\seqofcmd}[3]
                260
                     {\@for\itr:={#1}\do%
                261
                       {\expandafter\csedef{\itr#2}%
                262
                         {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}
               \seqoflatlow Sequence of Latin lowercase letters: \seqoflatlow{\langle A \rangle}{\langle B \rangle} ... to do!
               264 \newcommand{\seqoflatlow}
                     {\left(a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z\right)}
\seqoflatupp Sequence of Latin uppercase letters: \seqoflatupp\{\langle A \rangle\}\{\langle B \rangle\} ... to do!
                266 \newcommand{\seqoflatupp}
                     {\left(A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z\right)}
\seqoflatlet Sequence of Latin letters: \seqoflatlet\{\langle A \rangle\}\{\langle B \rangle\} ... to do!
                268 \newcommand{\seqoflatlet}[2]
                     {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}
                Sequence of Greek lowercase letters: \seqofgrklow{\langle A \rangle}{\langle B \rangle} ... to do!
\seqofgrklow
                271 \newcommand{\seqofgrklow}
                     {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,zeta,eta,theta,vartheta,%
                272
                     iota, kappa, varkappa, lambda, mu, nu, xi, omicron, pi, varpi, rho, varrho, sigma, %
                273
                274
                     varsigma,tau,upsilon,phi,varphi,chi,psi,omega}}
              Sequence of Greek uppercase letters: \seqofgrkupp\{\langle A \rangle\}\{\langle B \rangle\}\ ... to do!
\seqofgrkupp
                275 \newcommand{\seqofgrkupp}
               276
                     {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,Zeta,Eta,Theta,varTheta,%
               277
                     Iota, Kappa, varKappa, Lambda, Mu, Nu, Xi, Omicron, Pi, varPi, Rho, varRho, Sigma, %
                278
                     varSigma,Tau,Upsilon,Phi,varPhi,Chi,Psi,Omega}}
```

```
\seqofgrklet Sequence of Greek letters: \seqofgrklet\{\langle A \rangle\}\{\langle B \rangle\} ... to do!
                                   279 \newcommand{\seqofgrklet}[2]
                                             {\seqofgrklow{#1}{#2}\seqofgrkupp{#1}{#2}}
                                   \seqoflow Sequence of lowercase letters: \seqoflow{\langle A \rangle}{\langle B \rangle} ... to do!
                                   282 \newcommand{\seqoflow}[2]
                                   283
                                            {\seqoflatlow{#1}{#2}\seqofgrklow{#1}{#2}}
        \seqofupp Sequence of uppercase letters: \seqofupp\{\langle A \rangle\}\{\langle B \rangle\} ... to do!
                                   284 \newcommand{\seqofupp}[2]
                                              {\seqoflatupp{#1}{#2}\seqofgrkupp{#1}{#2}}
        \seqoflet Sequence of all letters: \seqoflet\{\langle A \rangle\}\{\langle B \rangle\} ... to do!
                                   286 \newcommand{\seqoflet}[2]
                                             {\seqoflow{#1}{#2}\seqofupp{#1}{#2}}
                                   \newtxt ... to do!
                                        • \newtxt[\rmfamily]{Name}[sub][sup][Ext] = "Name_sub_Ext"
                                        • \newtxt[\sffamily]{Name}[sub][sup][Ext] = "Name_sub_Ext"
                                         • \newtxt[\ttfamily]{Name}[sub][sup][Ext] = "Name_sub_Ext"
                                   292 \newcommandx{\newtxt}[5][1=, 3=, 4=, 5=]
                                              {\text{#1#2\txtsubsup[#1]{#3}{#4}#5}\xspace}
      \newtxtsty ... to do!
                                        • \newtxtsty{\rmfamily}{Name}[sub][sup][Ext] = "Name_sup_Ext"
                                        • \newtxtsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext] = "Name_sub_Ext"
                                         • \newtxtsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext] = "Name_sup_Ext"
                                   294 \newcommandx{\newtxtsty}[2][2=]
                                             {\newtxt[\defval{#2}{#1}]}
      \newtxtarg ... to do!
                                        • \newtxtarg[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_{\text{sup}}^{\text{sup}}Ext1(Arg)Ext2"
                                        • \newtxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_sup_Ext1(Arg)Ext2"
                                         • \newtxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_sub_Ext1(Arg)Ext2"
                                   296 \newcommandx{\newtxtarg}[7][1=, 3=, 4=, 5=, 7=]
                                              {\newtxt[#1]{#2}[#3][#4][#5\argmid{(}{#6}{)}#7]}
\newtxtargsty ... to do!
                                         \bullet \mathtt{Name}^{\sup}_{\sup} [\mathtt{Ext1}] \{\mathtt{Arg}\} [\mathtt{Ext2}] = \mathtt{``Name}^{\sup}_{\sup} [\mathtt{Ext1}] \{\mathtt{Arg}\} [\mathtt{Ext2}] = \mathtt{``Name}^{\sup}_{\sup} [\mathtt{Ext1}] (\mathtt{Arg}) [\mathtt{Ext2}] = \mathtt{``Name}^{\sup}_{\sup} [\mathtt{Ex
                                        • \newtxtargsty{\rmfamily}[\sffamily][\sup][\sup][\sup][\sup][\st1]{\Arg}[\st2] = "Name_sup_\sup \st1(\Arg)\st2"
                                         • \newtxtargsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Namesup Ext1(Arg)Ext2"
                                   298 \newcommandx{\newtxtargsty}[2][2=]
                                            {\newtxtarg[\defval{#2}{#1}]}
    \newtxtoarg ... to do!
                                        • \newtxtoarg[\rmfamily]{Name}[sub][sup][Arg] = "Name_{sub}^{sup}(Arg)"
                                         • \newtxtoarg[\sffamily]{Name}[sub][sup][Arg] = "Name_sub_(Arg)"
                                         • \newtxtoarg[\ttfamily]{Name}[sub][sup][Arg] = "Name_sub_(Arg)"
                                   300 \newcommandx{\newtxtoarg}[5][1=, 3=, 4=, 5=]
                                            {\newtxtarg[#1]{#2}[#3][#4][]{#5}[]}
```

```
\newtxtoargsty ... to do!
                                                    • \mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargsty}(\mbox{\newtxtoargs
                                                    • \mbox{\ensuremath{\mbox{\sup}[sup][Arg]} = "Name}_{sub}(Arg)"}
                                                      \bullet \verb| \newtxtoargsty{\mbox{\newtxtoargsty}[\mbox{\newtxtoargsty}[\mbox{\newtxtoargsty}] [\mbox{\newtxtoargsty}] [\mbox{\newtxtoargsty}[\mbox{\newtxtoargsty}] [\mbox{\newtxtoargsty}] [\mbox{\newtxt
                                              302 \newcommandx{\newtxtoargsty}[2][2=]
                                             303 {\newtxtoarg[\defval{#2}{#1}]}
           \newtxtpar ... to do!
                                                    • \newtxtpar[\rmfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "Name_sup_Ext1[Par]Ext2"
                                                     • \newtxtpar[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "Name_sup}Ext1[Par]Ext2"
                                                    • \newtxtpar[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "Name_sub_Ext1[Par]Ext2"
                                              304 \newcommandx{\newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
                                                        {\newtxt[#1]{#2}[#3][#4][#5\argmid{[}{#6}{]}#7]}
  \newtxtparsty ... to do!
                                                    • \newtxtparsty{\rmfamily}{Name}[sub] [sup] [Ext1] {Par} [Ext2] = "Name_{sub}^{sup}Ext1[Par]Ext2"
                                                     • \newtxtparsty{\rmfamily}[\sffamily]{\Name}[sub][sup][Ext1]{\Par}[Ext2] = "Name_sub_Ext1[\Par]Ext2"
                                                     • \newtxtparsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
                                              306 \newcommandx{\newtxtparsty}[2][2=]
                                             307 {\newtxtpar[\defval{#2}{#1}]}
        \newtxtopar ... to do!
                                                    • \newtxtopar[\rmfamily]{Name}[sub][sup][Par] = "Name_sub_[Par]"
                                                    • \newtxtopar[\sffamily]{Name}[sub][sup][Par] = "Name_sub_[Par]"
                                                     • \newtxtopar[\ttfamily]{Name}[sub][sup][Par] = "Name_sub_Par]"
                                              308 \newcommandx{\newtxtopar}[5][1=, 3=, 4=, 5=]
                                                        {\newtxtpar[#1]{#2}[#3][#4][]{#5}[]}
\newtxtoparsty ... to do!
                                                    • \mbox{\ensuremath{\mbox{Name}} (Sub) [Sup] [Par] = "Name}_{sub} [Par]"}
                                                     \newtxtoparsty{\rmfamily}[\sffamily] {\Name} [sub] [sup] [Par] = "Name_sup[Par]"
                                                    • \newtxtoparsty{\rmfamily}[\ttfamily]{\Name}[sub][sup][Par] = "Name_sup_[Par]"
                                              310 \newcommandx{\newtxtoparsty}[2][2=]
                                                         {\newtxtopar[\defval{#2}{#1}]}
           \txtsubsup ... to do!
                                                    • \txtsubsup{sub}{} = "sub"; \txtsubsup{}{sup} = "sup"; \txtsubsup{sub}{sup} = "sub"
                                                     • \txtsubsup[\sffamily]{Aa}{Bb} = "Bb" Aa
                                                    • \txtsubsup[\ttfamily]{Aa}{Bb} = ^{\text{"Bb"}}_{Aa}
                                              312 \newcommand{\txtsubsup}[3][]
                                                         \txt ... to do!
                                                    • \text{txt{Name}}[\text{sub}][\text{sup}][\text{Ext}] = \text{"Name}_{\text{sub}}^{\text{sup}}\text{Ext"}
                                                     • \text{txt[\scshape]{Name}[sub][sup][Ext]} = \text{"Name}_{\text{Sub}}^{\text{SUP}} \text{Ext"}
                                                     • \text{txt}[\text{bfseries}]{\text{Name}}[\text{sub}][\text{sup}][\text{Ext}] = \text{"Name}_{\text{sub}}^{\text{sup}}\text{Ext}"
                                              315 \newcommand{\txt}
                                                         {\newtxtsty{\txtsty}}
                  \txtarg ... to do!
                                                    • \text{txtarg{Name}}[\text{sub}][\text{sup}][\text{Ext1}]{\text{Arg}}[\text{Ext2}] = \text{"Name}_{\text{sub}}^{\text{sup}}\text{Ext1}(\text{Arg})\text{Ext2}"
                                                     • \txtarg[\scshape]{Name}[sub] [sup] [Ext1] {Arg}[Ext2] = "NAME_SUB_EXT1(ARG)EXT2"
```

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• \txtarg[\bfseries]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_{sub}^{sup}Ext1(Arg)Ext2"
               317 \newcommand{\txtarg}
               318 {\newtxtargsty{\txtsty}}
   \txtoarg ... to do!
                  • \txtoarg{Name}[sub][sup][Arg] = "Name<sup>sup</sup><sub>sub</sub>(Arg)"
                  • \txtoarg[\scshape]{Name}[sub][sup][Arg] = "NAME_SUB(ARG)"
                  • \t \ [sub] [sup] [Arg] = "Name \ [sub]" [Arg] = "Name \ [sub]"
               319 \newcommand{\txtoarg}
               320 {\newtxtoargsty{\txtsty}}
    \txtpar ... to do!
                  • \text{txtpar{Name}[sub][sup][Ext1]{Par}[Ext2]} = \text{"Name}_{\text{sub}}^{\text{sup}} \text{Ext1}[Par] \text{Ext2"}
                  • \txtpar[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NAME_{SUB}^{SUP}EXT1[PAR]EXT2"
                  • \txtpar[\bfseries] {Name} [sub] [sub] [Ext1] {Par} [Ext2] = "Name sub Ext1[Par] Ext2"
               321 \newcommand{\txtpar}
               322 {\newtxtparsty{\txtsty}}
   \txtopar ... to do!
                  • \text{txtopar{Name}[sub][sup][Par]} = \text{"Name}_{\text{sub}}^{\text{sup}}[Par]"
                  • \txtopar[\schape]{Name}[sub][sup][Par] = "NAME_{SUB}^{SUP}[PAR]"
                  • \t \ [Sub] [Sup] [Par] = "Name \ [Par]"
               323 \newcommand{\txtopar}
                    {\newtxtoparsty{\txtsty}}
    \txtsty ... to do!
               325 \newcommand{\txtsty}
                    {\mdseries\upshape\rmfamily}
               \cmdtxt ... to do!
                  • \cmdtxt{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                    \mathsf{Name}[\mathsf{sub}][\mathsf{sup}][\mathsf{Ext}] = \mathsf{Name}^{\mathsf{SUP}}_{\mathsf{SUB}}[\mathsf{Ext}]
               328 \mbox{ }\mbox{newcommand{\cmdtxt}[1]}
                    {\csdef{txt#1}{\newtxtsty{\csname txtsty#1\endcsname}}}
 \cmdtxtarg ... to do!
                  • \cmdtxtarg{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                    \texttt{\txtargNewCmd}\{\texttt{Name}\}[\texttt{sub}][\texttt{sup}][\texttt{Ext1}]\{\texttt{Arg}\}[\texttt{Ext2}] = \texttt{Name}^{\texttt{SUP}}_{\texttt{SUB}}\texttt{Ext1}(\texttt{Arg})\texttt{Ext2}
               330 \newcommand{\cmdtxtarg}[1]
                    {\csdef{txtarg#1}{\newtxtargsty{\csname txtsty#1\endcsname}}}
\cmdtxtoarg ... to do!
                  • \cmdtxtoarg{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                    \t Name [sub] [sup] [Arg] = Name_{SUB} (Arg)
               332 \newcommand{\cmdtxtoarg}[1]
                    {\csdef{txtoarg#1}{\newtxtoargsty{\csname txtsty#1\endcsname}}}
 \cmdtxtpar ... to do!
                  • \cmdtxtpar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                    \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAME_SUB_EXT1[PAR]EXT2
               334 \newcommand{\cmdtxtpar}[1]
                    {\csdef{txtpar#1}{\newtxtparsty{\csname txtsty#1\endcsname}}}
\cmdtxtopar ... to do!
```

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\cmdtxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                                                 \verb|\txtoparNewCmd{Name}[sub][sup][Par] = \verb|\txtoparNewCmd{Name}[Par]|
                                       336 \newcommand{\cmdtxtopar}[1]
                                                 {\csdef{txtopar#1}{\newtxtoparsty{\csname txtsty#1\endcsname}}}
       \cmdtxtall ... to do!
                                             • \cmdtxtall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
                                                 \verb|\txtNewCmd{Name}[sub][sup][Ext] = \verb|\NAME|_{SUB}^{SUP}Ext|
                                                  \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAME_SUB_EXT1(ARG)EXT2
                                                  \verb|\txtoargNewCmd{Name}[sub][sup][Arg] = \verb|\Name|^{SUP}(Arg)
                                                  \verb|\txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = \verb|\txtparNewCmd{Name}[sub][sup][ext1][Par][ext2]
                                                 \t \ [sub] [sup] [Par] = NAME_{SUB}^{SUP} [PAR]
                                       338 \newcommand{\cmdtxtall}[1]
                                                {\cmdtxt{#1}\cmdtxtarg{#1}\cmdtxtoarg{#1}\cmdtxtpar{#1}\cmdtxtopar{#1}}
               \usrtxt ... to do!
                                             • \usrtxt{cmdName}{Suf}{}; \cmdNameSuf = cmdName
                                                  \t CmdName {Suf}{arg}; \c MameSuf{Arg} = cmdName(Arg)
                                                  \t {cmdName} {Suf} {par}; \t {Par} = cmdName [Par]
                                             • \usrtxt{cmdName}{Suf}{}[newName]; \cmdNameSuf = newName
                                                  \usrtxt{cmdName}{Suf}{arg}[newName]; \cmdNameSuf{Arg} = newName(Arg)
                                                  \t {cmdName} {Suf} {par} [newName]; \t {Par} = newName [Par]
                                       341 \newcommandx{\usrtxt}[4][4=]
                                                 {\csdef{#1#2}{\csname txt#3\endcsname{\defval{#4}{#1}}}}
                                       \newmth ... to do!
                                             • \newmth[mathrm]{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                             • \newmth[mathsf]{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                             • \newmth[mathtt]{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                       347 \newcommandx{\newmth}[5][1=, 3=, 4=, 5=]
                                                 {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}#5}}
       \newmthsty ... to do!
                                             • \newmthsty{mathrm}{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                             • \newmthsty{mathrm}[mathsf]{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                             • \newmthsty{mathrm}[mathtt]{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
                                       349 \newcommandx{\newmthsty}[2][2=]
                                                {\mathbb{L}}{\text{newmth}[\det\{\#2\}, \#1\}]}
       \newmtharg ... to do!
                                             • \newmtharg[mathrm] {Name} [sub] [sup] [Ext1] {Arg} [Ext2] = "Name_{sub}^{sup} Ext1(Arg)Ext2"
                                             • \newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_{sub}^{sup}Ext1(Arg)Ext2"
                                              \bullet \verb| \newmtharg[mathtt] {Name}[sub][sup][Ext1] {Arg}[Ext2] = "Name|_{sub}^{sup} Ext1(Arg) Ext2" \\
                                       351 \newcommandx{\newmtharg}[7][1=, 3=, 4=, 5=, 7=]
                                                 {\newmth[#1]{#2}[#3][#4][#5\argmid{\!\left(}{#6}{\right)\arglef{\!}{#7}}]}
\newmthargsty ... to do!
                                             • \newmthargsty{mathrm}{Name} [sub] [sup] [Ext1] {Arg} [Ext2] = "Name_{sub}^{sup} Ext1(Arg) Ext2"
                                              \bullet \verb| \newmthargsty{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name_{sub}^{sup}Ext1(Arg)Ext2" | \normalised for the subset of the s
                                              \bullet \verb| \newmthargsty{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name $^{sup}_{sub}Ext1(Arg)Ext2" | The substitution of the substitution
```

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353 \newcommandx{\newmthargsty}[2][2=]
                                                                                   {\newmtharg[\defval{#2}{#1}]}
            \newmthoarg ... to do!
                                                                            • \newmthoarg[mathrm] {Name} [sub] [sup] [Arg] = "Name _{sub}^{sup}(Arg)"
                                                                             • \newmthoarg[mathsf]{Name}[sub][sup][Arg] = "Name_{sub}^{sup}(Arg)"
                                                                             • \newmthoarg[mathtt]{Name}[sub][sup][Arg] = "Name_{sub}^{sup}(Arg)"
                                                                   355 \newcommandx{\newmthoarg}[5][1=, 3=, 4=, 5=]
                                                                                       {\newmtharg[#1]{#2}[#3][#4][]{#5}[]}
\newmthoargsty ... to do!
                                                                            • \newmthoargsty{mathrm}{Name}[sub][sup][Arg] = "Name_{sub}^{sup}(Arg)"
                                                                            • \newmthoargsty{mathrm} [mathsf] {Name} [sub] [sup] [Arg] = "Name_{sub}^{sup}(Arg)"
                                                                              \qquad \qquad \texttt{(Name) [sub] [sup] [Arg]} = \texttt{(Name)}^{sup} (Arg) \texttt{(Arg)} \texttt{(Arg)} \texttt{(Arg)} \texttt{(Name)}^{sup} (Arg) \texttt{(Arg)} \texttt{(
                                                                   357 \newcommandx{\newmthoargsty}[2][2=]
                                                                                       {\newmthoarg[\defval{#2}{#1}]}
               \newmthpar ... to do!
                                                                            • \newmthpar[mathrm] {Name} [sub] [sup] [Ext1] {Par} [Ext2] = "Name _{sub}^{sup} Ext1[Par]Ext2"
                                                                            \bullet \ \texttt{\ \ } [\texttt{Ext1}] \ \texttt{\ \ } [\texttt{Ext2}] = "\texttt{Name}^{sup}_{sub} Ext1[Par] Ext2"
                                                                              \bullet \ \texttt{\  Name} \ \texttt{\  Ext1} \ \texttt{\  (Par)} \ \texttt{\  Ext2} \ = \ \texttt{\  \  } \ \texttt{\  Ext1} \ \texttt{\  } \ \texttt{\ 
                                                                   359 \newcommandx{\newmthpar}[7][1=, 3=, 4=, 5=, 7=]
                                                                                    {\newmth[#1]{#2}[#3][#4][#5\argmid{\!\left[}{#6}{\right]\arglef{\!}{#7}}]}
   \newmthparsty ... to do!
                                                                             \bullet \verb| \newmthparsty{mathrm}{Name}[sub][sup][Ext1]{Par}[Ext2] = "Name_{sub}^{sup}Ext1[Par]Ext2" 
                                                                             • \newmthparsty{mathrm} [mathsf] {Name} [sub] [sup] [Ext1] {Par} [Ext2] = "Name _{sub}^{sup} Ext1[Par] Ext2"
                                                                              \bullet \texttt{ \  \  } \texttt{ [Ext1] \{Par\}[Ext2]} = \texttt{``Name} \texttt{ \  } \texttt{ Ext1[Par]Ext2''} 
                                                                   361 \newcommandx{\newmthparsty}[2][2=]
                                                                                     {\newmthpar[\defval{#2}{#1}]}
            \newmthopar ... to do!
                                                                             \bullet \verb| \newmthopar[mathrm] {Name} [sub] [sup] [Par] = "Name_{sub}^{sup} [Par]" 
                                                                              \qquad \qquad \texttt{`Name}^{sup}_{sub} \texttt{[Sub] [Sup] [Par]} = \texttt{``Name}^{sup}_{sub} [Par]" \\
                                                                             • \newmthopar[mathtt] {Name} [sub] [sup] [Par] = "Name_{sub}^{sup}[Par]"
                                                                   363 \newcommandx{\newmthopar}[5][1=, 3=, 4=, 5=]
                                                                                       {\newmthpar[#1]{#2}[#3][#4][]{#5}[]}
\newmthoparsty ... to do!
                                                                             \bullet \texttt{\ \ } [sub] [sup] [Par] = "Name_{sub}^{sup} [Par]" 
                                                                            • \newmthoparsty{mathrm} [mathsf] {Name} [sub] [sup] [Par] = "Name_{sub}^{sup}[Par]"
                                                                             • \newmthoparsty{mathrm} [mathtt] {Name} [sub] [sup] [Par] = "Name _{sub}^{sup} [Par]"
                                                                   365 \newcommandx{\newmthoparsty}[2][2=]
                                                                                   {\mathbb{L}}{\mathbb{L}}
               \mthsubsup ... to do!
                                                                   367 \newcommand{\mthsubsup}[2]
                                                                                  {\empchk{#1}{_{#1}}\empchk{#2}{^{#2}}}
                                                                   \mth ... to do!
                                                                            • \mathbb{Sup}[Sup][Ext] = "Name^{sup}_{sub}Ext"
                                                                             • \mathbf{Name}_{sub}^{sup}[\mathbf{Ext}] = \mathbf{Name}_{sub}^{sup}Ext
```

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370 \newcommand{\mth}
                                                                                                                            {\newmthsty{\mthsty}}
                          \mtharg ... to do!
                                                                                                                \bullet \  \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, "Name_{sub}^{sup} Ext1 (Arg) Ext2"
                                                                                                                • \mbox{\mbox{\tt mtharg[mathbf]} {\tt Name} [sub] [sup] [Ext1] {\tt Arg} [Ext2] = "Name_{sub}^{sup} Ext1(Arg) Ext2"}
                                                                                                                 • \mtharg[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "Name _{sub}^{sup}Ext1(Arg)Ext2"
                                                                                               372 \mbox{ } \mbox{mtharg}
                                                                                                                            {\newmthargsty{\mthsty}}
                     \mthoarg ... to do!
                                                                                                                • \mthoarg{Name}[sub][sup] [Arg] = "Name_{sub}^{sup}(Arg)"
                                                                                                                • \mthoarg[mathbf] {Name} [sub] [sup] [Arg] = "Name_{sub}^{sup}(Arg)"
                                                                                                                 \bullet \ \texttt{\t Name} \ \texttt{\t [sub] [sup] [Arg]} = \texttt{\t "Name} \ \texttt{\t sub} \ \texttt{\t [sup] [Arg]} = \texttt{\t "Name} \ \texttt{\t sub} \ \texttt{\t [sup] [Arg]} 
                                                                                               374 \newcommand{\mthoarg}
                                                                                                                                 {\newmthoargsty{\mthsty}}
                          \mthpar ... to do!
                                                                                                                \bullet \  \  \, \texttt{\bare}[\mathtt{Sub}] \  \, \texttt{\bare}[\mathtt{Ext1}] \  \, \texttt{\bare}[\mathtt{Ext2}] \  \, = \  \, "Name^{sup}_{sub} Ext1[Par] Ext2"
                                                                                                                \bullet \  \, \texttt{\bare}[mathbf] \  \, \texttt{\bare}[sub] \  \, \texttt{\bare}[Ext1] \  \, \texttt{\bare}[Ext2] \  \, = \  \, \texttt{\bare}[sub] \  \, \texttt{\bare}[Ext1] \  \, \texttt{\bare}[Ext2] \  \, = \  \, \texttt{\bare}[sub] \  \, \texttt{
                                                                                                                \bullet \  \, \texttt{\bare}[\texttt{mathtt}] \, \{\texttt{Name}\} \, [\texttt{sub}] \, [\texttt{sup}] \, [\texttt{Ext1}] \, \{\texttt{Par}\} \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 [Par] Ext2 \, \text{'`Par} \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext1 \, [Par] \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} \, \frac{\sup}{\sup} Ext2 \, [\texttt{Ext2}] \, = \, \text{``Name} 
                                                                                                376 \newcommand{\mthpar}
                                                                                                                            {\newmthparsty{\mthsty}}
                     \mthopar ... to do!
                                                                                                                • \mthopar[mathbf]{Name}[sub][sup][Par] = "Name_{sub}^{sup}[Par]"
                                                                                                                 • \mthopar[mathtt] {Name} [sub] [sup] [Par] = "Name _{sub}^{sup}[Par]"
                                                                                               378 \newcommand{\mthopar}
                                                                                                                             {\newmthoparsty{\mthsty}}
                           \mthsty ... to do!
                                                                                              380 \newcommand{\mthsty}
                                                                                                                           {}
                                                                                               \cmdmth ... to do!
                                                                                                                \bullet \ \mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mbox{$\mb
                                                                                                                            \verb|\mthNewCmd{Name}[sub][sup][Ext] = \verb|\mame| sub| Ext|
                                                                                                383 \newcommand{\cmdmth}[1]
                                                                                                                        {\csdef{mth#1}{\newmthsty{mthsty#1}}}
      \cmdmtharg ... to do!
                                                                                                                 • \cmdmtharg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
                                                                                                                             \verb|\mathresize | \texttt{Sub} [\texttt{sub}] [\texttt{sup}] [\texttt{Ext1}] \{\texttt{Arg}\} [\texttt{Ext2}] = \texttt{Name}_{sub}^{sup} Ext1(Arg) Ext2
                                                                                                385 \newcommand{\cmdmtharg}[1]
                                                                                                                        {\csdef{mtharg#1}{\newmthargsty{mthsty#1}}}
                                                                                              386
\cmdmthoarg ... to do!
                                                                                                                 • \cmdmthoarg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
                                                                                                                            \verb|\mbox| \verb| [sub] [sup] [Arg] = \verb|\mbox| \verb| [sup] [Arg] = \verb|\mbox| \verb| [sup] [Arg] = \verb|\mbox| \verb| [sub] [sup] [sup] = \verb|\mbox| \verb| [sub] = \verb|\mbox| = \verb|\mbox| \verb| [sub] = \verb|\mbox| =
                                                                                               387 \newcommand{\cmdmthoarg}[1]
                                                                                                                           {\csdef{mthoarg#1}{\newmthoargsty{mthsty#1}}}
      \cmdmthpar ... to do!
```

```
\cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
                 \mathbb{E}[\operatorname{Ext2}] = \operatorname{Name}_{sub}^{sup} Ext1 
             389 \newcommand{\cmdmthpar}[1]
                 {\csdef{mthpar#1}{\newmthparsty{mthsty#1}}}
 \cmdmthopar
            ... to do!
               • \cmdmthopar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
                 \mbox{\continuous}[sub][sup][Par] = \mbox{\continuous}[Par]
             391 \newcommand{\cmdmthopar}[1]
                 {\csdef{mthopar#1}{\newmthoparsty{mthsty#1}}}
  \cmdmthall ... to do!
               • \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
                 \verb|\mathNewCmd{Name}[sub][sup][Ext]| = \verb|\mathNewCmd{Name}| Ext|
                 \verb|\mbox| \verb| Sub| [sup] [Arg] = \verb|\mbox| mame|_{sub}^{sup} (Arg)
                 \verb|\mbox| \verb|\mbox| thparNewCmd{Name}[sub][sub][Ext1]{Par}[Ext2] = \verb|\mbox| ame|_{sub}^{sup} Ext1[Par]Ext2
                 \verb|\mbox| | [sub] [sup] [Par] = \verb|\mbox| | [Par] = \verb|\mbox| | [Par] |
             393 \newcommand{\cmdmthall}[1]
                 {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}
             \usrmth ... to do!
               • \sl = cmdName 
                 \verb|\usrmth{cmdName}{Suf}{par}[newName]; \verb|\cmdNameSuf}{Par} = newName[Par]
             396 \newcommandx{\usrmth}[4][4=]
                 {\csdef{#1#2}{\csname mth#3\endcsname{\defval{#4}{#1}}}}
             \usrmthlatlow ... to do!
             399 \newcommandx{\usrmthlatlow}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}
\usrmthlatupp ... to do!
             401 \verb|\newcommandx{\usrmthlatupp}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}
\usrmthlatlet ... to do!
             403 \newcommandx{\usrmthlatlet}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}
\usrmthgrklow ... to do!
             405 \newcommandx{\usrmthgrklow}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}
\usrmthgrkupp ... to do!
             407 \newcommandx{\usrmthgrkupp}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqofgrkupp{#1#2}{mth#3}}
\usrmthgrklet ... to do!
             409 \newcommandx{\usrmthgrklet}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}
  \usrmthlow ... to do!
             411 \newcommandx{\usrmthlow}[4][4=]
                 {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}
```

```
\usrmthupp ... to do!
                               413 \newcommandx{\usrmthupp}[4][4=]
                               414 {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}
       \usrmthlet ... to do!
                               415 \newcommandx{\usrmthlet}[4][4=]
                               421 \iftxtgen@
   \txtdef, ... to do!
                                    ullet \txtdef{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
                                     \qquad \qquad \bullet \  \  \, \texttt{`txtargdef\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2]} = Name_{sub}^{sup}Ext1(Arg)Ext2 
                                    ullet \txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2] = Name_{ext}^{sup}Ext1/Par]Ext2
                               422 %% Style for Definitions
                               423 \verb|\def|\newcommand{\txtstydef}{\normalfont\bfseries\em}|
       \cmdtxtdef ... to do!
                                    • \cmdtxtdef{cmdName};
                                       \verb|\cmdName[sub][sub][ext]| = cmdName_{sub}^{sub}ext
                                    • \cmdtxtdef{cmdName}[newName];
                                       \colon = newName[sub][sub][ext] = newName^{sub}_{sub}ext
                               424 \newcommandx{\cmdtxtdef}[2][2=]
                                       {\usrtxt{#1}{}{def}[#2]}
 \cmdtxtargdef ... to do!
                                    • \cmdtxtargdef{cmdName};
                                       \verb|\cmdName[sub][sub][ext1]{arg}[ext2] = cmdName_{sub}^{sub}ext1(arg)ext2
                                    • \cmdtxtargdef{cmdName}[newName];
                                       \verb|\cmdName[sub][sub][ext1]{arg}[ext2] = newName_{sub}^{sub}ext1(arg)ext2
                               426 \newcommandx{\cmdtxtargdef}[2][2=]
                               427 {\usrtxt{#1}{}{argdef}[#2]}
\cmdtxtoargdef ... to do!
                                    \cmdtxtoargdef{cmdName};
                                       \colon colon col
                                    \cmdtxtoargdef{cmdName}[newName];
                                       \colon = newName[sub][sub][arg] = newName^{sub}_{sub}(arg)
                                428 \newcommandx{\cmdtxtoargdef}[2][2=]
                               429 {\usrtxt{#1}{}{oargdef}[#2]}
 \cmdtxtpardef ... to do!
                                    \cmdtxtpardef{cmdName};
                                       \cmdName[sub][sub][ext1]\{par\}[ext2] = cmdName_{sub}^{sub}ext1/par]ext2
                                    \cmdtxtpardef{cmdName}[newName];
                                       \verb|\cmdName[sub][sub][ext1]{par}[ext2] = newName_{sub}^{sub}ext1[par]ext2
                               430 \newcommandx{\cmdtxtpardef}[2][2=]
                                      {\usrtxt{#1}{}{pardef}[#2]}
\cmdtxtopardef ... to do!
                                    • \cmdtxtopardef{cmdName};
                                       \cmdName[sub][sub][par] = cmdName_{sub}^{sub}[par]
                                    • \cmdtxtopardef{cmdName}[newName];
                                       \verb|\cmdName[sub][sub][par]| = newName_{sub}^{sub}/par|
```

```
432 \newcommandx{\cmdtxtopardef}[2][2=]
                                              {\usrtxt{#1}{}{opardef}[#2]}
    \txtabr, ... to do!
                                           ullet \txtabr{Name}[sub][sup][Ext] = Name_{
m sub}^{
m sup}Ext
                                            • \txtargabr{Name} [sub] [sup] [Ext1] {Arg} [Ext2] = Name_{\text{sub}}^{\text{sup}} Ext1(Arg) Ext2
                                            • \txtparabr{Name} [sub] [sup] [Ext1] {Par} [Ext2] = Name_{\mathrm{sub}}^{\mathrm{sup}} Ext1[Par]Ext2
                                      434 %% Style for Abbreviations
                                      435 \cmdtxtall{abr}\newcommand{\txtstyabr}{\em}
         \cmdtxtabr ... to do!
                                            \cmdtxtabr{cmdName};
                                                \verb|\cmdName[sub][sub][ext]| = cmdName_{\rm sub}^{\rm sub}ext
                                            • \cmdtxtabr{cmdName}[newName];
                                                \colon colon col
                                      436 \verb|\newcommandx{\cmdtxtabr}[2][2=]
                                      437 {\usrtxt{#1}{}{abr}[#2]}
  \cmdtxtargabr ... to do!
                                            • \cmdtxtargabr{cmdName};
                                                \verb|\cmdName[sub][sub][ext1]{arg}[ext2] = cmdName^{\text{sub}}_{\text{sub}}ext1(arg)ext2
                                            • \cmdtxtargabr{cmdName}[newName];
                                                \cmdName[sub][sub][ext1]{arg}[ext2] = newName_{sub}^{sub}ext1(arg)ext2
                                      438 \newcommandx{\cmdtxtargabr}[2][2=]
                                      439 {\usrtxt{#1}{}{argabr}[#2]}
\cmdtxtoargabr ... to do!
                                            • \cmdtxtoargabr{cmdName};
                                                \cmdName[sub][sub][arg] = cmdName_{sub}^{sub}(arq)
                                            • \cmdtxtoargabr{cmdName}[newName];
                                                \colon = newName[sub][sub][arg] = newName[sub](arg)
                                      440 \newcommandx{\cmdtxtoargabr}[2][2=]
                                              {\usrtxt{#1}{}{oargabr}[#2]}
  \cmdtxtparabr ... to do!
                                            • \cmdtxtparabr{cmdName};
                                                \cmdName[sub][sub][ext1][par][ext2] = cmdName_{sub}^{sub}ext1[par]ext2
                                            • \cmdtxtparabr{cmdName} [newName];
                                                \verb|\cmdName[sub][sub][ext1]{par}[ext2] = newName_{sub}^{sub}ext1[par]ext2|
                                      442 \newcommandx{\cmdtxtparabr}[2][2=]
                                              {\usrtxt{#1}{}{parabr}[#2]}
\cmdtxtoparabr ... to do!
                                            • \cmdtxtoparabr{cmdName};
                                                \cmdName[sub] [sub] [par] = cmdName_{\text{sub}}^{\text{sub}}/par
                                            • \cmdtxtoparabr{cmdName}[newName];
                                                \cmdName[sub][sub][par] = newName_{sub}^{sub}/par]
                                      444 \newcommandx{\cmdtxtoparabr}[2][2=]
                                                {\usrtxt{#1}{}{oparabr}[#2]}
                                      \txtname, ... to do!
                                            • \text{txtname}\{\text{Name}\}[\text{sub}][\text{Sup}][\text{Ext}] = \text{Name}_{\text{Sup}}^{\text{SUP}}\text{Ext}
                                            • \text{txtargname}\{\text{Name}\}[\text{sub}][\text{sup}][\text{Ext1}]\{\text{Arg}\}[\text{Ext2}] = \text{Name}_{\text{SUB}}^{\text{SUP}}\text{Ext1}(\text{Arg})\text{Ext2}
                                            • \text{txtparname}\{\text{Name}\}[\text{sub}][\text{sup}][\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{Name}_{\text{SUB}}^{\text{SUP}}\text{Ext1}[\text{Par}]\text{Ext2}
```

```
447 %% Style for Names
                                                            448 \cmdtxtall{name}\newcommand{\txtstyname}{\normalfont\mdseries\scshape\sffamily}
              \cmdtxtname ... to do!
                                                                     • \cmdtxtname{cmdName};
                                                                          \cmdName[sub][sub][ext] = CMDNAME_{SUB}^{SUB}EXT
                                                                     • \cmdtxtname{cmdName}[newName];
                                                                          \c Mame[sub][sub][ext] = NEWNAME_{SUB}^{SUB}EXT
                                                            449 \newcommandx{\cmdtxtname}[2][2=]
                                                            450 {\usrtxt{#1}{}{name}[#2]}
   \cmdtxtargname ... to do!
                                                                     • \cmdtxtargname{cmdName};
                                                                          \label{lem:cmdName} $$ \operatorname{[sub][sub][ext1]}_{arg}[ext2] = \operatorname{CMDNAME}_{SUB}^{SUB} \operatorname{EXT1}(\operatorname{ARG}) \operatorname{EXT2} $$
                                                                     • \cmdtxtargname{cmdName}[newName];
                                                                           \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAME_{SUB}^{SUB}EXT1(ARG)EXT2
                                                             451 \newcommandx{\cmdtxtargname}[2][2=]
                                                            452 {\usrtxt{#1}{}{argname}[#2]}
\cmdtxtoargname ... to do!
                                                                     \cmdtxtoargname{cmdName};
                                                                          \cmdName[sub][sub][arg] = CMDNAME_{SUB}^{SUB}(ARG)
                                                                     • \cmdtxtoargname{cmdName}[newName];
                                                                          \colon = NEWNAME_{SUB}^{SUB}(ARG)
                                                            453 \newcommandx{\cmdtxtoargname}[2][2=]
                                                                          {\usrtxt{#1}{}{oargname}[#2]}
   \cmdtxtparname ... to do!
                                                                     \cmdtxtparname{cmdName};
                                                                          \verb|\cmdName[sub][sub][ext1]{par}[ext2] = \verb|\cmdName[sub]| = \verb|\cmdNam
                                                                     • \cmdtxtparname{cmdName}[newName];
                                                                           \label{lem:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma:lemma
                                                            455 \newcommandx{\cmdtxtparname}[2][2=]
                                                                         {\usrtxt{#1}{}{parname}[#2]}
\cmdtxtoparname ... to do!
                                                                     \cmdtxtoparname{cmdName};
                                                                          \verb|\cmdName[sub][par]| = CMDNAME_{SUB}^{SUB}[PAR]|
                                                                     • \cmdtxtoparname{cmdName}[newName];
                                                                          \verb|\cmdName[sub][sub][par]| = NEWNAME_{SUB}^{SUB}[PAR]|
                                                            457 \newcommandx{\cmdtxtoparname}[2][2=]
                                                            458 {\usrtxt{#1}{}{oparname}[#2]}
          \txtcom, ... to do!
                                                                     • \text{txtcom{Name}[sub][sup][Ext]} = \text{Name}_{SUB}^{SUP} \text{Ext}
                                                                     • \t xtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAME_{SUB}^{SUP}EXT1(ARG)EXT2
                                                                     • \txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAME_{SUB}^{SUP}EXT1[PAR]EXT2
                                                            459 %% Style for Complexities
                                                            460 \cmdtxtall{com}\newcommand{\txtstycom}{\normalfont\mdseries\scshape\rmfamily}
                 \cmdtxtcom ... to do!
                                                                     • \cmdtxtcom{cmdName};
                                                                          \verb|\cmdName[sub][sub][ext]| = \texttt{CMDNAME}^{\texttt{SUB}}_{\texttt{SUB}} \texttt{EXT}
                                                                     • \cmdtxtcom{cmdName} [newName];
                                                                          461 \newcommandx{\cmdtxtcom}[2][2=]
                                                             462 {\usrtxt{#1}{}{com}[#2]}
```

```
\cmdtxtargcom ... to do!
                      • \cmdtxtargcom{cmdName};
                         \verb|\cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAME_{SUB}^{SUB}EXT1(ARG)EXT2
                      • \cmdtxtargcom{cmdName}[newName];
                         463 \newcommandx{\cmdtxtargcom}[2][2=]
                        {\usrtxt{#1}{}{argcom}[#2]}
\cmdtxtoargcom ... to do!
                      • \cmdtxtoargcom{cmdName};
                        \cmdName[sub][sub][arg] = CMDNAME_{SUB}^{SUB}(ARG)
                      \cmdtxtoargcom{cmdName}[newName];
                        \verb|\cmdName[sub][sub][arg]| = NEWNAME_{SUB}^{SUB}(ARG)
                   465 \newcommandx{\cmdtxtoargcom}[2][2=]
                        {\usrtxt{#1}{}{oargcom}[#2]}
 \cmdtxtparcom ... to do!
                      • \cmdtxtparcom{cmdName};
                        \verb|\cmdName[sub][sub][ext1]{par}[ext2] = CMDNAME_{SUB}^{SUB}EXT1[PAR]EXT2|
                      • \cmdtxtparcom{cmdName} [newName];
                        \label{lem:lemma:equation:lemma:equation:ext} $$ \operatorname{CmdName}[\operatorname{sub}][\operatorname{sub}][\operatorname{ext1}][\operatorname{par}][\operatorname{ext2}] = \operatorname{NEWNAME}_{\operatorname{SUB}}^{\operatorname{SUB}} \operatorname{EXT1}[\operatorname{PAR}] \operatorname{EXT2} $$
                   467 \mbox{\cmdtxtparcom}[2][2=]
                        {\usrtxt{#1}{}{parcom}[#2]}
\cmdtxtoparcom ... to do!
                      • \cmdtxtoparcom{cmdName};
                        \label{eq:cmdName} $$ \cmdName[sub][sub][par] = CMDNAME_{SUB}^{SUB}[PAR] $$
                      \cmdtxtoparcom{cmdName}[newName];
                        \verb|\cmdName[sub][par]| = NEWNAME_{SUB}^{SUB}[PAR]|
                   469 \mbox{newcommandx{\cmdtxtoparcom}[2][2=]}
                        {\usrtxt{#1}{}{oparcom}[#2]}
                   471 \fi
                   476 \ifmthgen@
 \mthname, ... to do!
                      ullet \mthname{NAME}[sub] [sup] [Ext] = \mathcal{NAME}^{sup}_{sub}Ext
                      \bullet \  \, \texttt{\bar{NAME}[sub][sup][Ext1]\{Arg\}[Ext2]} = \mathcal{NAME}^{sup}_{sub}Ext1(Arg)Ext2
                      • \mthparname{NAME}[sub][sup][Ext1]{Par}[Ext2] = \mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2
                   477 %% Style for Names
                   478 \mbox{ } \mbox{mthall{name}\newcommand{\mbox{mthstyname}{\mbox{mathcal}}}
   \AName, ... to do!
                   \mathcal{A},\,\mathcal{B},\,\mathcal{C},\,\mathcal{D},\,\mathcal{E},\,\mathcal{F},\,\mathcal{G},\,\mathcal{H},\,\mathcal{I},\,\mathcal{J},\,\mathcal{K},\,\mathcal{L},\,\mathcal{M},\,\mathcal{N},\,\mathcal{O},\,\mathcal{P},\,\mathcal{Q},\,\mathcal{R},\,\mathcal{S},\,\mathcal{T},\,\mathcal{U},\,\mathcal{V},\,\mathcal{W},\,\mathcal{X},\,\mathcal{Y},\,\mathcal{Z}
                   479 \seqoflatupp{Name}{mthname}
   \cmdmthname ... to do!
                      • \cmdmthname{CMDNAME};
                         \CMDNAMEName[sub][sub][ext] = \mathcal{CMDNAME}_{sub}^{sub}ext
                      • \cmdmthname{cmdName}[NEWNAME];
                        \colon {\tt CmdNameName[sub][sub][ext]} = \mathcal{NEWNAME}^{sub}_{sub} ext
                   480 \newcommandx{\cmdmthname}[2][2=]
                        {\usrmth{#1}{Name}{name}[#2]}
```

```
\cmdmthargname ... to do!
                         • \cmdmthargname{CMDNAME};
                            \CMDNAMEName[sub][sub][ext1]{arg}[ext2] = \mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2
                         • \cmdmthargname{cmdName}[NEWNAME];
                            \cmdNameName[sub][sub][ext1]{arg}[ext2] = \mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2
                      482 \newcommandx{\cmdmthargname}[2][2=]
                            {\usrmth{#1}{Name}{argname}[#2]}
\cmdmthoargname ... to do!
                         • \cmdmthoargname{CMDNAME};
                            \verb|\CMDNAMEName[sub][sub][arg]| = \mathcal{CMDNAME}_{sub}^{sub}(arg)
                         • \cmdmthoargname{cmdName}[NEWNAME];
                            \colon {\tt CmdNameName[sub][sub][arg]} = \mathcal{NEWNAME}^{sub}_{sub}(arg)
                      484 \newcommandx{\cmdmthoargname}[2][2=]
                            {\usrmth{#1}{Name}{oargname}[#2]}
 \cmdmthparname ... to do!
                         • \cmdmthparname{CMDNAME};
                            \CMDNAMEName[sub][sub][ext1]{par}[ext2] = \mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2
                         • \cmdmthparname{cmdName}[NEWNAME];
                            \cmdNameName[sub][sub][ext1]{par}[ext2] = \mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2
                      486 \newcommandx{\cmdmthparname}[2][2=]
                           {\usrmth{#1}{Name}{parname}[#2]}
\cmdmthoparname ... to do!
                         • \cmdmthoparname{CMDNAME};
                            \CMDNAMEName[sub][sub][par] = \mathcal{CMDNAME}_{sub}^{sub}[par]
                         • \cmdmthoparname{cmdName}[NEWNAME];
                            \verb|\cmdNameName[sub][sub][par]| = \mathcal{NEWNAME}^{sub}_{sub}[par]
                      488 \newcommandx{\cmdmthoparname}[2][2=]
                            {\usrmth{#1}{Name}{oparname}[#2]}
   \mthfam, ... to do!
                         \bullet \  \, \texttt{\bar{NAME}[sub][sup][Ext1]{Arg}[Ext2]} = \mathcal{NAME}^{sup}_{sub}Ext1(Arg)Ext2
                         \bullet \  \, \texttt{\baselinestable MAME} \  \, \texttt{\baseline Sub} \  \, \texttt{\baseline Ext1} \  \, \texttt{\baseline Par} \  \, \texttt{\baseline Ext2} \  \, = \  \, \mathcal{NAME} \  \, \mathcal{E}^{sup}_{sub} Ext1 [Par] Ext2
                      490 %% Style for Families
                      491 \cmdmthall{fam}\newcommand{\mthstyfam}{\mathscr}
      \AFam, ... to do!
                     \mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{I}, \mathcal{H}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{F}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Y}
                      492 \seqoflatupp{Fam}{mthfam}
      \cmdmthfam ... to do!
                         \cmdmthfam{CMDNAME};
                            \CMDNAMEFam[sub][sub][ext] = \mathscr{CMDNAMEFam}[sub][sub][ext]
                         • \cmdmthfam{cmdName}[NEWNAME];
                            \cmdNameFam[sub][sub][ext] = \mathcal{NEWNAME}_{sub}^{sub}ext
                      493 \newcommandx{\cmdmthfam}[2][2=]
                      494 {\usrmth{#1}{Fam}{fam}[#2]}
  \cmdmthargfam ... to do!
                         • \cmdmthargfam{CMDNAME};
                            • \cmdmthargfam{cmdName}[NEWNAME];
                            \verb|\cmdNameFam[sub][sub][ext1]{arg}[ext2] = \mathscr{NEWNAME}^{sub}_{sub}ext1(arg)ext2
```

```
495 \newcommandx{\cmdmthargfam}[2][2=]
                           {\usrmth{#1}{Fam}{argfam}[#2]}
\cmdmthoargfam ... to do!
                         \cmdmthoargfam{CMDNAME};
                           \CMDNAMEFam[sub][sub][arg] = \mathscr{CMDNAMEFam}[sub](arg)
                         \cmdmthoargfam{cmdFam}[NEWNAME];
                           \verb|\cmdFamFam[sub][sub][arg]| = \mathcal{NEWNAME}_{sub}^{sub}(arg)
                     497 \newcommandx{\cmdmthoargfam}[2][2=]
                          {\usrmth{#1}{Fam}{oargfam}[#2]}
 \cmdmthparfam ... to do!
                         • \cmdmthparfam{CMDNAME};
                           \verb|\CMDNAMEFam[sub][sub][ext1]{par}[ext2] = \mathscr{CMDNAMEFam}[sub][sub][ext1][par][ext2]
                         • \cmdmthparfam{cmdName}[NEWNAME];
                           499 \newcommandx{\cmdmthparfam}[2][2=]
                          {\usrmth{#1}{Fam}{parfam}[#2]}
\cmdmthoparfam ... to do!
                         • \cmdmthoparfam{CMDNAME};
                           \CMDNAMEFam[sub][sub][par] = \mathscr{CMDNAMEFam}[sub][par]
                         \cmdmthoparfam{cmdFam}[NEWNAME];
                           \label{eq:cmdFamFam} $$ \operatorname{[sub]}[\operatorname{par}] = \mathcal{NEWNAME}^{sub}_{sub}[\operatorname{par}] $$
                     501 \newcommandx{\cmdmthoparfam}[2][2=]
                           {\usrmth{#1}{Fam}{oparfam}[#2]}
  \mthcls, ... to do!
                         • \mthcls{NAME}[sub][sup][Ext] = \mathcal{NAME}_{sub}^{sup}Ext
                         • \mthargcls{NAME}[sub][sup][Ext1]{Arg}[Ext2] = \mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2
                         \bullet \ \texttt{\nAME} \ [\texttt{sub}] \ [\texttt{Ext1}] \ \{\texttt{Par}\} \ [\texttt{Ext2}] \ = \ \mathcal{NAME} \ sub \ Ext1 \ [Par] Ext2
                      503 %% Style for Classes
                     504 \cmdmthall{cls}\newcommand{\mthstycls}{\matheus}
     \ACls, ... to do!
                    \mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}
                     505 \seqoflatupp{Cls}{mthcls}
     \cmdmthcls ... to do!
                         • \cmdmthcls{CMDNAME};
                           \CMDNAMEC1s[sub][sub][ext] = \mathcal{CMDNAME}_{sub}^{sub}ext
                         • \cmdmthcls{cmdName}[NEWNAME];
                           \cmdNameCls[sub][sub][ext] = NEWNAME_{sub}^{sub}ext
                      506 \newcommandx{\cmdmthcls}[2][2=]
                     507 {\usrmth{#1}{Cls}{cls}[#2]}
 \cmdmthargcls ... to do!
                         • \cmdmthargcls{CMDNAME};
                           \CMDNAMECls[sub][sub][ext1]{arg}[ext2] = \mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2
                         • \cmdmthargcls{cmdName}[NEWNAME];
                           \label{lem:lemma:energy:ext2} $$ \operatorname{CmdNameCls[sub][sub][ext1]} = \mathcal{NEWNAME}_{sub}^{sub} ext1(arg)ext2$
                      508 \newcommandx{\cmdmthargcls}[2][2=]
                           {\usrmth{#1}{Cls}{argcls}[#2]}
\cmdmthoargcls ... to do!
                         • \cmdmthoargcls{CMDNAME};
```

\CMDNAMECls[sub][sub] [arg] =  $\mathcal{CMDNAME}_{sub}^{sub}(arg)$ 

```
\cmdmthoargcls{cmdCls}[NEWNAME];
                                                   \verb|\cmdClsCls[sub][sub][arg]| = NEWNAME_{sub}^{sub}(arg)
                                         510 \newcommandx{\cmdmthoargcls}[2][2=]
                                                   {\usrmth{#1}{Cls}{oargcls}[#2]}
  \cmdmthparcls ... to do!
                                               \cmdmthparcls{CMDNAME};
                                                   \verb|\CMDNAMECls[sub][sub][ext1]{par}[ext2] = \verb|\CMDNAME| sub| ext1| par| ext2|
                                               • \cmdmthparcls{cmdName}[NEWNAME];
                                                   \verb|\cmdNameCls[sub][sub][ext1]{par}[ext2] = NEWNAME_{sub}^{sub}ext1[par]ext2|
                                         512 \newcommandx{\cmdmthparcls}[2][2=]
                                                 {\usrmth{#1}{Cls}{parcls}[#2]}
\cmdmthoparcls ... to do!
                                              • \cmdmthoparcls{CMDNAME};
                                                   \verb|\CMDNAMECls[sub][sub][par]| = \verb|\CMDNAME|_{sub}^{sub}[par]|
                                               \cmdmthoparcls{cmdCls}[NEWNAME];
                                                   \cmdClsCls[sub][sub][par] = \mathcal{NEWNAME}_{sub}^{sub}[par]
                                         514 \newcommandx{\cmdmthoparcls}[2][2=]
                                         515 {\usrmth{#1}{Cls}{oparcls}[#2]}
    \mthsig, ... to do!
                                              • \mthsig{Name} [sub] [sup] [Ext] = \mathcal{N}_{sub}^{sup}Ext
                                              \bullet \ \texttt{\ \ } \texttt{[Sub] [Sup] [Ext1] \{Arg\} [Ext2]} = \mathcal{N}\!\mathit{ame}^{sup}_{sub} Ext1(Arg) Ext2
                                              \bullet \ \texttt{\t Name} \ \texttt{[Sub]} \ \texttt{[Sup]} \ \texttt{\t [Ext1]} \ \texttt{\t Par} \ \texttt{\t [Ext2]} \ = \ \textit{\textbf{\textit{Name}}} \ sub \ \texttt{\t Ext1} \ \texttt{\t [Par]} \ \texttt{\t Ext2}
                                         516 %% Style for Signatures
                                         517 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}
         \aSig, ... to do!
                                      a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, \chi, y, z
                                       \mathcal{A},~\mathcal{B},~\mathcal{C},~\mathcal{D},~\mathcal{E},~\mathcal{F},~\mathcal{G},~\mathcal{H},~I,~\mathcal{I},~\mathcal{K},~\mathcal{L},~\mathcal{M},~\mathcal{N},~\mathcal{O},~\mathcal{P},~Q,~\mathcal{R},~\mathcal{S},~\mathcal{T},~\mathcal{U},~\mathcal{V},~\mathcal{W},~X,~\mathcal{Y},~Z
                                      \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, o, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                                         518 \seqoflatlet{Sig}{mthsig}\seqofgrklow{Sig}{mthsig}
         \cmdmthsig ... to do!
                                              • \cmdmthsig{cmdName};
                                                   \colon d \cmdNameSig[sub][sub][ext] = cmdName_{sub}^{sub}ext
                                               • \cmdmthsig{cmdName}[NewName];
                                                   \verb|\cmdNameSig[sub][sub][ext]| = \textit{NewName}_{sub}^{sub} ext|
                                         519 \newcommandx{\cmdmthsig}[2][2=]
                                         520 {\usrmth{#1}{Sig}{sig}[#2]}
  \cmdmthargsig ... to do!
                                               • \cmdmthargsig{cmdName};
                                                   \verb|\cmdNameSig[sub][sub][ext1]{arg}[ext2] = cmd Name_{sub}^{sub} ext1(arg) ext2
                                               • \cmdmthargsig{cmdName}[NewName];
                                                   \cmdNameSig[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                         521 \newcommandx{\cmdmthargsig}[2][2=]
                                        522 {\usrmth{#1}{Sig}{argsig}[#2]}
\cmdmthoargsig ... to do!
                                              • \cmdmthoargsig{cmdName};
                                                   \colon 
                                               • \cmdmthoargsig{cmdSig}[NewName];
                                                   \colored{cmdSigSig[sub][sub][arg]} = \mathcal{N}ew\mathcal{N}ame_{sub}^{sub}(arg)
                                         523 \newcommandx{\cmdmthoargsig}[2][2=]
                                         524 {\usrmth{#1}{Sig}{oargsig}[#2]}
```

```
\cmdmthparsig ... to do!
                                                  • \cmdmthparsig{cmdName};
                                                       \verb|\cmdNameSig[sub][sub][ext1]{par}[ext2] = \textit{cmdName}_{sub}^{sub}ext1[par]ext2
                                                  • \cmdmthparsig{cmdName}[NewName];
                                                      \verb|\cmdNameSig[sub][sub][ext1]{par}[ext2] = \textit{NewName}^{sub}_{sub}ext1[par]ext2
                                            525 \newcommandx{\cmdmthparsig}[2][2=]
                                                      {\usrmth{#1}{Sig}{parsig}[#2]}
\cmdmthoparsig ... to do!
                                                 • \cmdmthoparsig{cmdName};
                                                      \verb|\cmdNameSig[sub][sub][par]| = cmdName_{sub}^{sub}[par]|
                                                  • \cmdmthoparsig{cmdSig}[NewName];
                                                      \color{location} \col
                                            527 \newcommandx{\cmdmthoparsig}[2][2=]
                                                      {\usrmth{#1}{Sig}{oparsig}[#2]}
     \mthstr, ... to do!
                                                  • \mthstr{Name} [sub] [sup] [Ext] = \mathfrak{Name}_{sub}^{sup} Ext
                                                  • \mthargstr{Name}[sub][sup][Ext1]{Arg}[Ext2] = \mathfrak{Name}_{sub}^{sup}Ext1(Arg)Ext2
                                                  \bullet \ \texttt{\ \ } \texttt{[Sub] [Sup] [Ext1] \{Par\} [Ext2]} = \mathfrak{Name}^{sup}_{sub} Ext1[Par]Ext2
                                           529 %% Style for Structures
                                           530 \mbox{ \cmdmthall{str}\newcommand{\mbox{\mbox{\cmthstystr}}{\mbox{\cmdmthall{str}}}}
          \aStr, ... to do!
                                         \mathfrak{a}, \mathfrak{b}, \mathfrak{c}, \mathfrak{d}, \mathfrak{e}, \mathfrak{f}, \mathfrak{g}, \mathfrak{h}, \mathfrak{i}, \mathfrak{j}, \mathfrak{k}, \mathfrak{l}, \mathfrak{m}, \mathfrak{n}, \mathfrak{o}, \mathfrak{p}, \mathfrak{q}, \mathfrak{r}, \mathfrak{s}, \mathfrak{t}, \mathfrak{u}, \mathfrak{v}, \mathfrak{w}, \mathfrak{r}, \mathfrak{h}, \mathfrak{z}
                                         \mathfrak{A}, \mathfrak{B}, \mathfrak{C}, \mathfrak{D}, \mathfrak{E}, \mathfrak{F}, \mathfrak{G}, \mathfrak{H}, \mathfrak{I}, \mathfrak{I}, \mathfrak{K}, \mathfrak{L}, \mathfrak{M}, \mathfrak{N}, \mathfrak{D}, \mathfrak{P}, \mathfrak{Q}, \mathfrak{R}, \mathfrak{S}, \mathfrak{T}, \mathfrak{U}, \mathfrak{W}, \mathfrak{W}, \mathfrak{X}, \mathfrak{Y}, \mathfrak{Z}
                                         \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, \mathfrak{o}, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                                           531 \seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}
          \cmdmthstr ... to do!
                                                  \cmdmthstr{cmdName};
                                                      \verb|\cmdNameStr[sub][sub][ext]| = \mathfrak{cmdName}_{sub}^{sub} ext
                                                  • \cmdmthstr{cmdName} [NewName];
                                                      \c MameStr[sub][sub][ext] = \mathfrak{NewName}_{sub}^{sub}ext
                                            532 \newcommandx{\cmdmthstr}[2][2=]
                                           533 {\usrmth{#1}{Str}{str}[#2]}
  \cmdmthargstr ... to do!
                                                  \cmdmthargstr{cmdName};
                                                      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = cmdMame_{sub}^{sub}ext1(arg)ext2
                                                  • \cmdmthargstr{cmdName}[NewName];
                                                      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = \mathfrak{NewName}_{sub}^{sub}ext1(arg)ext2
                                           534 \mbox{ } \mbox{cmdmthargstr} [2] [2=]
                                                     {\usrmth{#1}{Str}{argstr}[#2]}
\cmdmthoargstr ... to do!
                                                  • \cmdmthoargstr{cmdName};
                                                       \cmdNameStr[sub] [sub] [arg] = cmdMame_{sub}^{sub}(arg)
                                                  • \cmdmthoargstr{cmdStr}[NewName];
                                                      \colon dStrStr[sub][sub][arg] = \mathfrak{NewName}^{sub}_{sub}(arg)
                                            536 \newcommandx{\cmdmthoargstr}[2][2=]
                                                      {\usrmth{#1}{Str}{oargstr}[#2]}
  \cmdmthparstr ... to do!
                                                  • \cmdmthparstr{cmdName};
                                                      \verb|\cmdNameStr[sub][sub][ext1]{par}[ext2] = \verb|\cmdName$| subert1[par] ext2|
```

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• \cmdmthparstr{cmdName} [NewName];
                                                \verb|\cmdNameStr[sub][sub][ext1]{par}[ext2] = \mathfrak{NewName}_{sub}^{sub}ext1[par]ext2
                                      538 \newcommandx{\cmdmthparstr}[2][2=]
                                               {\usrmth{#1}{Str}{parstr}[#2]}
\cmdmthoparstr ... to do!
                                           • \cmdmthoparstr{cmdName};
                                                \verb|\cmdNameStr[sub][sub][par]| = \mathfrak{cmdMame}_{sub}^{sub}[par]|
                                           • \cmdmthoparstr{cmdStr}[NewName];
                                               \color{local} 
                                      540 \newcommandx{\cmdmthoparstr}[2][2=]
                                               {\usrmth{#1}{Str}{oparstr}[#2]}
    \mthset, ... to do!
                                           • \mathbb{N} [sub] [sup] [Ext] = \mathbb{N} ame \mathbb{N} \mathbb{N}
                                           • \mthargset{Name}[sub][sup][Ext1]{Arg}[Ext2] = Name_{sub}^{sup}Ext1(Arg)Ext2
                                           \bullet \  \, \texttt{\bar{Name}[sub][sup][Ext1][Par][Ext2]} = \mathrm{Name}_{sub}^{sup} Ext1[Par]Ext2
                                      542 %% Style for Sets
                                      543 \cmdmthall{set}\newcommand{\mthstyset}{\mathrm}
         \aSet, ... to do!
                                    a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                                    A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                                    \alpha,\,\beta,\,\gamma,\,\delta,\,\epsilon,\,\varepsilon,\,\zeta,\,\eta,\,\theta,\,\vartheta,\,\iota,\,\kappa,\,\varkappa,\,\lambda,\,\mu,\,\nu,\,\xi,\,o,\,\pi,\,\varpi,\,\rho,\,\varrho,\,\sigma,\,\varsigma,\,\tau,\,\upsilon,\,\phi,\,\varphi,\,\chi,\,\psi,\,\omega
                                    A,\,B,\,\Gamma,\,\Delta,\,E,\,E,\,Z,\,H,\,\Theta,\,\varTheta,\,I,\,K,\,K,\,\Lambda,\,M,\,N,\,\Xi,\,O,\,\Pi,\,\varPi,\,P,\,P,\,\Sigma,\,\varSigma,\,T,\,\Upsilon,\,\Phi,\,\varPhi,\,X,\,\Psi,\,\Omega
                                     544 \seqoflet{Set}{mthset}
         \cmdmthset ... to do!
                                           • \cmdmthset{cmdName};
                                               \colon dNameSet[sub][sub][ext] = cmdName_{sub}^{sub}ext
                                            • \cmdmthset{cmdName}[NewName];
                                               \colon = NewName_{sub}^{sub} = NewName_{sub}^{sub} = xt
                                      545 \newcommandx{\cmdmthset}[2][2=]
                                              {\usrmth{#1}{Set}{set}[#2]}
  \cmdmthargset ... to do!
                                           • \cmdmthargset{cmdName};
                                                \colored Name Set [sub] [sub] [ext1] {arg} [ext2] = cmd Name {sub \atop sub} ext1 (arg) ext2
                                            • \cmdmthargset{cmdName}[NewName];
                                                \colon = NewName (sub) [sub] [ext1] {arg} [ext2] = NewName (sub) ext1 (arg) ext2
                                      547 \newcommandx{\cmdmthargset}[2][2=]
                                               {\usrmth{#1}{Set}{argset}[#2]}
\cmdmthoargset ... to do!
                                           • \cmdmthoargset{cmdName};
                                               \colon = cmdNameSet[sub][sub][arg] = cmdName_{sub}^{sub}(arg)
                                            • \cmdmthoargset{cmdSet}[NewName];
                                               \verb|\cmdSetSet[sub][sub][arg]| = NewName_{sub}^{sub}(arg)
                                      549 \newcommandx{\cmdmthoargset}[2][2=]
                                              {\usrmth{#1}{Set}{oargset}[#2]}
  \cmdmthparset ... to do!
                                           • \cmdmthparset{cmdName};
                                               \verb|\cmdNameSet[sub][sub][ext1]{par}[ext2] = cmdName_{sub}^{sub}ext1[par]ext2|
                                            • \cmdmthparset{cmdName}[NewName];
                                               \cmdNameSet[sub][sub][ext1]{par}[ext2] = NewName_{sub}^{sub}ext1[par]ext2
                                      551 \newcommandx{\cmdmthparset}[2][2=]
                                      552 {\usrmth{#1}{Set}{parset}[#2]}
```

```
\cmdmthoparset ... to do!
                        \cmdmthoparset{cmdName};
                          \colon dNameSet[sub][sub][par] = cmdName_{sub}^{sub}[par]
                        • \cmdmthoparset{cmdSet}[NewName];
                          \colon dSetSet[sub][sub][par] = NewName_{sub}^{sub}[par]
                     553 \newcommandx{\cmdmthoparset}[2][2=]
                         {\usrmth{#1}{Set}{oparset}[#2]}
 \cmdmthsetext ... to do!
                    555 \newcommandx{\cmdmthsetext}[3][2=, 3=]
                    556 {\cmdmthset{#1}[#2]\caselower[q]{#1}%
                          \usrmthlet{\thestring}{Sym}{sym}
                            [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}}{\thestring}}]%
                         \usrmthlet{\thestring}{Elm}{elm}
                    560
                             [\defval{#3}{\defval{\mpchk{#2}}}] 
  \mthrel, ... to do!
                       • \mthrel{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
                       \bullet \  \, \texttt{\bar{Name}[Sub][Sub][Ext1][Arg][Ext2]} = Name_{sub}^{sup}Ext1(Arg)Ext2
                        • \mthparrel{Name}[sub][sup][Ext1]{Par}[Ext2] = Name_{sub}^{sup}Ext1[Par]Ext2
                    561 %% Style for Relations
                    562 \mbox{ \label{rel}\newcommand{\mbstyrel}{\mbstyrel}} \
    \aRel, ... to do!
                   a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                   A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, T, U, V, W, X, Y, Z
                   \alpha,\,\beta,\,\gamma,\,\delta,\,\epsilon,\,\varepsilon,\,\zeta,\,\eta,\,\theta,\,\vartheta,\,\iota,\,\kappa,\,\varkappa,\,\lambda,\,\mu,\,\nu,\,\xi,\,o,\,\pi,\,\varpi,\,\rho,\,\varrho,\,\sigma,\,\varsigma,\,\tau,\,\upsilon,\,\phi,\,\varphi,\,\chi,\,\psi,\,\omega
                   A,\,B,\,\Gamma,\,\Delta,\,E,\,E,\,Z,\,H,\,\Theta,\,\Theta,\,I,\,K,\,K,\,\Lambda,\,M,\,N,\,\Xi,\,O,\,\Pi,\,\Pi,\,P,\,P,\,\varSigma,\,\Sigma,\,T,\,\Upsilon,\,\varPhi,\,\varPhi,\,X,\,\Psi,\,\Omega
                    563 \seqoflet{Rel}{mthrel}
    \cmdmthrel ... to do!
                       \cmdmthrel{cmdName};
                         \verb|\cmdNameRel[sub][sub][ext]| = cmdName_{sub}^{sub}ext
                        • \cmdmthrel{cmdName}[NewName];
                         \verb|\cmdNameRel[sub][sub][ext]| = NewName_{sub}^{sub}ext
                    564 \newcommandx{\cmdmthrel}[2][2=]
                    565 {\usrmth{#1}{Rel}{rel}[#2]}
 \verb|\cmdmthargrel| ... to do!
                        \cmdmthargrel{cmdName};
                         \verb|\cmdNameRel[sub][sub][ext1]{arg}[ext2] = cmdName_{sub}^{sub}ext1(arg)ext2
                        • \cmdmthargrel{cmdName}[NewName];
                         \cmdNameRel[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                    566 \newcommandx{\cmdmthargrel}[2][2=]
                    567 {\usrmth{#1}{Rel}{argrel}[#2]}
\cmdmthoargrel ... to do!
                        \cmdmthoargrel{cmdName};
                         \verb|\cmdNameRel[sub][sub][arg]| = cmdName_{sub}^{sub}(arg)
                        • \cmdmthoargrel{cmdRel}[NewName];
                          \colon dRelRel[sub][sub][arg] = NewName_{sub}^{sub}(arg)
                     568 \newcommandx{\cmdmthoargrel}[2][2=]
                    569 {\usrmth{#1}{Rel}{oargrel}[#2]}
 \cmdmthparrel ... to do!
                        \cmdmthparrel{cmdName};
                         \verb|\cmdNameRel[sub][sub][ext1][par][ext2]| = cmdName_{sub}^{sub}ext1[par]ext2|
```

```
• \cmdmthparrel{cmdName}[NewName];
                                                  \verb|\cmdNameRel[sub][sub][ext1]{par}[ext2] = NewName_{sub}^{sub}ext1[par]ext2]|
                                        570 \newcommandx{\cmdmthparrel}[2][2=]
                                                  {\usrmth{#1}{Rel}{parrel}[#2]}
\cmdmthoparrel ... to do!
                                              • \cmdmthoparrel{cmdName};
                                                  \verb|\cmdNameRel[sub][sub][par]| = cmdName_{sub}^{sub}[par]|
                                              • \cmdmthoparrel{cmdRel}[NewName];
                                                  \colone{local} \col
                                        572 \newcommandx{\cmdmthoparrel}[2][2=]
                                                 {\usrmth{#1}{Rel}{oparrel}[#2]}
    \mthfun, ... to do!
                                              • \mathbb{N} [sub] [sup] [Ext] = \mathbb{N} = \mathbb{N}
                                              \bullet \  \, \texttt{\bar{Name}[sub][sup][Ext1][Arg][Ext2]} = \mathsf{\bar{Name}}_{sub}^{sup} Ext1(Arg) Ext2
                                              \bullet \  \, \texttt{\bar{Name}[sub][sup][Ext1]{Par}[Ext2]} = \mathsf{Name}^{sup}_{sub}Ext1[Par]Ext2
                                        574 %% Style for Functions
                                        575 \mbox{ \mbox{\mbox{mathsf}} \mbox{\mbox{\mbox{mathsf}}} \
         \arrowvertaFun, ... to do!
                                     a,\,b,\,c,\,d,\,e,\,f,\,g,\,h,\,i,\,j,\,k,\,l,\,m,\,n,\,o,\,p,\,q,\,r,\,s,\,t,\,u,\,v,\,w,\,x,\,y,\,z
                                     A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                                      \alpha,\,\beta,\,\gamma,\,\delta,\,\epsilon,\,\varepsilon,\,\zeta,\,\eta,\,\theta,\,\vartheta,\,\iota,\,\kappa,\,\varkappa,\,\lambda,\,\mu,\,\nu,\,\xi,\,\mathsf{o},\,\pi,\,\varpi,\,\rho,\,\varrho,\,\sigma,\,\varsigma,\,\tau,\,\upsilon,\,\phi,\,\varphi,\,\chi,\,\psi,\,\omega
                                      \mathsf{A},\,\mathsf{B},\,\mathsf{\Gamma},\,\mathsf{\Delta},\,\mathsf{E},\,\mathsf{E},\,\mathsf{Z},\,\mathsf{H},\,\Theta,\,\varTheta,\,\mathsf{I},\,\mathsf{K},\,\mathsf{K},\,\mathsf{K},\,\mathsf{\Lambda},\,\mathsf{M},\,\mathsf{N},\,\Xi,\,\mathsf{O},\,\mathsf{\Pi},\,\varPi,\,\mathsf{P},\,\mathsf{P},\,\mathsf{\Sigma},\,\varSigma,\,\mathsf{T},\,\Upsilon,\,\Phi,\,\varPhi,\,\mathsf{X},\,\Psi,\,\Omega
                                       576 \seqoflet{Fun}{mthfun}
         \cmdmthfun ... to do!
                                              • \cmdmthfun{cmdName};
                                                  \cmdNameFun[sub][sub][ext] = cmdName_{sub}^{sub}ext
                                              • \cmdmthfun{cmdName}[NewName];
                                                  \colon = NewName_{sub}^{sub} = NewName_{sub}^{sub} = t
                                        577 \newcommandx{\cmdmthfun}[2][2=]
                                        578 {\usrmth{#1}{Fun}{fun}[#2]}
  \cmdmthargfun ... to do!
                                              • \cmdmthargfun{cmdName};
                                                  \cmdNameFun[sub][sub][ext1]{arg}[ext2] = cmdName_{sub}^{sub}ext1(arg)ext2
                                              • \cmdmthargfun{cmdName}[NewName];
                                                  \cmdNameFun[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                        579 \newcommandx{\cmdmthargfun}[2][2=]
                                                  {\usrmth{#1}{Fun}{argfun}[#2]}
\cmdmthoargfun ... to do!
                                              • \cmdmthoargfun{cmdName};
                                                  \colon = cmdNameFun[sub][sub][arg] = cmdName_{sub}^{sub}(arg)
                                              • \cmdmthoargfun{cmdFun} [NewName];
                                                  \verb|\cmdFunFun[sub][sub][arg]| = \verb|\NewName|_{sub}^{sub}(arg)
                                        581 \newcommandx{\cmdmthoargfun}[2][2=]
                                       582 {\usrmth{#1}{Fun}{oargfun}[#2]}
  \cmdmthparfun ... to do!
                                              • \cmdmthparfun{cmdName};
                                                  \verb|\cmdNameFun[sub][sub][ext1]{par}[ext2] = \verb|\cmdName$| sub| ext1[par]ext2|
                                              • \cmdmthparfun{cmdName}[NewName];
                                                  \cmdNameFun[sub][sub][ext1]{par}[ext2] = NewName_{sub}^{sub}ext1[par]ext2
                                        583 \newcommandx{\cmdmthparfun}[2][2=]
                                        584 {\usrmth{#1}{Fun}{parfun}[#2]}
```

```
\cmdmthoparfun ... to do!
                                                                                    • \cmdmthoparfun{cmdName};
                                                                                             \cmdNameFun[sub][sub][par] = cmdName_{sub}^{sub}[par]
                                                                                     • \cmdmthoparfun{cmdFun} [NewName];
                                                                                             \verb|\cmdFunFun[sub][sub][par]| = \verb|\NewName|_{sub}^{sub}[par]|
                                                                          585 \newcommandx{\cmdmthoparfun}[2][2=]
                                                                                            {\usrmth{#1}{Fun}{oparfun}[#2]}
        \mthsym, ... to do!
                                                                                    • \mthsym{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
                                                                                    \bullet \  \, \texttt{\bar{Name}[sub][sup][Ext1]\{Arg\}[Ext2]} = \mathtt{Name}^{sup}_{sub}Ext1(Arg)Ext2
                                                                                     • \mathbb{E}_{sub}[Sub][Sup][Ext1][Par][Ext2] = \mathbb{E}_{sub}[Ext1][Par][Ext2]
                                                                          587 %% Style for Symbols
                                                                          588 \mbox{\mbox{\mbox{$\sim$}}{\mathbf{\mbox{$\sim$}}}{\mathbf{\mbox{$\sim$}}}{\mathbf{\mbox{$\sim$}}}
                 \aggreen \
                                                                      a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                                                                      A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                                                                      \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, o, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                                                                      A, B, \Gamma, \Delta, E, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, T, \Phi, \Phi, X, \Psi, \Omega
                                                                          589 \seqoflet{Sym}{mthsym}
                 \cmdmthsym ... to do!
                                                                                    \cmdmthsym{cmdName};
                                                                                            \verb|\cmdNameSym[sub][sub][ext]| = \verb|\cmdName|_{sub}^{sub} ext|
                                                                                     • \cmdmthsym{cmdName}[NewName];
                                                                                            \verb|\cmdNameSym[sub][sub][ext]| = \verb|\NewName|_{sub}^{sub} ext|
                                                                          590 \newcommandx{\cmdmthsym}[2][2=]
                                                                                         {\usrmth{#1}{Sym}{sym}[#2]}
    \cmdmthargsym ... to do!
                                                                                     \cmdmthargsym{cmdName};
                                                                                            \verb|\cmdNameSym[sub][sub][ext1]{arg}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1(arg)ext2
                                                                                     • \cmdmthargsym{cmdName}[NewName];
                                                                                            \cmdNameSym[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                                                          592 \newcommandx{\cmdmthargsym}[2][2=]
                                                                          593 {\usrmth{#1}{Sym}{argsym}[#2]}
\cmdmthoargsym ... to do!
                                                                                     \cmdmthoargsym{cmdName};
                                                                                            \colon 
                                                                                     • \cmdmthoargsym{cmdSym}[NewName];
                                                                                             \colon 
                                                                          594 \newcommandx{\cmdmthoargsym}[2][2=]
                                                                                          {\usrmth{#1}{Sym}{oargsym}[#2]}
    \cmdmthparsym ... to do!
                                                                                    \cmdmthparsym{cmdName};
                                                                                              \c MameSym[sub][sub][ext1]{par}[ext2] = cmdName_{sub}^{sub}ext1[par]ext2
                                                                                     • \cmdmthparsym{cmdName}[NewName];
                                                                                            \verb|\cmdNameSym[sub][sub][ext1]{par}[ext2] = \verb|\NewName|_{sub}^{sub}ext1[par]ext2|
                                                                          596 \newcommandx{\cmdmthparsym}[2][2=]
                                                                                                {\usrmth{#1}{Sym}{parsym}[#2]}
\cmdmthoparsym ... to do!
                                                                                    • \cmdmthoparsym{cmdName};
                                                                                             \cmdNameSym[sub][sub][par] = cmdName_{sub}^{sub}[par]
```

```
\cmdmthoparsym{cmdSym}[NewName];
                           \verb|\cmdSymSym[sub][sub][par]| = \verb|\NewName|_{sub}^{sub}[par]|
                      598 \newcommandx{\cmdmthoparsym}[2][2=]
                           {\usrmth{#1}{Sym}{oparsym}[#2]}
  \mthelm, ... to do!
                         • \mthelm{Name} [sub] [sup] [Ext] = Name_{sub}^{sup}Ext
                         • \mthargelm{Name}[sub][sup][Ext1]{Arg}[Ext2] = Name_{sub}^{sup}Ext1(Arg)Ext2
                         • \mathbb{E}[Sub][Sub][Sub][Ext1][Par][Ext2] = Name_{sub}^{sup}Ext1[Par]Ext2
                      600 %% Style for Elements
                      601 \mbox{ \cmdmthall{elm}\newcommand{\mbox{\mbox{mthstyelm}}{\mbox{\mbox{\cmdmthall}}}}
     \all lm, ... to do!
                    a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                     A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                     \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, o, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                     A,\,B,\,\Gamma,\,\Delta,\,E,\,E,\,Z,\,H,\,\Theta,\,\Theta,\,I,\,K,\,K,\,\Lambda,\,M,\,N,\,\Xi,\,O,\,\Pi,\,\Pi,\,P,\,P,\,\Sigma,\,\Sigma,\,T,\,\Upsilon,\,\Phi,\,\Phi,\,X,\,\Psi,\,\Omega
                      602 \seqoflet{Elm}{mthelm}
     \cmdmthelm ... to do!
                         \cmdmthelm{cmdName};
                           \verb|\cmdNameElm[sub][sub][ext]| = cmdName_{sub}^{sub}ext
                         • \cmdmthelm{cmdName}[NewName];
                           \verb|\cmdNameElm[sub][sub][ext]| = NewName_{sub}^{sub}ext
                      603 \newcommandx{\cmdmthelm}[2][2=]
                      604 {\usrmth{#1}{Elm}{elm}[#2]}
 \cmdmthargelm ... to do!
                         • \cmdmthargelm{cmdName};
                           \cmdNameElm[sub][sub][ext1]{arg}[ext2] = cmdName^{sub}_{sub}ext1(arg)ext2
                         • \cmdmthargelm{cmdName}[NewName];
                           \verb|\cmdNameElm[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                      605 \newcommandx{\cmdmthargelm}[2][2=]
                           {\usrmth{#1}{Elm}{argelm}[#2]}
\cmdmthoargelm ... to do!
                         • \cmdmthoargelm{cmdName};
                           \colon = cmdNameElm[sub][sub][arg] = cmdName_{sub}^{sub}(arg)
                         • \cmdmthoargelm{cmdElm}[NewName];
                           \cmbox{cmdElmElm[sub] [sub] [arg]} = NewName_{sub}^{sub}(arg)
                      607 \newcommandx{\cmdmthoargelm}[2][2=]
                           {\usrmth{#1}{Elm}{oargelm}[#2]}
 \cmdmthparelm ... to do!
                         • \cmdmthparelm{cmdName};
                           \label{local_cond_norm_sub} $$ \operatorname{Lim}[\operatorname{sub}][\operatorname{sub}][\operatorname{ext1}][\operatorname{par}] = cmdName_{\operatorname{sub}}^{\operatorname{sub}} ext1[par]ext2 $$
                         • \cmdmthparelm{cmdName}[NewName];
                           \verb|\cmdNameElm[sub][sub][ext1]{par}[ext2] = NewName_{sub}^{sub}ext1[par]ext2|
                      609 \newcommandx{\cmdmthparelm}[2][2=]
                      610 {\usrmth{#1}{Elm}{parelm}[#2]}
\cmdmthoparelm ... to do!
                         • \cmdmthoparelm{cmdName};
                           \verb|\cmdNameElm[sub][par]| = cmdName_{sub}^{sub}[par]|
                         • \cmdmthoparelm{cmdElm}[NewName];
                           \colonerge{cmdElmElm[sub][sub][par]} = NewName_{sub}^{sub}[par]
                      611 \newcommandx{\cmdmthoparelm}[2][2=]
                      612 {\usrmth{#1}{Elm}{oparelm}[#2]}
```

```
\cmdmthsymelm ... to do!
                                                                    \cmdmthsymelm{cmdName};
                                                                          \colonerge{cmdNameSym[sub][sub][ext]} = cmdName_{sub}^{sub}ext
                                                                          {\tt \cmdNameElm[sub][sub][ext]} = cmdName^{sub}_{sub}ext
                                                                    • \cmdmthsymelm{cmdName}[NewName];
                                                                          \verb|\cmdNameSym[sub][sub][ext]| = \verb|\NewName|_{sub}^{sub} ext|
                                                                         \colon dNameElm[sub][sub][ext] = NewName^{sub}_{sub}ext
                                                            614 \newcommandx{\cmdmthsymelm}[2][2=]
                                                                            {\cmdmthsym{#1}[#2]%
                                                            616
                                                                            \cmdmthelm{#1}[#2]}
  \c cmdmthargsymelm ... to do!
                                                                   • \cmdmthargsymelm{cmdName};
                                                                          \verb|\cmdNameSym[sub][sub][ext1]{arg}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1(arg)ext2|
                                                                          \verb|\cmdNameElm[sub][sub][ext1]{arg}[ext2] = cmdName_{sub}^{sub}ext1(arg)ext2
                                                                    • \cmdmthargsymelm{cmdName}[NewName];
                                                                          \verb|\cmdNameSym[sub][sub][ext1]{arg}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1(arg)ext2
                                                                          \verb|\cmdNameElm[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                                            617 \newcommandx{\cmdmthargsymelm}[2][2=]
                                                                            {\cmdmthargsym{#1}[#2]%
                                                                            \cmdmthargelm{#1}[#2]}
                                                            619
\cmdmthoargsymelm ... to do!
                                                                    \cmdmthoargsymelm{cmdName};
                                                                          \colonerge{cmdNameElm[sub][sub][arg]} = cmdName^{sub}_{sub}(arg)
                                                                    • \cmdmthoargsymelm{cmdName}[NewName];
                                                                          \verb|\cmdNameSym[sub][sub][arg]| = \verb|\NewNames|^{sub}(arg)
                                                                          \colone{locality} \colone{lo
                                                            620 \mbox{ } \mbox{cmdmthoargsymelm} \mbox{ [2] [2=]}
                                                                            {\cmdmthoargsym{#1}[#2]%
                                                                            \cmdmthoargelm{#1}[#2]}
                                                            622
  \cmdmthparsymelm ... to do!
                                                                    \cmdmthparsymelm{cmdName};
                                                                          \verb|\cmdNameSym[sub][sub][ext1]{par}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1[par]ext2|
                                                                          \verb|\cmdNameElm[sub][sub][ext1]{par}[ext2] = cmdName_{sub}^{sub}ext1[par]ext2|
                                                                    • \cmdmthparsymelm{cmdName}[NewName];
                                                                          \verb|\cmdNameSym[sub][sub][ext1]{par}[ext2] = \verb|\cmdNames|^{sub}_{sub}ext1[par]ext2|
                                                                          \colone{lm} [sub] [sub] [ext1] [par] [ext2] = NewName_{sub}^{sub} ext1[par] ext2
                                                            623 \newcommandx{\cmdmthparsymelm}[2][2=]
                                                                            {\cmdmthparsym{#1}[#2]%
                                                            625
                                                                            \cmdmthparelm{#1}[#2]}
                                                       ... to do!
\cmdmthoparsymelm
                                                                    \cmdmthoparsymelm{cmdName};
                                                                          \verb|\cmdNameSym[sub][sub][par]| = \verb|\cmdName|^{sub}_{sub}[par]|
                                                                          \colone{local} \col
                                                                    • \cmdmthoparsymelm{cmdName}[NewName];
                                                                          \verb|\cmdNameSym[sub][sub][par]| = \verb|\NewName|_{sub}^{sub}[par]|
                                                                          626 \newcommandx{\cmdmthoparsymelm}[2][2=]
                                                                            {\cmdmthoparsym{#1}[#2]%
                                                                            \cmdmthoparelm{#1}[#2]}
                                                            \mthluop, ... to do!
```

```
• \mthluop{\oplus}[sub][sup][Ext] = \bigoplus_{sub}^{sup} Ext
                          • \mthlbop{\oplus}[sub][sup][Ext] = \bigoplus_{sub}^{sup} Ext
                       630 %% Style for \LaTex Operators
                       631 \mbox{ \cmdmth{luop}\newcommand{\mbstyluop}[1]{\textstyle\mathop{#1}}}
                      632 \cmdmth{lbop}\newcommand{\mthstylbop}[1]{\textstyle\mathbin{#1}}
\cmdmthluop, ... to do!
                         • \cmdmthluop{cmdName};
                           \verb|\cmdNameUOp[sub][sub][ext]| = cmdName_{sub}^{sub} ext|
                          • \cmdmthluop{cmdName}[\oplus];
                           \verb|\cmdNameUOp[sub][sub][ext]| = \oplus_{sub}^{sub} ext
                          \cmdmthlbop{cmdName};
                            \cmdNameBOp[sub][sub][ext] = cmdName_{sub}^{sub}ext
                          • \cmdmthlbop{cmdName}[\oplus];
                           \colon = 0 [sub] [sub] [ext] = \oplus_{sub}^{sub} ext
                       633 \newcommandx{\cmdmthluop}[2][2=]
                       634 {\usrmth{#1}{UOp}{luop}[#2]}
                       635 \newcommandx{\cmdmthlbop}[2][2=]
                           {\usrmth{#1}{BOp}{lbop}[#2]}
         \mthlrel ... to do!
                         • \mthlrel{\preceq}[sub][sup][Ext] = \leq_{sub}^{sup} Ext
                      637 %% Style for \LaTex Relations
                      638 \cmdmth{lrel}\newcommand{\mthstylrel}{\mathrel}
      \cmdmthlrel \dots to \operatorname{do}!
                          • \cmdmthlrel{cmdName};
                            \cmdNameRel[sub][sub][ext] = cmdName_{sub}^{sub} ext
                         • \cmdmthlrel{cmdName}[\preceq];
                            \verb|\cmdNameRel[sub][sub][ext]| = \preceq_{sub}^{sub} ext
                       639 \newcommandx{\cmdmthlrel}[2][2=]
                           {\usrmth{#1}{Rel}{lrel}[#2]}
                      \mthsnt, ... to do!
                         • \mathbb{N} [sub] [sup] [Ext] = \mathbb{N} = \mathbb{N}
                          \bullet \  \, \texttt{\bar{Name}[sub][sup][Ext1]\{Arg\}[Ext2]} = \mathsf{Name}^{sup}_{sub}Ext1(Arg)Ext2
                          • \mathbb{E}_{sub}[Sub][Sub][Ext1][Par][Ext2] = \mathbb{E}_{sub}[Ext1][Par][Ext2]
                      642 %% Style for Sentences
                      643 \mbox{ \mbox{$\sim$}}{\mbox{$\sim$}}{\mbox{$\sim$}}
       \aSnt, ... to do!
                     a,\,b,\,c,\,d,\,e,\,f,\,g,\,h,\,i,\,j,\,k,\,l,\,m,\,n,\,o,\,p,\,q,\,r,\,s,\,t,\,u,\,v,\,w,\,x,\,y,\,z
                     A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                     \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, o, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                     A, B, \Gamma, \Delta, E, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, \Upsilon, \Phi, \Phi, X, \Psi, \Omega
                      644 \seqoflet{Snt}{mthsnt}
       \cmdmthsnt ... to do!
                         • \cmdmthsnt{cmdName};
                           • \cmdmthsnt{cmdName}[NewName];
                           \colon dNameSnt[sub][sub][ext] = NewName_{sub}^{sub}ext
                      645 \newcommandx{\cmdmthsnt}[2][2=]
                      646 {\usrmth{#1}{Snt}{snt}[#2]}
   \c cmdmthargsnt ... to do!
```

```
\cmdmthargsnt{cmdName};
                          \verb|\cmdNameSnt[sub][sub][ext1]{arg}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1(arg)ext2|
                        \cmdmthargsnt{cmdName}[NewName];
                          \verb|\cmdNameSnt[sub][sub][ext1]{arg}[ext2] = \verb|\NewName|^{sub}_{sub}ext1(arg)ext2|
                     647 \newcommandx{\cmdmthargsnt}[2][2=]
                         {\usrmth{#1}{Snt}{argsnt}[#2]}
\cmdmthoargsnt ... to do!
                        \cmdmthoargsnt{cmdName};
                          \verb|\cmdNameSnt[sub][sub][arg]| = \verb|\cmdNames|^{sub}(arg)
                        • \cmdmthoargsnt{cmdName}[NewName];
                          \colon = NewNameSnt[sub][sub][arg] = NewName_{sub}^{sub}(arg)
                     649 \newcommandx{\cmdmthoargsnt}[2][2=]
                          {\usrmth{#1}{Snt}{oargsnt}[#2]}
 \cmdmthparsnt ... to do!
                        • \cmdmthparsnt{cmdName}:
                          \verb|\cmdNameSnt[sub][sub][ext1]{par}[ext2] = \verb|\cmdName|^{sub}_{sub}ext1[par]ext2|
                        • \cmdmthparsnt{cmdName} [NewName];
                          \verb|\cmdNameSnt[sub][sub][ext1]{par}[ext2] = \verb|\NewName|^{sub}_{sub}ext1[par]ext2|
                     651 \newcommandx{\cmdmthparsnt}[2][2=]
                     652 {\usrmth{#1}{Snt}{parsnt}[#2]}
\cmdmthoparsnt ... to do!
                        \cmdmthoparsnt{cmdName};
                          \verb|\cmdNameSnt[sub][sub][par]| = \verb|\cmdName|^{sub}_{sub}[par]|
                        • \cmdmthoparsnt{cmdName}[NewName];
                          \colon = NewNameSub[sub][sub][par] = NewNameSub[par]
                     653 \newcommandx{\cmdmthoparsnt}[2][2=]
                    654 {\usrmth{#1}{Snt}{oparsnt}[#2]}
  \mbox{\em mthfrm, } \dots \mbox{\em to do!}
                        • \mthfrm{Name} [sub] [sup] [Ext] = Name_{sub}^{sup}Ext
                        \bullet \  \, \texttt{\bar{Name}[Sub][Sup][Ext1]\{Arg\}[Ext2]} = Name_{sub}^{sup}Ext1(Arg)Ext2
                        • \mthparfrm{Name} [sub] [sup] [Ext1] {Par} [Ext2] = Name_{sub}^{sup} Ext1[Par]Ext2
                     655 %% Style for Formulae
                    656 \mbox{\cmmand{\bf https:/mathit}} \
     \aFrm, ... to do!
                   a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                    A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                    \alpha, \beta, \gamma, \delta, \epsilon, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, o, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
                    A,~B,~\Gamma,~\Delta,~E,~E,~Z,~H,~\Theta,~\Theta,~I,~K,~K,~\Lambda,~M,~N,~\Xi,~O,~\Pi,~\Pi,~P,~P,~\Sigma,~\Sigma,~T,~\Upsilon,~\Phi,~\Phi,~X,~\Psi,~\Omega
                    657 \seqoflet{Frm}{mthfrm}
     \cmdmthfrm ... to do!
                        \cmdmthfrm{cmdName};
                          \cmdNameFrm[sub][sub][ext] = cmdName_{sub}^{sub}ext
                        • \cmdmthfrm{cmdName} [NewName];
                          \cmdNameFrm[sub][sub][ext] = NewName_{sub}^{sub}ext
                     658 \newcommandx{\cmdmthfrm}[2][2=]
                          {\usrmth{#1}{Frm}{frm}[#2]}
 \cmdmthargfrm ... to do!
                        • \cmdmthargfrm{cmdName};
                          \verb|\cmdNameFrm[sub][sub][ext1]{arg}[ext2] = cmdName_{sub}^{sub}ext1(arg)ext2
                        • \cmdmthargfrm{cmdName}[NewName];
                          \cmdNameFrm[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
```

```
660 \newcommandx{\cmdmthargfrm}[2][2=]
                                                    {\usrmth{#1}{Frm}{argfrm}[#2]}
\cmdmthoargfrm ... to do!
                                                • \cmdmthoargfrm{cmdName};
                                                    \colon dNameFrm[sub][sub][arg] = cmdName_{sub}^{sub}(arg)
                                                • \cmdmthoargfrm{cmdName}[NewName];
                                                    \c MameFrm[sub][sub][arg] = NewName_{sub}^{sub}(arg)
                                          662 \newcommandx{\cmdmthoargfrm}[2][2=]
                                          663 {\usrmth{#1}{Frm}{oargfrm}[#2]}
  \cmdmthparfrm ... to do!
                                                • \cmdmthparfrm{cmdName};
                                                    \verb|\cmdNameFrm[sub][sub][ext1]{par}[ext2] = cmdName_{sub}^{sub}ext1[par]ext2|
                                                • \cmdmthparfrm{cmdName}[NewName];
                                                    \cmdNameFrm[sub][sub][ext1]\{par\}[ext2] = NewName_{sub}^{sub}ext1[par]ext2
                                          664 \newcommandx{\cmdmthparfrm}[2][2=]
                                          665 {\usrmth{#1}{Frm}{parfrm}[#2]}
\cmdmthoparfrm ... to do!
                                                • \cmdmthoparfrm{cmdName};
                                                    \colon dNameFrm[sub][sub][par] = cmdName_{sub}^{sub}[par]
                                                • \cmdmthoparfrm{cmdName}[NewName];
                                                    \cmdNameFrm[sub][sub][par] = NewName_{sub}^{sub}[par]
                                          666 \newcommandx{\cmdmthoparfrm}[2][2=]
                                                    {\usrmth{#1}{Frm}{oparfrm}[#2]}
                                         \mthmat, ... to do!
                                               • \mathbb{E}_{sub}[sub][sup][Ext] = \mathbf{Name}_{sub}^{sup}Ext
                                                \bullet \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Sup}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Arg}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \textbf{\bar{Name}} \  \, \underbrace{sub} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \textbf{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \textbf{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \textbf{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \textbf{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Ext1}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Ext2}} \  \, \texttt{\bar{Ext2}} \  \, = \  \, \texttt{\bar{Name}} \  \, \texttt{\bar{Ext2}} \  \, \texttt{\bar{
                                                • \mathbb{E}_{sub}[Sub][Sup][Ext1][Par][Ext2] = Name_{sub}^{sup}Ext1[Par]Ext2
                                          669 %% Style for Matrices
                                          670 \cmdmthall{mat}\newcommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}
          \aMat, ... to do!
                                       a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                                        A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                                        \alpha,\,\beta,\,\gamma,\,\delta,\,\epsilon,\,\varepsilon,\,\zeta,\,\eta,\,\theta,\,\vartheta,\,\iota,\,\kappa,\,\varkappa,\,\lambda,\,\mu,\,\nu,\,\xi,\,\mathbf{o},\,\pi,\,\varpi,\,\rho,\,\varrho,\,\sigma,\,\varsigma,\,\tau,\,\upsilon,\,\phi,\,\varphi,\,\chi,\,\psi,\,\omega
                                        A, B, \Gamma, \Delta, E, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, P, P, \Sigma, \Sigma, T, \Upsilon, \Phi, \Phi, X, \Psi, \Omega
                                          671 \seqoflet{Mat}{mthmat}
          \cmdmthmat ... to do!
                                                • \cmdmthmat{cmdName};
                                                    \c Mame Mat[sub][sub][ext] = cmd Name _{sub}^{sub} ext
                                                • \cmdmthmat{cmdName} [NewName];
                                                    \verb|\cmdNameMat[sub][sub][ext]| = \verb|NewName|^{sub}_{sub} ext|
                                          672 \newcommandx{\cmdmthmat}[2][2=]
                                         673 {\usrmth{#1}{Mat}{mat}[#2]}
  \cmdmthargmat ... to do!
                                                \cmdmthargmat{cmdName};
                                                    \verb|\cmdNameMat[sub][sub][ext1]{arg}[ext2] = \mathbf{cmdName}_{sub}^{sub} ext1(arg) ext2
                                                • \cmdmthargmat{cmdName}[NewName];
                                                    \cmdNameMat[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                          674 \newcommandx{\cmdmthargmat}[2][2=]
                                          675 {\usrmth{#1}{Mat}{argmat}[#2]}
```

```
\cmdmthoargmat ... to do!
                                           • \cmdmthoargmat{cmdName};
                                               \cmdNameMat[sub][sub][arg] = cmdName_{sub}^{sub}(arg)
                                           • \cmdmthoargmat{cmdName}[NewName];
                                               \colon = NewName_{sub}^{sub}(arg) = NewName_{sub}^{sub}(arg)
                                      676 \newcommandx{\cmdmthoargmat}[2][2=]
                                              {\usrmth{#1}{Mat}{oargmat}[#2]}
  \cmdmthparmat ... to do!
                                           • \cmdmthparmat{cmdName};
                                               \verb|\cmdNameMat[sub][sub][ext1]{par}[ext2] = \mathbf{cmdName}_{sub}^{sub}ext1[par]ext2
                                           • \cmdmthparmat{cmdName} [NewName];
                                               \verb|\cmdNameMat[sub][sub][ext1]{par}[ext2] = \verb|NewName|^{sub}_{sub}ext1[par]ext2|
                                     678 \newcommandx{\cmdmthparmat}[2][2=]
                                               {\usrmth{#1}{Mat}{parmat}[#2]}
\cmdmthoparmat ... to do!
                                           • \cmdmthoparmat{cmdName};
                                               \verb|\cmdNameMat[sub][sub][par]| = \mathbf{cmdName}_{sub}^{sub}[par]|
                                           • \cmdmthoparmat{cmdName}[NewName];
                                               \colon dNameMat[sub][sub][par] = NewName_{sub}^{sub}[par]
                                     680 \newcommandx{\cmdmthoparmat}[2][2=]
                                     681 {\usrmth{#1}{Mat}{oparmat}[#2]}
    \mthvec, ... to do!
                                           ullet \mthvec{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
                                           \bullet \  \, \texttt{\bar{Name}[Sub][Sup][Ext1]\{Arg\}[Ext2]} = Name_{sub}^{sup}Ext1(Arg)Ext2
                                           \bullet \  \, \texttt{\bar{Name}[Sub][Sup][Ext1]{Par}[Ext2]} = Name_{sub}^{sup}Ext1[Par]Ext2
                                     682 %% Style for Vectors
                                     683 \label{lem:command} $$683 \cmdmthall{vec}\newcommand{\mathbf \{\mthstyvec}[1]_{\boldsymbol{\mathbf \{\}}}}$
         \aVec, ... to do!
                                    a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
                                    A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
                                    \alpha,\,\beta,\,\gamma,\,\delta,\,\epsilon,\,\varepsilon,\,\zeta,\,\eta,\,\theta,\,\vartheta,\,\iota,\,\kappa,\,\varkappa,\,\lambda,\,\mu,\,\nu,\,\xi,\,o,\,\pi,\,\varpi,\,\rho,\,\varrho,\,\sigma,\,\varsigma,\,\tau,\,\upsilon,\,\phi,\,\varphi,\,\chi,\,\psi,\,\omega
                                    A,\,B,\,\Gamma,\,\Delta,\,E,\,E,\,Z,\,H,\,\Theta,\,\Theta,\,I,\,K,\,K,\,\Lambda,\,M,\,N,\,\Xi,\,O,\,\Pi,\,\Pi,\,P,\,P,\,\Sigma,\,\Sigma,\,T,\,\Upsilon,\,\Phi,\Phi,\,X,\,\Psi,\,\Omega
                                     684 \seqoflet{Vec}{mthvec}
         \cmdmthvec ... to do!
                                           • \cmdmthvec{cmdName};
                                               \verb|\cmdNameVec[sub][sub][ext]| = cmdName^{sub}_{sub}ext|
                                           • \cmdmthvec{cmdName} [NewName];
                                               \cmdNameVec[sub][sub][ext] = NewName_{sub}^{sub}ext
                                      685 \newcommandx{\cmdmthvec}[2][2=]
                                     686 {\usrmth{#1}{Vec}{vec}[#2]}
  \cmdmthargvec ... to do!
                                           \cmdmthargvec{cmdName};
                                                \verb|\cmdNameVec[sub][sub][ext1]{arg}[ext2] = cmdName^{sub}_{sub}ext1(arg)ext2
                                           • \cmdmthargvec{cmdName}[NewName];
                                               \verb|\cmdNameVec[sub][sub][ext1]{arg}[ext2] = NewName_{sub}^{sub}ext1(arg)ext2
                                      687 \newcommandx{\cmdmthargvec}[2][2=]
                                               {\usrmth{#1}{Vec}{argvec}[#2]}
\cmdmthoargvec ... to do!
                                           • \cmdmthoargvec{cmdName};
                                               \colon = cmdName \col
```

```
\verb|\cmdNameVec[sub][sub][arg]| = NewName_{sub}^{sub}(arg)
               689 \newcommandx{\cmdmthoargvec}[2][2=]
                  {\usrmth{#1}{Vec}{oargvec}[#2]}
 \cmdmthparvec ... to do!
                 \cmdmthparvec{cmdName};
                  \verb|\cmdNameVec[sub][sub][ext1]{par}[ext2] = cmdName^{sub}_{sub}ext1[par]ext2
                 • \cmdmthparvec{cmdName} [NewName];
                  \verb|\cmdNameVec[sub][sub][ext1]{par}[ext2] = NewName^{sub}_{sub}ext1[par]ext2
               691 \newcommandx{\cmdmthparvec}[2][2=]
                  {\usrmth{#1}{Vec}{parvec}[#2]}
\cmdmthoparvec ... to do!
                 \cmdmthoparvec{cmdName};
                  \verb|\cmdNameVec[sub][sub][par]| = cmdName^{sub}_{sub}[par]|
                 • \cmdmthoparvec{cmdName}[NewName];
                  \cmdNameVec[sub][sub][par] = NewName_{sub}^{sub}[par]
               693 \newcommandx{\cmdmthoparvec}[2][2=]
                  {\usrmth{#1}{Vec}{oparvec}[#2]}
               700 \iftext@
               \adhoc
                 • \adhoc = ad\ hoc
               702 \cmdtxtabr{adhoc}[ad hoc]
    \afortiori
                 • \arrange a fortiori
               703 \cmdtxtabr{afortiori}[a fortiori]
     \apriori
                 • \apriori = a priori
               704 \cmdtxtabr{apriori}[a priori]
                 • \arrowvertaposteriori = a\ posteriori
  \aposteriori
               705 \cmdtxtabr{aposteriori}[a posteriori]
          \cf
                 • \backslash cf = cf.
               706 \cmdtxtabr{cf}[cf.]
      \dedicto
                 • \del{dedicto} = de \ dicto
               707 \cmdtxtabr{dedicto}[de dicto]
      \defacto
                 • \del{defacto} = de \ facto
               708 \cmdtxtabr{defacto}[de facto]
        \dere
                 • \forall dere = de re
               709 \cmdtxtabr{dere}[de re]
\divideetimpera
                 • \divideetimpera = divide et impera
               710 \cmdtxtabr{divideetimpera}[divide et impera]
          \eg
                 • \backslash eg = e.g.
               711 \cmdtxtabr{eg}[e.g.]
```

\cmdmthoargvec{cmdName} [NewName];

```
\ergo
                       ◆ \ergo = ergo
                    712 \cmdtxtabr{ergo}
                       • \errata = errata
         \errata
                    713 \cmdtxtabr{errata}
                       • \erratum = erratum
        \erratum
                    714 \cmdtxtabr{erratum}
           \etal
                      • \ensuremath{\backslash} \mathtt{etal} = et \ al.
                    715 \cmdtxtabr{etal}[et al.]
            \etc
                       • \backslashetc = etc.
                    716 \cmdtxtabr{etc}[etc.]
                      • \forallie = i.e.
              \ie
                    717 \cmdtxtabr{ie}[i.e.]
                       \bullet \mutatismutandis = mutatis\ mutandis
\mutatismutandis
                    718 \cmdtxtabr{mutatismutandis}[mutatis mutandis]
      \percontra
                      • \percontra = per contra
                    719 \cmdtxtabr{percontra}[per contra]
     \primafacie
                       ullet \primafacie = prima\ facie
                    720 \cmdtxtabr{primafacie}[prima facie]
      \viceversa
                       • \viceversa = vice versa
                    721 \cmdtxtabr{viceversa}[vice versa]
                      • \vert vs = vs.
              \vs
                    722 \cmdtxtabr{vs}[vs.]
            \viz
                      • \viz = viz.
                    723 \cmdtxtabr{viz}[viz.]
                    \Afortiori
                      • \Afortiori = A fortiori
                    725 \cmdtxtabr{Afortiori}[A fortiori]
        \Apriori
                       • \Apriori = A \ priori
                    726 \cmdtxtabr{Apriori}[A priori]
    \Aposteriori
                       • \Aposteriori = A posteriori
                    727 \cmdtxtabr{Aposteriori}[A posteriori]
                       • \Dedicto = De \ dicto
        \Dedicto
                    728 \cmdtxtabr{Dedicto}[De dicto]
        \Defacto
                      \bullet \ \ \texttt{\ } \texttt{Defacto} = \textit{De facto}
                    729 \cmdtxtabr{Defacto} [De facto]
           \Dere
                       • \Dere = De re
                    730 \cmdtxtabr{Dere}[De re]
                       ullet \Divideetimpera = Divide\ et\ impera
\Divideetimpera
```

731 \cmdtxtabr{Divideetimpera}[Divide et impera]

```
\Eg
                • \backslash Eg = E.g.
              732 \cmdtxtabr{Eg}[E.g.]
                • \Errata = Errata
      \Errata
              733 \cmdtxtabr{Errata}
      \Erratum
                • \Erratum = Erratum
              734 \cmdtxtabr{Erratum}
                • \Mutatismutandis = Mutatis mutandis
\Mutatismutandis
              735 \cmdtxtabr{Mutatismutandis}[Mutatis mutandis]
    \Percontra
                • \Percontra = Per\ contra
              736 \cmdtxtabr{Percontra}[Per contra]
   \Primafacie
                 \bullet \ \ \verb|\Primafacie| = Prima\ facie \\
              737 \cmdtxtabr{Primafacie}[Prima facie]
    \Viceversa
                • \forall Viceversa = Vice versa
              738 \cmdtxtabr{Viceversa}[Vice versa]
              • \n naif = naif
        \n
              742 \texttt{\cmdtxtabr{naif}[na\"{i}f]}
       \naive
                • \naive = naive
              743 \mbox{cmdtxtabr{naive}[na\"{i}ve]}
        \role
                • \role = r\hat{o}le
              744 \cmdtxtabr{role}[r\^{o}le]
              \Role
                • \label{eq:Role} \operatorname{Role} = R\hat{o}le
              746 \cmdtxtabr{Role}[R\^{o}le]
              \aka
                748 \cmdtxtabr{aka}[a.k.a.]
       \contd
                • \contd = contd.
              749 \cmdtxtabr{contd}[contd.]
         \iff
                • \iff = iff
              750 \cmdtxtabr{iff}
                • \ \ \ \ stx = s.t.
         \stx
              751 \cmdtxtabr{stx}[s.t.]
        \resp
                • \resp = resp.
              752 \cmdtxtabr{resp}[resp.]
```

```
\wrt
             • \wrt = w.r.t.
           753 \cmdtxtabr{wrt}[w.r.t.]
             • \wdots w.l.o.g.
     \wlogx
           754 \cmdtxtabr{wlogx}[w.l.o.g.]
           • \Contd = Contd.
     \Contd
           756 \cmdtxtabr{Contd}[Contd.]
     \Wlogx
             • \W logx = W.l.o.g.
           757 \cmdtxtabr{Wlogx}[W.l.o.g.]
           758 \fi
           763 \ifmath@
           \defeq, \seteq
           765 \DeclareRobustCommand{\defeq}
              {\@ifstar%
           767
                {\mthlbop{\stackrel{\text{\textup{def}}}{=}}}%
           768
                {\mthlbop{\triangleq}}}
           769 \DeclareRobustCommand{\seteq}
           770 {\mbox{\mbox{\mbox{$\sim$}}{\bf }}}
           \implies, ...
           772 \DeclareRobustCommand{\implies}
           773 {\mthlrel{\Rightarrow}}
           774 \DeclareRobustCommand{\notimplies}
           775 {\mthlrel{\not\Rightarrow}}
 \implied, ... ...
           776 \DeclareRobustCommand{\implied}
           777 {\mthlrel{\Leftarrow}}
           778 \DeclareRobustCommand{\notimplied}
           779 {\mthlrel{\not\Leftarrow}}
\coimplies, ... ...
           780 \DeclareRobustCommand{\coimplies}
           781 {\mthlrel{\Leftrightarrow}}
           782 \DeclareRobustCommand{\notcoimplies}
           783 {\mthlrel{\not\!\Leftrightarrow}}
           \cmodels, ... ...
           785 \DeclareRobustCommand{\cmodels}
           786 {\mthlrel{\models}}
           787 \DeclareRobustCommand{\notcmodels}
           788 {\mthlrel{\not\models}}
 \cequiv, ... ...
           789 \DeclareRobustCommand{\cequiv}
           790 {\mthlrel{\equiv}}
           791 \DeclareRobustCommand{\notcequiv}
           792 {\mthlrel{\not\equiv}}
```

```
\dual, \adj, ... ...
                 794 \DeclareRobustCommand{\dual}[1]
                    {\mth{\overline{#1}}}
                 796 \DeclareRobustCommand{\adj}[1]
                    {\mth{\mathring{#1}}}
                 798 \DeclareRobustCommand{\der}[1]
                    {\mth{\widehat{#1}}}
                 800 \DeclareRobustCommand{\trn}[1]
                 801 \quad \{\mathbf{mth}\{\mathbf{41}\}\}
           \vec ...
                 802 \DeclareRobustCommand{\vec}
                    {\@ifstar{\@svec}{\@vec}}
                 804 \DeclareRobustCommand{\@vec}[1]
                 805 {\bf 1} {\mth{\mathaccent"017E{#1}}}
                 806 \DeclareRobustCommand{\@svec}[1]
                 807 {\mth{\overline{#1}}}
                 \enumeration, ... ...
                 809 \varcmd{enumeration}{\mth}{}{,}{}{}
                 810 \\ {\mth}{}{;}{}}
  \sequence, ... ...
                 811 \varcmd{sequence}{\mth}{\left[}{,}{\right]}{}
                 812 \varcmd{sequencel}{\mth}{\left[}{,}{\right.}{}
                 813 \varcmd{sequencer}{\mth}{\left.}{,}{\right]}{}
                 814 \varcmd{sequencex}{\mth}{\left[}{;}{\right]}{}
                 815 \varcmd{sequencexl}{\mth}{\left[}{;}{\right.}{}
                 816 \varcmd{sequencexr}{\mth}{\left.}{;}{\right]}{}
     \tuple, ... ...
                 817 \varcmd{tuple}{\mth}{\left\langle}{,}{\right\rangle}{}
                 818 \varcmd{tuplel}{\mth}{\left\langle}{,}{\right.}{}
                 819 \varcmd{tupler}{\mth}{\left.}{,}{\right\rangle}{}
                 820 \varcmd{tuplex}{\mth}{\left\langle}{;}{\right\rangle}{}
                 821 \varcmd{tuplex1}{\mth}{\left\langle}{;}{\right.}{}
                 822 \varcmd{tuplexr}{\mth}{\left.}{;}{\right\rangle}{}
                 \set, ... ...
                 824 \DeclareRobustCommand{\set}
                     {\@ifstar{\@set}{\@set[\left][\middle][\right]}}
                 826 \DeclareRobustCommandx{\@set}[5][1=, 2=, 3=]
                    828 \DeclareRobustCommand{\set1}
                     {\@ifstar{\@setl}{\@setl[\left][\right]}}
                 830 \DeclareRobustCommandx{\@setl}[3][1=, 2=]
                    {\mth{\argmid{#1\lbrace}{#3}{\,#2\vert\!}}}
                 832 \DeclareRobustCommand{\setr}
                 833 {\@ifstar{\@setr}{\@setr[\left.][\right]}}
                 834 \DeclareRobustCommandx{\@setr}[3][1=, 2=]
                    {\mth{\argmid{#1}{#3}{#2\rbrace}}}
          \card ...
                 836 \DeclareRobustCommand{\card}
                 837 {\@ifstar{\@card}{\@card[\left][\right]}}
                 838 \DeclareRobustCommandx{\@card}[3][1=, 2=]
                    {\mth{\argmid{#1\lvert}{#3}{#2\rvert}}}
```

```
\pow ...
           840 \DeclareRobustCommand{\pow}[1]
              {\mth{2^{\defval{#1}{\cdot}}}}
     \denot ...
           842 \DeclareRobustCommand{\denot}
           843 {\@ifstar{\@denot}{\@denot[\left][\right]}}
           844 \DeclareRobustCommandx{\@denot}[3][1=, 2=]
           845 {\mth{\argmid{#1\llbracket}{#3}{#2\rrbracket}}}
           \emptyrel ...
           847 \DeclareRobustCommand{\emptyrel}
           848 {\mth{\varnothing}}
           \dom, \cod, ... ...
           850 \DeclareRobustCommand{\dom}
              {\mthargfun{dom}}
           852 \DeclareRobustCommand{\cod}
           853 {\mthargfun{cod}}
           854 \DeclareRobustCommand{\rng}
           855 {\mthargfun{rng}}
           856 \DeclareRobustCommand{\img}
              {\mthargfun{img}}
           \prj ...
           859 \DeclareRobustCommand{\prj}
           860 {\mthargfun{prj}}
       \rst ...
           861 \DeclareRobustCommand{\rst}
           862 {\mthlbop{\upharpoonright}}
       \cmp ...
           863 \DeclareRobustCommand{\cmp}
           864 {\mthlbop{\circ}}
           \emptyfun ...
           866 \DeclareRobustCommand{\emptyfun}
           867 {\mth{\varnothing}}
           \pto, \pmapsto
           869 \DeclareMathOperator{\pto}
              {\ensuremath{\rightharpoonup}}
           871 \DeclareMathOperator{\pmapsto}
              \kern-1.5ex\rightharpoonup}}}
```

```
\fix, \ifp, ... ...
                875 \DeclareRobustCommand{\fix}
                876 {\mthfun{fix}}
                877 \DeclareRobustCommand{\ifp}
                878 {\mthfun{ifp}}
                 879 \DeclareRobustCommand{\lfp}
                    {\mthfun{lfp}}
                 881 \DeclareRobustCommand{\gfp}
                    {\mthfun{gfp}}
                 \Aomega, \AOmega ...
                 884 \DeclareRobustCommand{\Aomega}
                 885 {\mthargset{\omega}}
                 886 \DeclareRobustCommand{\AOmega}
                887 {\mthargset{\Omega}}
\Atheta, \ATheta
                 888 \DeclareRobustCommand{\Atheta}
                    {\mthargset{\theta}}
                 890 \DeclareRobustCommand{\ATheta}
                    {\mthargset{\Theta}}
 \Aomicron, ... ...
                892 \DeclareRobustCommand{\Aomicron}
                 893 {\mthargset{\omicron}}
                 894 \DeclareRobustCommand{\AOmicron}
                     {\mthargset{\Omicron}}
                \SetB ...
                897 \DeclareRobustCommand{\SetB}
                898 {\mthset[mathbb]{B}}
          \SetF ...
                899 \DeclareRobustCommand{\SetF}
                900 {\bf [mathbb]{F}}
     \SetN, ... ...
                901 \DeclareRobustCommand{\SetN}
                902 {\mthset[mathbb]{N}}
                903 \DeclareRobustCommand{\SetNI}[1][]
                904 {\SetN[\infty #1]}
     \SetZ, ... ...
                905 \DeclareRobustCommand{\SetZ}
                906 {\mthset[mathbb]{Z}}
                907 \DeclareRobustCommand{\SetZI}[1][]
                908 {\SetZ[\pm\infty #1]}
                909 \DeclareRobustCommand{\SetZPI}[1][]
                910 {\SetZ[+\infty #1]}
                911 \DeclareRobustCommand{\SetZNI}[1][]
                912 {\SetZ[-\infty #1]}
     \SetQ, ... ...
                913 \DeclareRobustCommand{\SetQ}
                914 {\mthset[mathbb]{Q}}
                915 \DeclareRobustCommand{\SetQI}[1][]
                916 {\SetQ[\pm\infty #1]}
                917 \DeclareRobustCommand{\SetQPI}[1][]
                    {\SetQ[+\infty #1]}
                 919 \DeclareRobustCommand{\SetQNI}[1][]
                 920 {\SetQ[-\infty #1]}
```

```
\SetR, ... ...
                                   921 \DeclareRobustCommand{\SetR}
                                   922 {\mthset[mathbb]{R}}
                                   923 \DeclareRobustCommand{\SetRI}[1][]
                                   924 {\SetR[\pm\infty #1]}
                                   925 \DeclareRobustCommand{\SetRPI}[1][]
                                   926 {\SetR[+\infty #1]}
                                    927 \DeclareRobustCommand{\SetRNI}[1][]
                                   928 {\SetR[-\infty #1]}
          \SetC, ... ...
                                   929 \DeclareRobustCommand{\SetC}
                                   930 {\bf [mathbb]{C}}
                                   931 \DeclareRobustCommand{\SetCI}[1][]
                                   932 {\SetC[\infty #1]}
                                    \num, ... ...
                                   934 \DeclareRobustCommand(\num)[1]
                                   935 {\mth{[#1]}}
                                   936 \DeclareRobustCommand{\numcc}[2]
                                   937 {\mth{[\argsep{#1}{,}{#2}]}}
                                   938 \DeclareRobustCommand{\numco}[2]
                                   939 {\mth{[\argsep{#1}{,}{#2})}}
                                   940 \DeclareRobustCommand{\numoc}[2]
                                    941 {\mth{(\argsep{#1}{,}{#2}]}}
                                    942 \DeclareRobustCommand{\numoo}[2]
                                    943 {\mth{(\argsep{#1}{,}{#2}))}}
                                    \floor, \ceil ...
                                    945 \DeclareRobustCommand{\floor}
                                    946 {\@ifstar{\@floor}{\@floor[\left][\right]}}
                                   947 \DeclareRobustCommandx{\@floor}[3][1=, 2=]
                                    948 {\bf 4}^{41} = {\bf 4}^{43}
                                    949 \DeclareRobustCommand{\ceil}
                                    950 {\@ifstar{\@ceil}{\@ceil[\left][\right]}}
                                    951 \DeclareRobustCommandx{\@ceil}[3][1=, 2=]
                                    952 {\mth{\argmid{#1\lceil}{#3}{#2\rceil}}}
                                    \arg ...
                                   954 \DeclareRobustCommand{\arg}
                                   955 {\mthfun{arg}}
          \evn, \odd ...
                                   956 \DeclareRobustCommand{\evn}
                                   957 {\mthfun{evn}}
                                   958 \DeclareRobustCommand{\odd}
                                   959 {\mthfun{odd}}
            \bst, ... ...
                                    960 \label{localized} $960 \label{localized} $$ 1960 \label{localized} $$ 960 \label{localized} $$ 1960 \label{localized
                                   961 {\mthfun{bst}}
                                   962 \DeclareRobustCommand{\argbst}
                                   963 {\mthfun{arg bst}}
\min, \max, ... ...
                                   964 \DeclareRobustCommand{\min}
                                   965 {\mthfun{min}}
```

```
966 \DeclareRobustCommand{\max}
                                            {\mthfun{max}}
                                 968 \DeclareRobustCommand{\argmin}
                                 969 {\mthfun{arg min}}
                                 970 \DeclareRobustCommand{\argmax}
                                 971 {\mthfun{arg max}}
\inf, \sup
                                 972 \DeclareRobustCommand{\inf}
                                 973 {\mthfun{inf}}
                                 974 \DeclareRobustCommand{\sup}
                                 975 {\mthfun{sup}}
                                 \emptyseq
                                 977 \DeclareRobustCommand{\emptyseq}
                                 978 {\mth{\varepsilon}}
\fst, \lst ...
                                 979 \DeclareRobustCommand{\fst}
                                 980 {\mthargfun{fst}}
                                 981 \DeclareRobustCommand{\lst}
                                 982 {\mathbf{st}}
                                 983 \fi
                                 988 \ifcom@
\defcomcls ... to do!
                                        • \defcomcls{CompClass};
                                             \CompClass[sub][sup][ext] = COMPCLASS_{SUB}^{SUP}EXT
                                             \CoCompClass[sub][sup][ext] = CoCompClass_{SUB}^{SUP}EXT
                                             \verb|\CompClassE[sub][sup][ext]| = CompClass-Easy_{SUB}^{SUP}EXT
                                             \verb|\CoCompClassE[sub][sup][ext]| = CoCompClass-Easy^{SUP}_{SUR}EXT
                                             \CompClassH[sub][sup][ext] = COMPCLASS-HARD_{SUB}^{SUP}EXT
                                             \verb|\CoCompClassH[sub][sup][ext]| = CoCompClass-Hard_{SUB}^{SUP}EXT
                                             \verb|\CompClassC[sub][sup][ext]| = CompClass-complete_{Sub}^{SUP}EXT
                                            \verb|\CoCompClassC[sub][sup][ext]| = CoCompClass-complete_{SUB}^{SUP}EXT
                                            \N{CompClass[sub][sup][ext]} = N{CompCLASS_{SUB}^{SUP}}{EXT}
                                            \verb|\ConCompClass[sub][sup][ext]| = ConCompClass_{SUB}^{SUP}EXT
                                            \N{\c CompClassE[sub][sup][ext]} = N{\c CompClass-Easy}_{SUB}^{SUP}EXT
                                            \verb|\ConCompClassE[sub][sup][ext]| = ConCompClass-Easy_{SUB}^{SUP}EXT|
                                            \verb|NCompClassH[sub][sup][ext]| = NCOMPCLASS-HARD_{SUB}^{SUP}EXT
                                             \verb|\ConCompClassH[sub][sup][ext]| = ConCompClass-Hard_{SUB}^{SUP}EXT
                                             \label{eq:ncompClassC} $$\N{\compClassC[sub][sup][ext]} = N{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClassC[sub][sup][ext]} = N{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClassC[sub][sup][ext]} = N{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUB}^{SUP}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompClass-CompLete}_{SUB}^{SUB}{\ccompCl
                                            \verb|\ConCompClassC[sub][sup][ext]| = ConCompClass-complete_{sub}^{SUP}EXT
                                            \verb|\UCompClass[sub][sup][ext]| = UCOMPCLASS^{SUP}_{SUB}EXT
                                            \verb|\CoUCompClass[sub][sup][ext]| = CoUCompClass_{SUB}^{SUP}EXT
                                            \label{eq:UCompClassEsub} $$ \[\sup] [ext] = UCOMPCLASS-EASY_{SUB}^{SUP}EXT $$
                                             \CoulompClassE[sub][sup][ext] = CoUCOMPCLASS-EASY_{SUB}^{SUP}EXT
                                            \verb|VCompClassH[sub][sup][ext]| = UCOMPCLASS-HARD_{SUB}^{SUP}EXT
                                             \Coultberg Coultberg Cou
                                             \label{eq:UCompClassC} $$\UCompClassC[sub][sup][ext] = UCompClass-Complete_{SUB}^{SUP}EXT$
                                             \verb|\CoUCompClassC[sub][sup][ext]| = CoUCompClass-Complete_{SUB}^{SUP}EXT
                                             \verb|\ACompClass[sub][sup][ext]| = ACOMPCLASS^{SUP}_{SUB}EXT
                                             \CoACompClass[sub][sup][ext] = CoACompClass_{SUB}^{SUP}EXT
```

```
\verb|\ACompClassH[sub][sup][ext]| = ACOMPCLASS-HARD_{SUB}^{SUP}EXT
                    \verb|\CoACompClassH[sub][sup][ext]| = CoACompClass-Hard_{SUB}^{SUP}EXT
                    \verb|\ACompClassC[sub][sup][ext]| = ACOMPCLASS-COMPLETE_{SUB}^{SUP}EXT
                    \CoACompClassC[sub][sup][ext] = CoACompClass-Complete_{SUB}^{SUP}EXT
                  \defcomcls{CompClass}[NewClass];
                    \CompClass[sub][sup][ext] = NewClass_{SUB}^{SUP}EXT
                    \verb|\CoCompClass[sub][sup][ext]| = CoNewClass_{SUB}^{SUP}EXT
                    \verb|\CompClassE[sub][sup][ext]| = NewClass-easy_{Sub}^{SUP}EXT
                    \verb|\CoCompClassE[sub][sup][ext]| = CoNewClass-Easy_{SUB}^{SUP}EXT
                    \CompClassH[sub][sup][ext] = NewClass-Hard_{SUB}^{SUP}EXT
                    \CoCompClassH[sub][sup][ext] = CoNewClass-Hard_{SUR}^{SUP}EXT
                    \CompClassC[sub][sup][ext] = NewClass-CompLete_{SUR}^{SUP}EXT
                    \CoCompClassC[sub][sup][ext] = CoNewClass-Complete_{SUB}^{SUP}EXT
                    \verb|\NCompClass[sub][sup][ext]| = NNEWCLASS^{SUP}_{SUB}EXT
                    \ConCompClass[sub][sup][ext] = ConNewClass_{SUB}^{SUP}EXT
                    \NCompClassE[sub][sup][ext] = NNEWCLASS-EASY_{SUB}^{SUP}EXT
                    \verb|\CoNCompClassE[sub][sup][ext]| = CoNNewClass-Easy_{SUB}^{SUP}EXT|
                    \verb|\NCompClassH[sub][sup][ext]| = NNEWCLASS-HARD_{SUB}^{SUP}EXT
                    \verb|\CoNCompClassH[sub][sup][ext]| = CoNNewClass-HARD_{SUB}^{SUP}EXT
                    \verb|NCompClassC[sub][sup][ext]| = NNEWCLASS-COMPLETE_{SUB}^{SUP}EXT
                    \verb|\CoNCompClassC[sub][sup][ext]| = CoNNewClass-complete_{SUB}^{SUP}EXT
                    \verb|\UCompClass[sub][sup][ext]| = UNEWCLASS^{SUP}_{SUB}EXT
                    \texttt{CoUCompClass[sub][sup][ext]} = CoUNEWCLASS_{SUB}^{SUP}EXT
                    \verb|\UCompClassE[sub][sup][ext]| = UNEWCLASS-EASY_{SUB}^{SUP}EXT
                    \verb|\CoUCompClassE[sub][sup][ext]| = CoUNEwClass-Easy_{SUB}^{SUP}EXT
                    \label{eq:UCompClassH} $$ \UCompClassH[sub][sup][ext] = UNEWCLASS-HARD_{SUB}^{SUP}EXT $$
                    \verb|\CoUCompClassH[sub][sup][ext]| = CoUNEwClass-Hard_{SUB}^{SUP}EXT
                    \verb|\UCompClassC[sub][sup][ext]| = UNEWCLASS-COMPLETE_{SUB}^{SUP}EXT
                    \texttt{CoUCompClassC[sub][sup][ext]} = \texttt{CoUNewClass-complete}^{\texttt{SUP}}_{\texttt{SUB}} \texttt{EXT}
                    \texttt{\ACompClass[sub][sup][ext]} = ANEWCLASS^{SUP}_{SUR}EXT
                    \CoACompClass[sub][sup][ext] = CoANEWCLASS^{SUP}_{SUR}EXT
                    \triangle CompClassE[sub][sup][ext] = ANEWCLASS-EASY_{SUR}^{SUP}EXT
                    \verb|\CoACompClassE[sub][sup][ext]| = CoANewClass-easy_{sub}^{SUP}EXT
                    \verb|\ACompClassH[sub][sup][ext]| = ANEWCLASS-HARD_{SUB}^{SUP}EXT
                    \verb|\CoACompClassH[sub][sup][ext]| = CoANewClass-Hard_{SUB}^{SUP}EXT
                    \ACompClassC[sub][sup][ext] = ANEWCLASS-COMPLETE_{SUB}^{SUP}EXT
                    \verb|\CoACompClassC[sub][sup][ext]| = CoANewClass-complete_{SUB}^{SUP}EXT
               989 \newcommandx{\defcomcls}[2][2=]
                    {\defcomclssem{#1}{\defval{#2}{#1}}%
                     992 \newcommandx{\defcomclssem}[3][3=]
                    {\defcomclsred{#3#1}{#2}[#3]%
                     \defcomclsred{#3N#1}{#2}[#3N]%
               994
                     \defcomclsred{#3U#1}{#2}[#3U]%
               995
                    \defcomclsred{#3A#1}{#2}[#3A]}
               997 \newcommandx{\defcomclsred}[3][3=]
                    {\defcomclscmd{#1}{#2}[#3]%
                     \defcomclscmd{#1E}{#2}[#3][-easy]%
              1000
                    \defcomclscmd{#1H}{#2}[#3][-hard]%
                     \defcomclscmd{#1C}{#2}[#3][-complete]}%
              1002 \newcommandx{\defcomclscmd}[4][3=, 4=]
                    {\csdef{#1}{\txtcom{#3#2#4}}}
\defcomhrc ... to do!
                 • \defcomhrc{CompHierarchy};
                    CompHierarchy[sub][sup][ext] = COMPHIERARCHY_{SUB}^{SUP}EXT
```

 $\label{eq:lass-easy} $$ \Delta CompClassE[sub] [sup] [ext] = ACOMPCLASS-EASY_{SUB}^{SUP} EXT $$ CoACompClassE[sub] [sup] [ext] = CoACompClass-EASY_{SUB}^{SUP} EXT $$ CoACompClassE[sub] [sup] [ext] = CoACompClass-EASY_{SUB}^{SUP} EXT $$ CoACompClass-EASY_{SUB}^{SUP} EXT $$$ 

```
\defcomhrc{CompHierarchy} [NewHierarchy];
                            CompHierarchy[sub][sup][ext] = NEWHIERARCHY<sup>SUP</sup><sub>SUR</sub>EXT
                      1004 \newcommandx{\defcomhrc}[2][2=]
                             {\csdef{#1}{\txtcom{\defval{#2}{#1}}}}
                      \Easy, \Hard, ...
                      1007 \cmdtxtcom{Easy}
                      1008 \cmdtxtcom{Hard}
                      1009 \cmdtxtcom{Complete}
                      • Time[sub][sup][ext] = TIME_{SUB}^{SUP}EXT
        \Time, ...
                            \mathsf{TimeE[sub][sup][ext]} = \mathsf{TIME\text{-}EASY}^{\mathsf{SUP}}_{\mathsf{SUB}}\mathsf{EXT}
                            TimeH[sub][sup][ext] = TIME-HARD_{SUB}^{SUP}EXT
                            TimeC[sub][sup][ext] = TIME-COMPLETE_{SUB}^{SUP}EXT
                          • \NTime[sub][sup][ext] = NTIME_{SUB}^{SUP}EXT
                            \verb|\NTimeE[sub][sup][ext]| = NTIME-EASY_{SUB}^{SUP}EXT
                            \TimeH[sub][sup][ext] = NTIME-HARD_{SUB}^{SUP}EXT
                            \verb|\NTimeC[sub][sup][ext]| = NTIME-COMPLETE_{SUB}^{SUP}EXT
                          ullet \UTime[sub][sup][ext] = \mathrm{UTIME}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}
                            \UTimeE[sub][sup][ext] = UTIME-EASY_{SUB}^{SUP}EXT
                            \UTimeH[sub][sup][ext] = UTIME-HARD_{SUB}^{SUP}EXT
                            \verb| UTimeC[sub][sup][ext] = UTIME-COMPLETE_{SUR}^{SUP}EXT
                          • ATime[sub][sup][ext] = ATIME_{SUB}^{SUP}EXT
                            \texttt{\ATimeE[sub][sup][ext]} = \text{ATIME-EASY}^{\text{SUP}}_{\text{SUB}} \text{EXT}
                            \Delta TimeH[sub][sup][ext] = ATIME-HARD_{SUB}^{SUP}EXT
                            \Delta TimeC[sub][sup][ext] = ATIME-COMPLETE_{SUB}^{SUP}EXT
                      1011 \defcomcls{Time}
                          \Space, ...
                            \SpaceE[sub][sup][ext] = SPACE-EASY_{SUB}^{SUP}EXT
                            \verb|\SpaceH[sub][sup][ext]| = SPACE-HARD_{SUB}^{SUP}EXT
                            \SpaceC[sub][sup][ext] = SPACE-COMPLETE_{SUB}^{SUP}EXT
                           \bullet \ \texttt{NSpace[sub][sup][ext]} = NSPACE^{SUP}_{SUB}EXT \\
                            \NSpaceE[sub][sup][ext] = NSPACE-EASY_{SUB}^{SUP}EXT
                            \NSpaceH[sub][sup][ext] = NSPACE-HARD_{SUB}^{SUP}EXT
                            \verb|\NSpaceC[sub][sup][ext]| = NSPACE-COMPLETE_{SUB}^{SUP}EXT
                          • USpace[sub][sup][ext] = USPACE_{SUB}^{SUP}EXT
                            \USpaceE[sub][sup][ext] = USPACE-EASY_{SUB}^{SUP}EXT
                            \verb|\USpaceH[sub][sup][ext]| = USPACE-HARD^{SUP}_{SUB}EXT
                            \verb|\USpaceC[sub][sup][ext]| = USPACE-COMPLETE_{SUB}^{SUP}EXT
                          • ASpace[sub][sup][ext] = ASPACE_{SUB}^{SUP}EXT
                            \verb|\ASpaceE[sub][sup][ext]| = ASPACE\text{-}EASY_{SUB}^{SUP}EXT
                            \verb|\ASpaceH[sub][sup][ext]| = ASPACE-HARD_{SUB}^{SUP}EXT
                            ASpaceC[sub][sup][ext] = ASPACE-COMPLETE_{SUB}^{SUP}EXT
                      1012 \defcomcls{Space}
                          • \lfloor LogTime[sub][sup][ext] = LogTime_{Sub}^{SUP}EXT
    \LogTime, ...
                            \LogTimeE[sub][sup][ext] = LogTime-Easy_{Sub}^{SUP}EXT
                            LogTimeH[sub][sup][ext] = LogTime-Hard_{Sup}^{SUP}EXT
                            LogTimeC[sub][sup][ext] = LogTime-Complete_{Sup}^{SUP}EXT
                          • \NLogTime[sub][sup][ext] = NLogTime_{SUB}^{SUP}EXT
                            \verb|\NLogTimeE[sub][sup][ext]| = NLogTime-easy_{Sub}^{SUP}ext
                            \verb|\NLogTimeH[sub][sup][ext]| = NLogTime-Hard_{SUB}^{SUP}EXT
                            \NLogTimeC[sub][sup][ext] = NLogTime-Complete_{Sub}^{SUP}EXT
```

•  $ALogTime[sub][sup][ext] = ALogTime_{SUB}^{SUP}EXT$  $\verb|\ALogTimeE[sub][sup][ext]| = ALogTime-Easy_{sup}^{SUP}EXT$  $\verb|\ALogTimeH[sub][sup][ext]| = ALogTime-Hard_{SUB}^{SUP}EXT$  $\verb|\ALogTimeC[sub][sup][ext]| = ALogTime-Complete_{SUB}^{SUP}EXT|$ 1013 \defcomcls{LogTime} •  $LogSpace[sub][sup][ext] = LogSpace_{SUB}^{SUP}EXT$ \LogSpace, ...  $LogSpaceE[sub][sup][ext] = LogSpace-Easy_{sup}^{SUP}EXT$ LogSpaceH[sub][sup][ext] = LogSpace-HardSup EXT $LogSpaceC[sub][sup][ext] = LogSpace-complete_{sup}^{SUP}EXT$  $\NLogSpaceE[sub][sup][ext] = NLogSpace-Easy_{SUB}^{SUP}EXT$  $\NLogSpaceH[sub][sup][ext] = NLogSpace-Hard_{Sub}^{SUP}EXT$  $\NLogSpaceC[sub][sup][ext] = NLogSpace-CompleteSup_EXT$ •  $\ULogSpace[sub][sup][ext] = ULogSpace_{SUB}^{SUP}EXT$  $\ULogSpaceE[sub][sup][ext] = ULogSpace-Easy_{SUB}^{SUP}EXT$  $\verb|VLogSpaceH[sub][sup][ext]| = ULogSpace-Hard_{SUB}^{SUP}EXT$  $\ULogSpaceC[sub][sup][ext] = ULogSpace-Complete_{SUB}^{SUP}EXT$ •  $ALogSpace[sub][sup][ext] = ALogSpace_{SUB}^{SUP}EXT$  $\verb|\ALogSpaceE[sub][sup][ext]| = ALogSpace-Easy_{SUB}^{SUP}EXT|$  $\verb|\ALogSpaceH[sub][sup][ext]| = ALogSpace-Hard_{SUB}^{SUP}EXT$  $ALogSpaceC[sub][sup][ext] = ALogSpace-Complete_{Sup}^{SUP}EXT$ 1014 \defcomcls{LogSpace} • \PTime[sub][sup][ext] = PTIME\_SUBEXT \PTime, ...  $\verb|\PTimeE[sub][sup][ext]| = PTime-EASY_{SUR}^{SUP}EXT$  $\label{eq:ptimeH} $$ \Pr[\text{sub}][\text{sup}][\text{ext}] = \Pr[\text{TIME-HARD}^{\text{SUP}}_{\text{SUB}}] = \Pr[\text{TIME-HARD}^{\text{SUB}}_{\text{SUB}}] = \Pr[\text{TIME-HARD}^$  $\label{eq:ptimeC} $$ \Pr[\text{Sup}][\text{ext}] = \Pr[\text{ME-COMPLETE}_{\text{SUB}}^{\text{SUP}}] = \Pr[\text{ME-COMPLETE}_{\text{SUB}}^{\text{SUB}}] = \Pr[\text{ME-COMPLETE}_{\text{SUB}}^{$ •  $\NPTime[sub][sup][ext] = NPTIME_{SUB}^{SUP}EXT$  $\NPTimeE[sub][sup][ext] = NPTIME-EASY_{SUB}^{SUP}EXT$  $\NPTimeH[sub][sup][ext] = NPTIME-HARD_{SUB}^{SUP}EXT$  $\texttt{NPTimeC[sub][sup][ext]} = \mathrm{NPTIME\text{-}COMPLETE}^{\mathrm{SUP}}_{\mathrm{SUB}} \mathrm{EXT}$ • \UPTime[sub][sup][ext] = UPTIME\_SUP\_EXT  $\verb|\UPTimeE[sub][sup][ext]| = UPTIME-EASY_{SUB}^{SUP}EXT|$  $\verb|\UPTimeH[sub][sup][ext]| = \mathrm{UPTIME\text{-}HARD}^{SUP}_{SUB}\mathrm{EXT}|$  $\verb|\UPTimeC[sub][sup][ext]| = UPTIME-COMPLETE_{SUR}^{SUP}EXT$ •  $APTime[sub][sup][ext] = APTIME_{SUB}^{SUP}EXT$  $\label{eq:aptimeEsub} $$ \Delta PTimeE[sub][sup][ext] = APTIME-EASY_{SUB}^{SUP}EXT $$$  $\APTimeH[sub][sup][ext] = APTIME-HARD_{SUB}^{SUP}EXT$  $\APTimeC[sub][sup][ext] = APTIME-COMPLETE_{SUB}^{SUP}EXT$ 1015 \defcomcls{PTime} •  $\PSpace[sub][sup][ext] = PSPACE_{SUB}^{SUP}EXT$ \PSpace, ...  $\verb|PSpaceE[sub][sup][ext]| = PSPACE-EASY_{SUB}^{SUP}EXT|$  $\verb|\PSpaceH[sub][sup][ext]| = PSPACE-HARD_{SUB}^{SUP}EXT|$  $\PSpaceC[sub][sup][ext] = PSPACE-COMPLETE_{SUB}^{SUP}EXT$ •  $\NPSpace[sub][sup][ext] = NPSPACE_{SUB}^{SUP}EXT$  $\verb|\NPSpaceE[sub][sup][ext]| = NPSPACE-EASY_{SUB}^{SUP}EXT|$  $\verb|\NPSpaceH[sub][sup][ext]| = NPSPACE-HARD_{SUB}^{SUP}EXT|$  $\label{eq:NPSpaceCsub} $$ \NPSpaceC[sub][sup][ext] = NPSPACE-COMPLETE_{SUB}^{SUP}EXT $$$ •  $\UPSpace[sub][sup][ext] = UPSPACE_{SUB}^{SUP}EXT$  $\verb|\UPSpaceE[sub][sup][ext]| = UPSPACE-EASY_{SUB}^{SUP}EXT$  $\verb| UPSpaceH[sub][sup][ext] = UPSPACE-HARD_{SUB}^{SUP}EXT$  $\UPSpaceC[sub][sup][ext] = UPSPACE-COMPLETE_{SUB}^{SUP}EXT$ 

•  $\ULogTime[sub][sup][ext] = ULogTime_{SUB}^{SUP}EXT$ 

 $\label{eq:logTimeE} $$ \ULogTimeE[sub] [sup] [ext] = ULogTime-Easy_{SUB}^{SUP} EXT $$ \ULogTimeH[sub] [sup] [ext] = ULogTime-Hard_{SUB}^{SUP} EXT $$ \ULogTimeC[sub] [sup] [ext] = ULogTime-Complete_{SUB}^{SUP} EXT $$ $$ \ULogTimeC[sub] [sup] [ext] = ULogTime-Complete_{SUB}^{SUP} EXT $$ \ULogTime-Complete_{SUB}^{SUP} EXT$ 

```
\QPTime, ...
                         \verb|\QPTimeE[sub][sup][ext]| = \mathrm{QPTIME\text{-}EASY}^{SUP}_{SUB}\mathrm{EXT}|
                         \verb|\QPTimeH[sub][sup][ext]| = \mathrm{QPTIME-HARD}^{SUP}_{SUB}\mathrm{EXT}|
                         \QPTimeC[sub][sup][ext] = QPTIME-COMPLETE_{SUB}^{SUP}EXT
                       • \NQPTime[sub][sup][ext] = NQPTIME_{SUB}^{SUP}EXT
                          \NQPTimeE[sub][sup][ext] = NQPTIME-EASY_{SUP}^{SUP}EXT
                         \NQPTimeH[sub][sup][ext] = NQPTIME-HARD_{SUB}^{SUP}EXT
                         \NQPTimeC[sub][sup][ext] = NQPTIME-COMPLETE_{SUP}^{SUP}EXT
                       • \UQPTime[sub][sup][ext] = UQPTIME_{SUB}^{SUP}EXT
                          \verb|VQPTimeE[sub][sup][ext]| = UQPTIME-EASY_{SUB}^{SUP}EXT|
                          \verb|VQPTimeH[sub][sup][ext]| = \mathrm{UQPTIME-HARD}^{SUP}_{SUB}\mathrm{EXT}
                          \UQPTimeC[sub][sup][ext] = UQPTIME-COMPLETE_{SUB}^{SUP}EXT
                       • AQPTime[sub][sup][ext] = AQPTIME_{SUB}^{SUP}EXT
                         \verb|\AQPTimeE[sub][sup][ext]| = AQPTIME-EASY_{SUB}^{SUP}EXT|
                         \texttt{AQPTimeH[sub][sup][ext]} = \mathrm{AQPTIME\text{-}HARD}^{\mathrm{SUP}}_{\mathrm{SUB}}\mathrm{EXT}
                         \verb| AQPTimeC[sub][sup][ext] = AQPTIME-COMPLETE_{SUB}^{SUP}EXT
                   1017 \defcomcls{QPTime}
\QPSpace, ...
                       • \QPSpace[sub][sup][ext] = QPSPACE_{SUB}^{SUP}EXT
                         \verb|\QPSpaceE[sub][sup][ext]| = QPSPACE-EASY_{SUB}^{SUP}EXT|
                          \verb|QPSpaceH[sub][sup][ext]| = QPSPACE-HARD_{SUB}^{SUP}EXT|
                          \QPSpaceC[sub][sup][ext] = QPSPACE-COMPLETE_{SUB}^{SUP}EXT
                       • \NQPSpace[sub][sup][ext] = NQPSPACE_{SUB}^{SUP}EXT
                         \verb|NQPSpaceE[sub][sup][ext]| = NQPSpace-easy_{sub}^{SUP}EXT|
                         \verb|\NQPSpaceH[sub][sup][ext]| = NQPSPACE-HARD_{SUB}^{SUP}EXT
                         \verb|NQPSpaceC[sub][sup][ext]| = NQPSPACE-COMPLETE_{SUB}^{SUP}EXT|
                       • \UQPSpace[sub][sup][ext] = UQPSPACE_{SUB}^{SUP}EXT
                         \label{eq:uqpspace} $$ UQPSpaceE[sub][sup][ext] = UQPSpace-EASY_{SUB}^{SUP}EXT $$
                         \UQPSpaceH[sub][sup][ext] = UQPSPACE-HARD_{SUB}^{SUP}EXT
                          \verb|VQPSpaceC[sub][sup][ext]| = UQPSPACE-COMPLETE_{SUB}^{SUP}EXT
                       • \AQPSpace[sub][sup][ext] = AQPSPACE_SUP_EXT
                          \verb|AQPSpaceE[sub][sup][ext]| = AQPSPACE-EASY_{SUB}^{SUP}EXT|
                          AQPSpaceH[sub][sup][ext] = AQPSPACE-HARD_{SUB}^{SUP}EXT
                         \verb|\AQPSpaceC[sub][sup][ext]| = AQPSPACE-COMPLETE_{SUB}^{SUP}EXT
                   1018 \defcomcls{QPSpace}
                       • \ExpTime[sub][sup][ext] = EXPTIME_{SUB}^{SUP}EXT
\ExpTime, ...
                         \verb|\ExpTimeE[sub][sup][ext]| = EXPTIME-EASY_{SUB}^{SUP}EXT
                          \verb|\ExpTimeH[sub][sup][ext]| = EXPTIME-HARD_{SUB}^{SUP}EXT|
                         \ExpTimeC[sub][sup][ext] = EXPTIME-COMPLETE_{SUB}^{SUP}EXT
                       • \NExpTime[sub][sup][ext] = NEXPTIME_{SUB}^{SUP}EXT
                          \verb|\NExpTimeE[sub][sup][ext]| = NEXPTIME-EASY_{SUB}^{SUP}EXT
                          \NExpTimeH[sub][sup][ext] = NEXPTIME-HARD_{SUB}^{SUP}EXT
                         \NExpTimeC[sub][sup][ext] = NEXPTIME-COMPLETE_{SUB}^{SUP}EXT
                       • \UExpTime[sub][sup][ext] = UEXpTIME_{SUB}^{SUP}EXT
                         \verb| UExpTimeE[sub][sup][ext] = UEXPTIME-EASY_{SUB}^{SUP}EXT
                         \verb|\UExpTimeH[sub][sup][ext]| = UEXPTIME-HARD^{SUP}_{SUB}EXT
                         \verb|\UExpTimeC[sub][sup][ext]| = UEXPTIME-COMPLETE_{SUB}^{SUP}EXT
                        \bullet \ \texttt{\ AExpTime[sub][sup][ext]} = AExpTime[{}^{SUP}_{SUB}EXT \\
                          \texttt{AExpTimeE[sub][sup][ext]} = \text{AEXpTIME-EASY}^{\text{SUP}}_{\text{SUB}} \text{EXT}
                          \verb|\AExpTimeH[sub][sup][ext]| = AEXPTIME-HARD_{SUB}^{SUP}EXT
                         \verb|\AExpTimeC[sub][sup][ext]| = AEXPTIME-COMPLETE^{SUP}_{SUB}EXT
                   1019 \defcomcls{ExpTime}
```

•  $APSpace[sub][sup][ext] = APSPACE_{SUB}^{SUP}EXT$ 

1016 \defcomcls{PSpace}

 $\label{eq:apspace} $$ \operatorname{Sup}[\operatorname{sup}][\operatorname{ext}] = \operatorname{APSPACE-EASY}^{\operatorname{SUP}}_{\operatorname{SUB}} = \operatorname{APSPACE-HARD}^{\operatorname{SUP}}_{\operatorname{SUB}} = \operatorname{APSPACE-HARD}^{\operatorname{SUP}}_{\operatorname{SUB}} = \operatorname{APSPACE-COMPLETE}^{\operatorname{SUP}}_{\operatorname{SUB}} = \operatorname{APSPACE-COMPLETE}^{\operatorname{SUP}}_{\operatorname{SUP}} = \operatorname{APSPACE$ 

```
\ExpSpace, ...
                 • \ExpSpace[sub][sup][ext] = EXPSPACE_SUB_EXT
                  \verb|\ExpSpaceE[sub][sup][ext]| = EXPSPACE-EASY_{SUB}^{SUP}EXT
                   \verb|\ExpSpaceH[sub][sup][ext]| = ExpSpace-Hard_{SUB}^{SUP}EXT
                  \verb|\ExpSpaceC[sub][sup][ext]| = EXPSPACE-COMPLETE_{SUB}^{SUP}EXT
                 • \NExpSpace[sub][sup][ext] = NEXPSPACE_{SUB}^{SUP}EXT
                  \verb|NExpSpaceE[sub][sup][ext]| = NEXPSPACE-EASY_{SUB}^{SUP}EXT
                   \verb|\NExpSpaceH[sub][sup][ext]| = NEXPSPACE-HARD_{SUB}^{SUP}EXT
                   \NExpSpaceC[sub][sup][ext] = NEXPSPACE-COMPLETE_{SUB}^{SUP}EXT
                 • \UExpSpace[sub][sup][ext] = UExpSpace_{SUB}^{SUP}Ext
                   \UExpSpaceE[sub][sup][ext] = UEXpSpace-EASY_{SUB}^{SUP}EXT
                  \UExpSpaceH[sub][sup][ext] = UExpSpace-Hard_{Sup}^{SUP}EXT
                  \UExpSpaceC[sub][sup][ext] = UExpSpace-CompleteSup_Ext
                 • \triangle ExpSpace[sub][sup][ext] = AExpSpace_{SUB}^{SUP}EXT
                   AExpSpaceE[sub][sup][ext] = AExpSpace-Easy_{SUB}^{SUP}EXT
                   \verb|\AExpSpaceH[sub][sup][ext]| = AEXPSPACE-HARD_{SUB}^{SUP}EXT
                   \verb|\AExpSpaceC[sub][sup][ext]| = AEXPSPACE-COMPLETE^{SUP}_{SUB}EXT
              1020 \defcomcls{ExpSpace}
              \PH
                 1022 \defcomhrc{PH}
              1023 \fi
              1028 \ifgam@
              \SATG, ...
              1030 %% Satisfiability Games
              1031 \cmdtxtoparname{SATG}[Sat]
              1033 %% Validity Games
              1034 \cmdtxtoparname{VALG}[Val]
              1035
              1036 %% Evaluation Games
              1037 \cmdtxtoparname{EVLG}[Ev1]
              1039 %% Synthesis Games
              1040 \cmdtxtoparname{SYNG}[Syn]
              1042 %% Model-Checking Games
              1043 \cmdtxtoparname{MCG} [MC]
              1045 %% Ehrenfeucht-Fraisse Games
              1046 \cmdtxtoparname{EFG}[EF]
              \PlrSym, \OppSym
              1048 \mbox{ } \mbox{newcommand{\plrsym}{E}}
              1049 \cmdmthsym{Plr}[\plrsym]
              1050 \mbox{ \newcommand{\nopsym}{A}}
              1051 \cmdmthsym{Opp} [\oppsym]
\ArenaName, ... ...
              1052 \newcommand{\arenaname}{A}
              1053 \usrmthlatupp{Arena}{Name}{name}[\arenaname]
```

```
\PosSet, ... ...
                   1054 \mbox{ \newcommand{\possym}{v}}
                   1055 \mbox{ \newcommand{\posset}{Ps}}
                   1056 \verb|\cmdmthsetext{Pos}| [\verb|\possym|]|
                   1057 \verb|\cmdmthsymelm{ipos}[\possym_{I}]|
                   1058 \cmdmthsymelm{fpos}[\possym_{F}]
                   1059 \cmdmthset{PPos}[\posset_{\PlrSym}]
                   1060 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
                   1061 \cmdmthset{OPos}[\posset_{\OppSym}]
                   1062 \mbox{ \cmdmthsymelm{opos}[\possym_{\cmb}]}
          \PlrFun
                   1063 \mbox{ \newcommand{\plrfun}{pl}}
                   1064 \cmdmthfun{plr}[\plrfun]
          \MovRel
                   1065 \newcommand{\movrel}{Mv}
                   1066 \cmdmthrel{Mov}[\movrel]
   \GameName, ...
                   1067 \newcommand{\gamename}{\Game}
                   1068 \usrmthlatupp{Game}{Name}{name}[\gamename]
          \WinSet ...
                   1069 \mbox{ \newcommand{\winset}{Wn}}
                   1070 \cmdmthset{Win}[\winset]
\ObsSet, \obsFun ...
                   1071 \newcommand{\obsset}{Ob}
                   1072 \cmdmthset{Obs}[\obsset]
                   1073 \cmdmthfun{obs}
                   \PthSet, \pthFun
                   1075 \mbox{ \newcommand{\pthsym}{\pi}}
                   1076 \newcommand{\pthset}{Pth}
                   1077 \cmdmthsetext{Pth}[\pthset][\pthsym]
                   1078 \cmdmthfun{pth}
     \HstSet, ... ...
                   1079 \newcommand{\hstsym}{\rho}
                   1080 \newcommand{\hstset}{Hst}
                   1081 \cmdmthsetext{Hst}[\hstset][\hstsym]
                   1082 \cmdmthset{PHst}[\hstset_{\PlrSym}]
                   1083 \verb|\cmdmthsymelm{phst}[\hstsym_{\protect}]|
                   1084 \cmdmthset{OHst}[\hstset_{\OppSym}]
                   1085 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
                   1086 \cmdmthfun{hst}
\PlaySet,\playFun
                   1087 \newcommand{\playsym}{\pi}
                   1088 \newcommand{\playset}{Play}
                   1089 \cmdmthsetext{Play}[\playset][\playsym]
                   1090 \cmdmthfun{play}
     \StrSet, ...
                   1091 \newcommand{\strsym}{\sigma}
                   1092 \newcommand{\strset}{Str}
                   1093 \cmdmthsetext{Str}[\strset][\strsym]
                   1094 \cmdmthset{PStr}[\strset_{\PlrSym}]
                   1095 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
                   1096 \cmdmthset{OStr}[\strset_{\OppSym}]
                   1097 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]
```

```
\PrfSet, \prfFun
                 1098 \verb|\newcommand{\prfsym}{\xi}
                 1099 \newcommand{\prfset}{Prf}
                 1100 \cmdmthsetext{Prf}[\prfset][\prfsym]
\preFun, \sucFun
                 1101 \newcommand{\prefun}{pre}
                 1102 \cmdmthoargfun{pre}[\prefun]
                 1103 \newcommand{\sucfun}{suc}
                1104 \cmdmthoargfun{suc}[\sucfun]
\entFun, \escFun
                1105 \newcommand{\entfun}{ent}
                 1106 \cmdmthoargfun{ent}[\entfun]
                 1107 \newcommand{\escfun}{esc}
                 1108 \cmdmthoargfun{esc}[\escfun]
\intFun, \outFun ...
                 1109 \newcommand{\intfun}{int}
                 1110 \cmdmthoargfun{int}[\intfun]
                 1111 \newcommand{\outfun}{out}
                 1112 \cmdmthoargfun{out}[\outfun]
\atrFun, \rchFun ...
                1113 \newcommand{\atrfun}{atr}
                1114 \cmdmthoargfun{atr}[\atrfun]
                 1115 \newcommand{\rchfun}{rch}
                1116 \cmdmthoargfun{rch}[\rchfun]
       \liftFun ...
                 1117 \newcommand{\liftfun}{lift}
                 1118 \cmdmthoargfun{lift}[\liftfun]
        \solFun
                 1119 \newcommand{\solfun}{sol}
                 1120 \cmdmthoargfun{sol}[\solfun]
                 \BG, ... ...
                1122 %% Buchi Games
                1123 \cmdtxtoparname{BG}
                1125 %% Co-Buchi Games
                1126 \cmdtxtoparname{CG}
                1127
                1128 %% Parity Games
                1129 \cmdtxtoparname{PG}
                 1131 %% Rabin Games
                1132 \cmdtxtoparname{RG}
                1134 %% Streett Games
                1135 \cmdtxtoparname{SG}
                 1137 %% Muller Games
                 1138 \cmdtxtoparname{MG}
                 \EvnSym, \OddSym
                 1140 \mbox{ } \mbox{newcommand{\evnsym}{0}}
                 1141 \cmdmthsym{Evn} [\evnsym]
                 1142 \mbox{newcommand{\oddsym}{1}}
                 1143 \cmdmthsym{Odd} [\oddsym]
```

```
\PrtSet, \prtFun ...
          1144 \newcommand{\prtsym}{p}
          1145 \mbox{ } \mbox{prtset}{Pr}
          1146 \cmdmthsetext{Prt}[\prtset][\prtsym]
          1147 \cmdmthfun{prt}[pr]
          \EG, ... ...
          1150 %% Energy Games
          1151 \cmdtxtoparname{EG}
          1153 %% Mean-Payoff Games
          1154 \cmdtxtoparname{MPG}
          1156 %% Discounted-Payoff Games
          1157 \cmdtxtoparname{DPG}
          \MaxSym, \MinSym
          1159 \newcommand{\maxsym}{\oplus}
          1160 \cmdmthsym{Max}[\maxsym]
          1161 \newcommand{\minsym}{\boxminus}
          1162 \verb|\cmdmthsym{Min}| [\verb|\minsym|]
\WghSet, \wghFun
          1163 \newcommand{\wghsym}{w}
          1164 \mbox{ \newcommand{\wghset}{Wg}}
          1165 \cmdmthsetext{Wgh} [\wghset] [\wghsym]
          1166 \cmdmthfun{wgh} [wg]
          1168 \fi
          1173 \iflog@
          \BF, \QBF, ... ...
          1175 % Boolean Formulae
          1176 \cmdtxtoparname{BF}
          1177
          1178 % Quantified Boolean Formulae
          1179 \DeclareRobustCommand{\QBF}
          1180 \{\{\text{xtname}\{Q\}\}\}\}
          1181 \DeclareRobustCommand{\EBF}
          1182 {\ensuremath{\exists}\BF}
          1183 \DeclareRobustCommand{\UBF}
          1184 {\ensuremath{\forall}\BF}
          \LogSig, ... ...
          1186 \mbox{ } \mbox{logsig}{L}
          1187 \usrmthlatupp{Log}{Sig}{sig}[\logsig]
```

```
\Tt, \Ff ...
                                              1188 \mbox{ \newcommand{\ttsym}{\top}}
                                              1189 \operatorname{Tt}{sym}[\operatorname{ttsym}]
                                              1190 \verb|\newcommand{\ffsym}{\bot}|
                                              1191 \usrmth{Ff}{}{sym}[\ffsym]
          \LNeg, \LNot
                                              1192 \newcommand{\lnegsym}{\neg}
                                              1193 \usrmth{LNeg}{}{luop}[\lnegsym]
                                              1194 \newcommand{\lnotsym}{\sim}
                                              1195 \usrmth{LNot}{}{luop}[\lnotsym]
          \LCon, \LDis ...
                                              1196 \newcommand{\lconsym}{\land}
                                              1197 \usrmth{LCon}{}{lbop}[\lconsym]
                                              1198 \newcommand{\ldissym}{\lor}
                                              1199 \usrmth{LDis}{}{lbop}[\ldissym]
          \LImp, \LCoi
                                              1200 \newcommand{\limpsym}{\rightarrow}
                                              1201 \usrmth{LImp}{}{lbop}[\limpsym]
                                              1202 \newcommand{\lcoisym}{\leftrightarrow}
                                              1203 \usrmth{LCoi}{}{lbop}[\lcoisym]
          \LExs, \LA11 ...
                                              1204 \verb|\newcommand{\lexssym}{\ensuremath{}} 
                                              1205 \usrmth{LExs}{}{luop}[\lexssym]
                                              1206 \mbox{ } {\mbox{command{\allsym}{\forall}}
                                              1207 \usrmth{LAll}{}{luop}[\lallsym]
             \APSet, ... ...
                                              1208 \mbox{ newcommand{\apsym}{p}}
                                              1209 \mbox{ \newcommand{\apset}{AP}}
                                              1210 \cmdmthsetext{AP}[\apset][\apsym]
                                              1211 \cmdmthfun{ap}\usrmth{ap}{}{argfun}
                               \sub ...
                                              1212 \usrmth{sub}{}{argfun}
\Cnt, \Qnt, \Sym ...
                                              1213 \usrmth{Cnt}{}{sym}[C]
                                              1214 \usrmth{Qnt}{}{sym}[Q]
                                              1215 \usrmth{Sym}{}{sym}[\odot]
                \QAE, \QEA ...
                                              1216 \verb|\armth{QAE}{{}} sym} [\forall\exists]
                                              1217 \usrmth{QEA}{}{sym}[\exists\forall]
          \QntSet, ... ...
                                              1218 \newcommand{\qntsym}{\wp}
                                              1219 \mbox{ } \mbox{qntset}{Qn}
                                              1220 \verb|\cmdmthsetext{Qnt}| [\qntset] [\qntsym]|
        \free, \bound ...
                                              1221 \usrmth{free}{}{argfun}
                                              1222 \mbox{ \normalfooth bound}{{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfooth}{\normalfo
                \dep, \alt ...
                                              1223 \usrmth{dep}{}{argfun}
                                              1224 \usrmth{alt}{}{argfun}
```

```
\cnf, \dnf, ... ...
               1225 \cmdtxtabr{cnf}
               1226 \cmdtxtabr{dnf}
               1227 \cmdtxtabr{pnf}
               1228 \cmdtxtabr{nnf}
               \LogStr, ... ...
               1230 \mbox{ } \mbox{logstr}{L}
               1231 \usrmthlatupp{Log}{Str}{str}[\logstr]
  \ValSet, ... ...
               1232 \newcommand{\valsym}{\xi}
               1233 \newcommand{\valset}{Val}
               1234 \cmdmthsetext{Val}[\valset][\valsym]
  \AsgSet, ... ...
               1235 \newcommand{\asgsym}{\chi}
               1236 \newcommand{\asgset}{Asg}
               1237 \cmdmthsetext{Asg}[\asgset][\asgsym]
               \FOL, ... ...
               1239 % First-Order Logic
               1240 \cmdtxtoparname{FOL} [Fol]
               1241 \cmdtxtoparname{F0}[F0]
               1242
               1243 % Monadic First-Order Logic
               1244 \DeclareRobustCommand{\MFOL}
               1245 \quad \{\{\text{txtname}\{M\}\}\}\}
               1246 \DeclareRobustCommand{\MFO}
               1247 \{\{\text{txtname}\{M\}\}\}\}
               \VarSig, ... ...
               1249 \newcommand{\varsig}{V}
               1250 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
               1251 \newcommand{\varsym}{x}
               1252 \mbox{ \newcommand{\varset}{Vr}}
               1253 \cmdmthsetext{Var}[\varset][\varsym]
               1254 \usrmth{var}{}{argfun}[vr]
               1255 \cmdmthfun{dim}[dm]\usrmth{dim}{}{argfun}[dm]
  \ConSig, ... ...
               1256 \newcommand{\consig}{C}
               1257 \usrmthlatupp{Con}{Sig}{sig}[\consig]
               1258 \mbox{ \newcommand{\consym}{c}}
               1259 \mbox{ } \mbox{conset}{Cn}
               1260 \cmdmthsetext{Con}[\conset][\consym]
               1261 \usrmth{con}{}{argfun}[cn]
  \FunSig, ... ...
               1262 \newcommand{\funsig}{F}
               1263 \verb|\usrmth|| a tupp{Fun}{Sig}{sig}[\funsig]
               1264 \mbox{ \newcommand{\funsym}{f}}
               1265 \mbox{ } \mbox{newcommand{\funset}{Fn}}
               1266 \cmdmthsetext{Fun}[\funset][\funsym]
               1267 \usrmth{fun}{}{argfun}[fn]
               1268 \cmdmthfun{art}[ar]\usrmth{art}{}{argfun}[ar]
```

```
\TerSig, ... ...
             1269 \newcommand{\tersig}{T}
             1270 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
             1271 \newcommand{\tersym}{t}
             1272 \newcommand{\terset}{Tr}
             1273 \cmdmthsetext{Ter}[\terset][\tersym]
             1274 \usrmth{ter}{}{argfun}
\RelSig, ...
             1275 \mbox{ } \mbox{relsig}{R}
             1276 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
             1277 \newcommand{\relsym}{r}
             1278 \mbox{ } \mbox{newcommand{\relset}{R1}}
              1279 \cmdmthsetext{Rel}[\relset][\relsym]
              1280 \usrmth{rel}{}{argfun}[rl]
        \skm ...
             1281 \usrmth{skm}{}{argfun}
             \ConStr, ... ...
             1283 \newcommand{\constr}{C}
             1284 \usrmthlatupp{Con}{Str}{str}[\constr]
\FunStr, ... ...
             1285 \newcommand{\funstr}{F}
             1286 \usrmthlatupp{Fun}{Str}{str}[\funstr]
\TerStr, ... ...
             1287 \newcommand{\terstr}{T}
             1288 \usrmthlatupp{Ter}{Str}{str}[\terstr]
\RelStr, ... ...
             1289 \newcommand{\relstr}{R}
             1290 \usrmthlatupp{Rel}{Str}{str}[\relstr]
             \DF, \IF, ... ...
             1292 % Dependence-Friendly Logic
              1293 \cmdtxtoparname{DF}
             1294
             1295 % Independence-Friendly Logic
             1296 \cmdtxtoparname{IF}
             1298 % Dependence/Independence-Friendly Logic
             1299 \cmdtxtoparname{DIF}
              1301 % Dependence Logic
              1302 \cmdtxtoparname{DL}
              1304 % Team Logic
              1305 \cmdtxtoparname{TL}
              1307 \% Alternating Dependence-Friendly Logic
              1308 \cmdtxtoparname{ADF}
              1310 % Alternating Independence-Friendly Logic
              1311 \cmdtxtoparname{AIF}
              1312
              1313 % Alternating Dependence/Independence-Friendly Logic
              1314 \cmdtxtoparname{ADIF}
```

```
\LEExs, \LAA11 ...
            1316 \newcommand{\leexssym}{\Sigma}
            1317 \usrmth{LEExs}{}{luop}[\leexssym]
            1318 \newcommand{\laallsym}{\Pi}
            1319 \usrmth{LAAll}{}{luop}[\laallsym]
            \SOL, ... ...
            1322 % Second-Order Logic
            1323 \cmdtxtoparname{SOL}[Sol]
            1324 \cmdtxtoparname{SO}
            1326\,\% Weak Second-Order Logic
            1327 \DeclareRobustCommand{\WSOL}
                 {{\txtname{W}}\SOL}
            1329 \DeclareRobustCommand{\WSO}
            1330
                 {{\txtname{W}}\SO}
            1332 % coWeak Second-Order Logic
            1333 \DeclareRobustCommand{\coWSOL}
            1334 \{\{\text{txtname}\{\text{coW}\}\}\}
            1335 \DeclareRobustCommand{\coWSO}
            1336 \{\{\text{txtname}\{\text{coW}\}\}\
            1337
            1338 % Monadic Second-Order Logic
            1339 \DeclareRobustCommand{\MSOL}
            1340 \quad \{\{\text{txtname}\{M\}\}\}\
            1341 \DeclareRobustCommand{\MSO}
                 {{\txtname{M}}\SO}
            1344 % Weak Monadic Second-Order Logic
            1345 \DeclareRobustCommand{\WMSOL}
                {{\txtname{W}}\MSOL}
            1347 \DeclareRobustCommand{\WMSO}
                {{\txtname{W}}\MSO}
            1348
            1349
            1350 % coWeak Monadic Second-Order Logic
            1351 \DeclareRobustCommand{\coWMSOL}
                 {{\txtname{coW}}\MSOL}
            1353 \DeclareRobustCommand{\coWMSO}
                {{\txtname{coW}}\MSO}
            \FVarSet, ... ...
            1356 \newcommand{\fvarsym}{x}
            1357 \newcommand{\fvarset}{FVr}
            1358 \cmdmthsetext{FVar}[\fvarset][\fvarsym]
\SVarSet, ... ...
            1359 \newcommand{\svarsym}{X}
            1360 \newcommand{\svarset}{SVr}
            1361 \verb|\cmdmthsetext{SVar}| [\verb|\svarset|] [\| svarsym]|
```

```
\TL, \PL, ... ...
             1364 % Tree Logic
             1365 \cmdtxtoparname{TL}
             1367 % Weak Tree Logic
             1368 \DeclareRobustCommand{\WTL}
                 {\{\text{txtname}\{W\}}\TL\}
             1369
             1370
             1371 % coWeak Tree Logic
             1372 \DeclareRobustCommand{\coWTL}
                  {{\txtname{coW}}\TL}
             1375 % Monadic Tree Logic
             1376 \DeclareRobustCommand{\MTL}
             1377
                  {\{\text{txtname}\{M\}}\TL\}
             1378
             1379 % Weak Monadic Tree Logic
             1380 \DeclareRobustCommand{\WMTL}
                  {{\txtname{W}}\MTL}
             1381
             1382
             1383 % coWeak Monadic Tree Logic
             1384 \DeclareRobustCommand{\coWMTL}
                  {{\txtname{coW}}\MTL}
             1386
             1387 % Path Logic
             1388 \cmdtxtoparname{PL}
             1389
             1390\,\% Weak Path Logic
             1391 \DeclareRobustCommand{\WPL}
             1392 \{\{\text{txtname}\{W\}\}\}\}
             1394 % coWeak Path Logic
             1395 \DeclareRobustCommand{\coWPL}
                 {\{\texttxtname\{coW\}}\PL\}
             1398 % Monadic Path Logic
             1399 \DeclareRobustCommand{\MPL}
             1400 \quad \{\{\texttt{\txtname}\{\texttt{M}\}\}\texttt{\tPL}\}
             1402 % Weak Monadic Path Logic
             1403 \DeclareRobustCommand{\WMPL}
                 {\{\text{txtname}\{W\}}\MPL\}
             1404
             1406 % coWeak Monadic Path Logic
             1407 \DeclareRobustCommand{\coWMPL}
                 {{\txtname{coW}}\MPL}
             \ML, \GML, ... ...
             1412 % Modal Logic
             1413 \cmdtxtoparname{ML}
             1415 % Graded Modal Logic
```

```
1416 \DeclareRobustCommand{\GML}
                 1417
                      {\{\text{txtname}\{G\}\}\setminus ML\}}
                1418
                1419 % Quantified Modal Logic
                1420 \DeclareRobustCommand{\QML}
                1421 \{\{\text{txtname}\{Q\}\}\}ML\}
                1422 \DeclareRobustCommand{\EML}
                1423 {\ensuremath{\exists}\ML}
                 1424 \DeclareRobustCommand{\UML}
                     {\ensuremath{\forall}\ML}
                 \Opr ...
                 1427 \usrmth{Opr}{}{sym}[Op]
   \DMod, \BMod
                 1428 \usrmth{DMod}{}{sym}[\Diamond]
                 1429 \operatorname{Mod}{{sym}[Box]}
     \Exs, \All ...
                1430 \DeclareRobustCommand{\Exs}[1]
                     {\mth{\defval{\argmid{\langle}{#1}{\rangle}}}}
                 1432 \DeclareRobustCommand{All}[1]
                     {\mth{\defval{\argmid{\left[}{#1}{\right]}}{\BMod}}}
                 \KrpStr, ... ...
                 1435 \mbox{ \newcommand{\krpstr}{K}}
                 1436 \verb|\usrmth|| atupp{Krp}{Str}{str}[\krpstr]
   \WrlSet, ... ...
                1437 \newcommand{\wrlsym}{w}
                1438 \newcommand{\wrlset}{W}
                 1439 \cmdmthsetext{Wrl} [\wrlset] [\wrlsym]
                 1440 \cmdmthsymelm{iwrl}[\wrlsym_{I}]
\AccRel, \TrnRel ...
                 1441 \newcommand{\accsym}{R}
                 1442 \cmdmthrel{Acc}[\accsym]
                1443 \cmdmthrel{Trn}[\accsym]
        \labFun ...
                 1444 \newcommand{\labsym}{\labsym}{\labsym}
                1445 \cmdmthfun{lab}[\labsym]
\PthSet, \pthFun ...
                1446 \providecommand{\pthsym}{\pi}
                 1447 \providecommand{\pthset}{Pth}
                 1448 \verb|\cmdmthsetext{Pth}| [\verb|\pthset|]| [\verb|\pthsym|]|
                 1449 \cmdmthfun{pth}
                 \MC, \GMC, ... ...
                1451 % Mu Calculus
                1452 \verb|\cmdtxtoparname{MC}| [\ensuremath{\mu}-Calculus]|
                 1453
                 1454 % Graded Mu Calculus
                 1455 \DeclareRobustCommand{\GMC}
                 1456
                      {\{\text{txtname}\{G\}\}\setminus MC\}}
                 1457
```

```
1458 % Quantified Mu Calculus
              1459 \DeclareRobustCommand{\QMC}
              1460 \{\{\text{txtname}\{Q\}\}\}\
              1461 \DeclareRobustCommand{\EMC}
              1462 {\ensuremath{\exists}\MC}
              1463 \DeclareRobustCommand{\UMC}
                  {\ensuremath{\forall}\MC}
              1464
              1466 % Alternation-Free Mu Calculus
              1467 \DeclareRobustCommand{\AFMC}
                   {{\txtname{AF}}\MC}
              1470 % Alternation-Free Graded Mu Calculus
              1471 \DeclareRobustCommand{\AFGMC}
                   {{\txtname{AF}}\GMC}
              1474 % Quantified Alternation-Free Mu Calculus
              1475 \DeclareRobustCommand{\QAFMC}
                   {\{\text{txtname}\{Q\}\}\setminus AFMC\}}
              1477 \DeclareRobustCommand{\EAFMC}
                   {\ensuremath{\exists}\AFMC}
              1479 \DeclareRobustCommand{\UAFMC}
              1480
                   {\ensuremath{\forall}\AFMC}
              1481
              \PTL, \LTL, ...
              1485 % Propositional Temporal Logic
              1486 \cmdtxtoparname{PTL}
              1487
              1488 % Quantified Propositional Temporal Logic
              1489 \DeclareRobustCommand{\QPTL}
                   {\{\text{txtname}\{Q\}\}\PTL}
              1491 \DeclareRobustCommand{\EPTL}
                   {\ensuremath{\exists}\PTL}
              1493 \DeclareRobustCommand{\UPTL}
              1494 {\ensuremath{\forall}\PTL}
              1496 % Linear Temporal Logic
              1497 \cmdtxtoparname{LTL}
              1499 % Quantified Linear Temporal Logic
              1500 \DeclareRobustCommand{\QLTL}
                   {\{\text{txtname}\{Q\}\}\setminus LTL\}}
              1502 \DeclareRobustCommand{\ELTL}
              1503 {\ensuremath{\exists}\LTL}
              1504 \DeclareRobustCommand{\ULTL}
                   {\ensuremath{\forall}\LTL}
              \X, ... ...
              1507 \usrmth{X}{}{sym}[X\,]
              1508 \usrmth{F}{}{sym}[F\,]
              1509 \usrmth{G}{}{sym}[G\,]
              1510 \usrmth{U}{}{sym}[\,U\,]
              1511 \usrmth{R}{}{sym}[\,R\,]
```

```
\Y, ... ...
                1512 \usrmth{Y}{}{sym}[G\,]
                1513 \mbox{usrmth}{P}{}{sym}[P\,]\let\SavePilcrow\P
                1514 \usrmth{H}{}{sym}[H\,]\let\SaveDoubleAcute\H
                1515 \usrmth{S}{}{sym}[\,S\,]\let\SaveSectionSymbol\S
                1516 \usrmth{B}{}{sym}[\,B\,]
                \PDL, \CTL, ... ...
                1520 % Propositional Dynamic Logic
                1521 \cmdtxtoparname{PDL}
                1522
                1523 % Computation Tree Logic
                1524 \cmdtxtoparname{CTL}
                1526 % Weak Computation Tree Logic
                1527 \DeclareRobustCommand{\WCTL}
                     {{\txtname{W}}\CTL}
                1530 % Quantified Computation Tree Logic
                1531 \verb|\DeclareRobustCommand{\QCTL}|
                     {\{\text{txtname}\{Q\}\}\CTL\}}
                1533 \DeclareRobustCommand{\ECTL}
                    {\ensuremath{\exists}\CTL}
                1535 \DeclareRobustCommand{\UCTL}
                     {\ensuremath{\forall}\CTL}
                1536
                1538 % Improved Computation Tree Logic
                1539 \cmdtxtoparname{CTLP}[CTL$^{+}$]
                1540
                1541 % Weak Improved Computation Tree Logic
                1542 \DeclareRobustCommand{\WCTLP}
                     {\{\text{txtname}\{W\}}\CTLP\}
                1543
                1544
                1545 % Quantified Improved Computation Tree Logic
                1546 \DeclareRobustCommand{\QCTLP}
                1547 {\{\text{txtname}\{Q\}\}\}\
                1548 \DeclareRobustCommand{\ECTLP}
                1549 {\ensuremath{\exists}\CTLP}
                1550 \DeclareRobustCommand{\UCTLP}
                    {\ensuremath{\forall}\CTLP}
                1553 % Full Computation Tree Logic
                1554 \cmdtxtoparname{CTLS}[CTL*]
                1556\ \% Weak Full Computation Tree Logic
                1557 \DeclareRobustCommand{\WCTLS}
                     {{\txtname{W}}\CTLS}
                1558
                1560 % Quantified Full Computation Tree Logic
                1561 \DeclareRobustCommand{\QCTLS}
                1562 {\{\text{Xtname}\{Q\}\}\}
                1563 \DeclareRobustCommand{\ECTLS}
                1564 {\ensuremath{\exists}\CTLS}
                1565 \DeclareRobustCommand{\UCTLS}
                     {\ensuremath{\forall}\CTLS}
```

```
\E, \A ...
            1568 \operatorname{Lsrmth}{E}{sym}
            1569 \usrmth{A}{}{sym}
            \ATL, ... ...
            1572 % Alternating Temporal Logic
            1573 \cmdtxtoparname{ATL}
            1574
            1575 % Weak Alternating Tree Logic
            1576 \DeclareRobustCommand{\WATL}
                 {\{\txtname{W}}\ATL\}
            1577
            1578
            1579 % Quantified Alternating Temporal Logic
            1580 \DeclareRobustCommand{\QATL}
                 {\{\text{Xtname}_{Q}\}}\ATL\}
            1582 \DeclareRobustCommand{\EATL}
            1583 {\ensuremath{\exists}\ATL}
            1584 \verb|\DeclareRobustCommand{\UATL}|
                {\ensuremath{\forall}\ATL}
            1585
            1586
            1587 % Improved Alternating Temporal Logic
            1588 \cmdtxtoparname{ATLP}[ATL$^{+}$]
            1590 % Weak Improved Alternating Tree Logic
            1591 \DeclareRobustCommand{\WATLP}
            1592
                 {{\txtname{W}}\ATLP}
            1594 % Quantified Improved Alternating Temporal Logic
            1595 \DeclareRobustCommand{\QATLP}
            1596 \{\{\text{txtname}\{Q\}\}\} \land \text{TLP}\}
            1597 \DeclareRobustCommand{\EATLP}
            1598 {\ensuremath{\exists}\ATLP}
            1599 \DeclareRobustCommand{\UATLP}
                 {\ensuremath{\forall}\ATLP}
            1602 % Full Alternating Temporal Logic
            1603 \cmdtxtoparname{ATLS}[ATL*]
            1605 % Weak Full Alternating Tree Logic
            1606 \DeclareRobustCommand{\WATLS}
                {\{\text{txtname}\{W\}}\ATLS\}
            1608
            1609 % Quantified Full Alternating Temporal Logic
            1610 \DeclareRobustCommand{\QATLS}
                 {\{\text{txtname}\{Q\}\}\setminus ATLS\}}
            1612 \DeclareRobustCommand{\EATLS}
                {\ensuremath{\exists}\ATLS}
            1614 \DeclareRobustCommand{\UATLS}
            1615 {\ensuremath{\forall}\ATLS}
            \EExs, \AAll ...
            1617 \DeclareRobustCommand{\EExs}[1]
                {\mth{\argmid{\langle\!\langle}{\defval{#1}{\emptyset}}}{\rangle\!\rangle}}}
            1619 \DeclareRobustCommand{\AAll}[1]
                 {\mth{\argmid{\left[\left[}{\defval{#1}{\emptyset}}{\right]\right]}}}
```

```
\CGS ...
                                            1622 \cmdtxtname{CGS}
           \CGSStr, ... ...
                                            1623 \mbox{ \cgsstr}{G}
                                            1624 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]
           \AgnSet, ... ...
                                            1625 \mbox{ } \mbox{newcommand{\agnsym}{a}}
                                            1626 \mbox{ \newcommand{\agnset}{Ag}}
                                            1627 \cmdmthsetext{Agn}[\agnset][\agnsym]
           \PosSet, ... ...
                                            1628 \providecommand{\possym}{v}
                                            1629 \providecommand{posset}{Ps}
                                            1630 \cmdmthsetext{Pos}[\posset][\possym]
                                            1631 \verb|\cmdmthsymelm{ipos}[\possym_{I}]|
                                            1632 \cmdmthsymelm{fpos}[\possym_{F}]
                                            1633 \cmdmthset{PPos}[\posset_{\PlrSym}]
                                            1634 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
                                            1635 \cmdmthset{OPos}[\posset_{\OppSym}]
                                            1636 \cmdmthsymelm{opos}[\possym_{\OppSym}]
           \SttSet, ... ...
                                            1637 \mbox{ \newcommand{\sttsym}{s}}
                                            1638 \newcommand{\sttset}{St}
                                            1639 \cmdmthsetext{Stt}[\sttset][\sttsym]
                                            1640 \cmdmthset{IStt}[\sttset_{I}]
                                            1641 \cmdmthsymelm{istt}[\sttsym_{I}]
                                            1642 \cmdmthset{FStt}[\sttset_{F}]
                                            1643 \cmdmthsymelm{fstt}[\sttsym_{F}]
           \ActSet, ... ...
                                           1644 \newcommand{\actsym}{c}
                                            1645 \mbox{ } \mbox{\ } 
                                            1646 \cmdmthsetext{Act}[\actset][\actsym]
           \DecSet, ... ...
                                            1647 \newcommand{\decsym}{d}
                                            1648 \mbox{ } \mbox{lewcommand{\decset}{Dc}}
                                            1649 \cmdmthsetext{Dec} [\decset] [\decsym]
                       \movFun ...
                                            1650 \mbox{ \newcommand{\movsym}{\tau}}
                                            1651 \cmdmthfun{mov} [\movsym]
           \HstSet, ... ...
                                            1652 \providecommand{\hstsym}{\rho}
                                            1653 \providecommand{\hstset}{Hst}
                                            1654 \cmdmthsetext{Hst}[\hstset][\hstsym]
                                            1655 \cmdmthset{PHst}[\hstset_{\PlrSym}]
                                            1656 \verb|\cmdmthsymelm{phst}[\hstsym_{\P}]
                                            1657 \cmdmthset{OHst}[\hstset_{\OppSym}]
                                            1658 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
                                            1659 \cmdmthfun{hst}
\PlaySet,\playFun
                                             1660 \providecommand{\playsym}{\pi}
                                            1661 \providecommand{\playset}{Play}
                                            1662 \cmdmthsetext{Play}[\playset][\playsym]
                                            1663 \cmdmthfun{play}
```

```
\StrSet, ... ...
                  1664 \providecommand{\strsym}{\sigma}
                  1665 \providecommand{\strset}{Str}
                  1666 \cmdmthsetext{Str}[\strset][\strsym]
                  1667 \cmdmthset{PStr}[\strset_{\PlrSym}]
                  1668 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
                  1669 \verb|\cmdmthset{OStr}[\strset_{\oppSym}]|
                  1670 \verb|\cmdmthsymelm{ostr}[\strsym_{\colored}]|
\PrfSet, \prfFun
                  1671 \displaystyle \frac{1671 \providecommand{\prfsym}{\xi}}{}
                  1672 \providecommand{\prfset}{Prf}
                  1673 \cmdmthsetext{Prf}[\prfset][\prfsym]
                  \SL, ... ...
                  1675 % Strategy Logic
                  1676 \cmdtxtoparname{SL}
                  1677
                  1678 \DeclareRobustCommand{\ESL}
                  1679 {\ensuremath{\exists}\SL}
                  1680 \DeclareRobustCommand{\USL}
                       {\ensuremath{\forall}\SL}
                  1681
                  1682
                  1683 \DeclareRobustCommand{\FSL}
                       {\{\text{txtname}\{F\}\}\SL\}}
                  1684
                  1686 \DeclareRobustCommand{\EFSL}
                        {\ensuremath{\exists}\FSL}
                  1688 \DeclareRobustCommand{\UFSL}
                  1689
                        {\ensuremath{\forall}\FSL}
                  1690
                  1691 % One-Goal Strategy Logic
                  1692 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
                        {\SL[#1][#2][1g\arglef{,}{#3}]}
                  1693
                  1694
                  1695 \DeclareRobustCommand{\EOGSL}
                        {\ensuremath{\exists}\OGSL}
                   1697 \DeclareRobustCommand{\UOGSL}
                  1698
                        {\ensuremath{\forall}\OGSL}
                  1700 \DeclareRobustCommand{\FOGSL}
                        {\{ \text{txtname}\{F\} \} \setminus GSL \}}
                  1701
                  1702
                  1703 \DeclareRobustCommand{\EFOGSL}
                  1704 {\ensuremath{\exists}\FOGSL}
                  1705 \DeclareRobustCommand{\UFOGSL}
                        {\ensuremath{\forall}\FOGSL}
                  1706
                  1708 % Conjunctive-Goal Strategy Logic
                  1709 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
                  1710
                        {\SL[#1][#2][cg\arglef{,}{#3}]}
                  1711
                  1712 \DeclareRobustCommand{\ECGSL}
                        {\ensuremath{\exists}\CGSL}
                  1714 \DeclareRobustCommand{\UCGSL}
                  1715
                        {\ensuremath{\forall}\CGSL}
                  1716
                  1717 \DeclareRobustCommand{\FCGSL}
                        {\{ \text{xtname}\{F\} \} \times GSL \}}
```

1720 \DeclareRobustCommand{\EFCGSL}

```
{\ensuremath{\exists}\FCGSL}
1722 \DeclareRobustCommand{\UFCGSL}
1723
     {\ensuremath{\forall}\FCGSL}
1725 % Disjunctive-Goal Strategy Logic
1726 \DeclareRobustCommandx{\DGSL}[3][1=, 2=, 3=]
      {\SL[#1][#2][dg\arglef{,}{#3}]}
1729 \DeclareRobustCommand{\EDGSL}
      {\ensuremath{\exists}\DGSL}
1731 \DeclareRobustCommand{\UDGSL}
      {\ensuremath{\forall}\DGSL}
1733
1734 \DeclareRobustCommand{\FDGSL}
      {\{\text{xtname}\{F\}\}\times GSL\}}
1735
1736
1737 \DeclareRobustCommand{\EFDGSL}
      {\ensuremath{\exists}\FDGSL}
1738
1739 \DeclareRobustCommand{\UFDGSL}
      {\ensuremath{\forall}\FDGSL}
1740
1741
1742 % Alternating-Goal Strategy Logic
1743 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
      {\SL[#1][#2][ag\arglef{,}{#3}]}
1745
1746 \DeclareRobustCommand{\EAGSL}
      {\tt \{\ensuremath{\exists}\AGSL\}}
1748 \DeclareRobustCommand{\UAGSL}
1749
      {\ensuremath{\forall}\AGSL}
1750
1751 \DeclareRobustCommand{\FAGSL}
      {\{\text{xtname}\{F\}\}\}\}
1753
1754 \DeclareRobustCommand{\EFAGSL}
      {\ensuremath{\exists}\FAGSL}
1756 \verb|\DeclareRobustCommand{\UFAGSL}|
      {\ensuremath{\forall}\FAGSL}
1757
1758
1759 % Extended-Goal Strategy Logic
1760 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
1761
      {\SL[#1][#2][eg\arglef{,}{#3}]}
1762
1763 \DeclareRobustCommand{\EEGSL}
      {\ensuremath{\exists}\EGSL}
1765 \DeclareRobustCommand{\UEGSL}
      {\ensuremath{\forall}\EGSL}
1766
1767
1768 \DeclareRobustCommand{\FEGSL}
      {\{\text{xtname}\{F\}\}\times GSL\}}
1769
1770
1771 \DeclareRobustCommand{\EFEGSL}
      {\ensuremath{\exists}\FEGSL}
1773 \DeclareRobustCommand{\UFEGSL}
      {\ensuremath{\forall}\FEGSL}
1776 % Boolean-Goal Strategy Logic
1777 \DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
      {\SL[#1][#2][bg\arglef{,}{#3}]}
1779
1780 \DeclareRobustCommand{\EBGSL}
      {\ensuremath{\exists}\BGSL}
1781
1782 \DeclareRobustCommand{\UBGSL}
      {\ensuremath{\forall}\BGSL}
```

```
1784
            1785 \DeclareRobustCommand{\FBGSL}
            1786
                 {\{\text{txtname}\{F\}\}\setminus xGSL\}}
            1787
            1788 \DeclareRobustCommand{\EFBGSL}
                 {\ensuremath{\exists}\FBGSL}
            1789
            1790 \DeclareRobustCommand{\UFBGSL}
                 {\ensuremath{\forall}\FBGSL}
            1791
            1792
            1793 % Nested-Goal Strategy Logic
            1794 \DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
                  {\SL[#1][#2][ng\arglef{,}{#3}]}
            1796
            1797 \DeclareRobustCommand{\ENGSL}
                 {\ensuremath{\exists}\NGSL}
            1799 \DeclareRobustCommand{\UNGSL}
                 {\ensuremath{\forall}\NGSL}
            1800
            1801
            1802 \DeclareRobustCommand{\FNGSL}
                 {\{ \text{xtname}\{F\} \} xGSL \}}
            1803
            1804
            1805 \DeclareRobustCommand{\EFNGSL}
                 {\ensuremath{\exists}\FNGSL}
            1807 \DeclareRobustCommand{\UFNGSL}
                 {\ensuremath{\forall}\FNGSL}
            1808
            1809
            1810\ \% Undefined-Goal Strategy Logic
            1811 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
            1812
                  {\SL[#1][#2][xg\arglef{,}{#3}]}
            1814 \DeclareRobustCommand{\EXGSL}
                  {\ensuremath{\exists}\XGSL}
            1816 \DeclareRobustCommand{\UXGSL}
                 {\ensuremath{\forall}\XGSL}
            1817
            1818
            1819 \DeclareRobustCommand{\FXGSL}
                  {\{\text{xtname}\{F\}\}\}\}
            1820
            1821
            1822 \DeclareRobustCommand{\EFXGSL}
                 {\ensuremath{\exists}\FXGSL}
            1824 \DeclareRobustCommand{\UFXGSL}
                 {\ensuremath{\forall}\FXGSL}
            \BndSet, ... ...
            1827 \newcommand{\bndsym}{\flat}
            1828 \newcommand{\bndset}{Bn}
            1829 \cmdmthsetext{Bnd} [\bndset] [\bndsym]
            1830 \usrmth{bnd}{}{argfun}
       \psn ...
            1831 \usrmth{psn}{}{argfun}
            \nxtFun
            1833 \newcommand{\nxtfun}{nxt}
            1834 \cmdmthfun{nxt}[\nxtfun]
```

```
1840 \ifaut@
                                                        \DFA, ... ...
                                                        1842 \verb|\cmdtxtoparname{DFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}|
                                                        1843
                                                        1844 \verb|\cmdtxtoparname{DWA}\cmdtxtoparname{AWA}| cmdtxtoparname{WA}\\cmdtxtoparname{AWA}| cmdtxtoparname{AWA}| cm
                                                        1845
                                                        1846 \verb|\cmdtxtoparname{DFW}\\ cmdtxtoparname{UFW}\\ cmdtxtoparname{UFW}\\ cmdtxtoparname{AFW}\\ 
                                                        1847 \cmdtxtoparname{DBW}\cmdtxtoparname{ABW}
                                                        1848 \verb|\cmdtxtoparname{DCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}|
                                                        1849 \verb|\cmdtxtoparname{DPW}\cmdtxtoparname{MPW}\cmdtxtoparname{APW}|
                                                        1850 \verb|\cmdtxtoparname{DRW}| cmdtxtoparname{URW} \verb|\cmdtxtoparname{ARW}| cmdtxtoparname{ARW}| cmdtxtoparname{ARW
                                                        1851 \verb|\cmdtxtoparname{DSW}\cmdtxtoparname{ASW}| cmdtxtoparname{ASW}| 
                                                        \GFG, \PD, ...
                                                       1853 \cmdtxtoparname{GFG}
                                                        1855 \cmdtxtoparname{PD}
                                                        1856
                                                        1857 %% ...
                                                        \AutName, ... ...
                                                        1859 \newcommand{\autname}{A}
                                                        1860 \usrmthlatupp{Aut}{Name}{name}[\autname]
                                                        1861 \newcommand{\autset}{Aut}
                                                        1862 \cmdmthset{Aut}[\autset]
                     \WAutSet ...
                                                        1863 \newcommand{\wautset}{WAut}
                                                        1864 \cmdmthset{WAut}[\wautset]
      \SttSet, ...
                                                       1865 \def\sttsym{q}
                                                        1866 \def\sttset{Q}
                                                        1867 \cmdmthsetext{Stt}[\sttset][\sttsym]
                                                        1868 \cmdmthset{IStt}[\sttset_{I}]
                                                        1869 \cmdmthsymelm{istt}[\sttsym_{I}]
                                                        1870 \verb|\cmdmthset{FStt}| [\sttset_{F}]|
                                                        1871 \cmdmthsymelm{fstt}[\sttsym_{F}]
      \SymSet, ...
                                                        1872 \newcommand{\symsym}{\sigma}
                                                        1873 \newcommand{\symset}{\Sigma}
                                                        1874 \cmdmthsetext{Sym}[\symset][\symsym]
                        \trnFun
                                                        1875 \newcommand{\trnsym}{\delta}
                                                        1876 \cmdmthfun{trn}[\trnsym]
                                                        \LangFun
                                                        1878 \mbox{ } \mbox{langfun}{L}
                                                        1879 \cmdmthfun{Lang}[\langfun]
```

```
\WrdSet, ... ...
                    1880 \mbox{ \newcommand{\wrdsym}{w}}
                    1881 \newcommand{\wrdset}{Wr}
                    1882 \cmdmthsetext{Wrd} [\wrdset] [\wrdsym]
                    \DTA, ... ...
                    1884 \verb|\cmdtxtoparname{DTA}\cmdtxtoparname{ATA}| \\
                    1886 \verb|\cmdtxtoparname{DFT}\cmdtxtoparname{AFT}| cmdtxtoparname{AFT}| 
                    1887 \verb|\cmdtxtoparname{DBT}\cmdtxtoparname{ABT}| \\
                    1888 \verb|\cmdtxtoparname{DCT}\cmdtxtoparname{ACT}| \\
                    1889 \verb|\cmdtxtoparname{DPT}\cmdtxtoparname{MPT}\cmdtxtoparname{APT}|
                    1890 \verb|\cmdtxtoparname{DRT}\cmdtxtoparname{ART}| \\
                    1891 \verb|\cmdtxtoparname{DST}\cmdtxtoparname{AST}| \\
                    1892 \verb|\cmdtxtoparname{DMT}\cmdtxtoparname{MMT}| \\
                    \TAutSet ...
                    1894 \verb|\newcommand{\tautset}{TAut}|
                    1895 \cmdmthset{TAut}[\tautset]
 \DirSet, ... ...
                    1896 \mbox{ \newcommand{\dirsym}{d}}
                    1897 \newcommand{\dirset}{\Lambda}
                    1898 \cmdmthsetext{Dir}[\dirset][\dirsym]
                    \TreeSet, ... ...
                    1900 \newcommand{\treesym}{T}
                    1901 \newcommand{\treeset}{Tr}
                    1902 \cmdmthsetext{Tree} [\treeset] [\treesym]
        \wotFun ...
                     1903 \newcommand{\wotfun}{wot}
                    1904 \cmdmthfun{wot}[\wotfun]
                    1905 \fi
                    1910 \iffrm@
                    1911 %...
                    1912 \fi
                    1917 \iffig@
                    1918 \RequirePackage{tikz}
                    1919 \usetikzlibrary{arrows,graphs,matrix,patterns,shapes}
                    1920 \tikzstyle{every node} =
                            [draw = none, fill = none, black, thin]
                     1922 \tikzstyle{every edge} +=
                     1923 [black, thick]
```

```
1924 \tikzstyle{noall} =
           [draw = none, fill = none]
        1926 \tikzstyle{nodraw} =
        1927 [draw = none, fill = white]
        1928 \tikzstyle{nofill} =
        1929 [draw = black, fill = none]
        1930 \ifwrpfig@
        1931 % Wrapfig Package
        1932 \RequirePackage{wrapfig}
        1933 \fi
        1934 \fi
        1939 \iftab@
      1940 %%...
        1946 \ifalg@
        1947 \RequirePackage[ruled,vlined]{algorithm2e}
         1948 \setlength{\algomargin}{1.25em}
         1949 \DontPrintSemicolon
        1950 \sl 0.25em \ 0.5em \
 \Signature ...
        1951 \SetKw{Signature}{signature}
 \Macro, ... ...
        1952 \SetKwFor{Macro}{macro}{}}
        1953 \SetKwFor{Function}{function}{}}
        1954 \SetKwFor{Procedure}{procedure}{}{}
        1955 \SetKwFor{Let}{let}{in}{}
\True, \False ...
        1956 \SetKw{True}{true}
        1957 \SetKw{False}{false}
 \From, ... ...
        1958 \SetKw{From}{from}
        1959 \SetKw{To}{to}
        1960 \SetKw{DownTo}{downto}
 \GoTo, ... ...
        1961 \SetKw{GoTo}{goto}
        1962 \SetKw{Break}{break}
        1963 \SetKw{Continue}{continue}
  \MIf, ... ...
        1964 \F\{MIf}\{MElse]f\}\{\#then}{\else \f}\{\else \f\}\{\else}
```

## 2 Change History

v0.0	v0.4
General: First public release $\dots 1$	General: Refactoring, corrections, and
v0.1	extensions
General: Algorithm tricks	v0.5
v0.10	General: Figure tricks
General: Small refinements $\dots \dots \dots$	v0.6
v0.11	General: Small refinements 1
General: Few additions and corrections $\dots$ 1	v0.7
v0.12	General: Refinements, corrections, and
General: New starred variants 1	extensions
v0.2	v0.8
General: Changes in auxiliary tricks 1	General: Few refinements and corrections $\dots$ 1
v0.3	v0.9
General: Few problems solved $\dots 1$	General: Small addition to 'Algorithm tricks' 1

## 3 Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols	\aFun, 576	\argmid <u>241</u> ,
\! 352, 360, 783, 831, 1618	\agnset 1626, 1627	297, 305, 352, 360, 827,
\"	\AgnSet,	831, 835, 839, 845, 948,
\#	\agnsym 1625, 1627	952, 1431, 1433, 1618, 1620
827, 831, 1507, 1508,	\AGSL 1743, 1747, 1749	\argmin 968
1509, 1510, 1511, 1512,	\aka	\argrig 239
1513, 1514, 1515, 1516	\alg@false 121, 123	\argsep 243,
\ 1911, 1940	\alg@true	248, 827, 937, 939, 941, 943
\@card	\algomatgin 1948	\aSet, <sub>□</sub> 544
\@ceil 950, 951	\allowbreak . 238, 240, 242, 244	\asgset 1236, 1237
\@denot 843, 844	\Alpha, \ldots \cdot \cd	\AsgSet,
\@floor 946, 947	\aMat,	\asgsym 1235, 1237
\@for 256, 260	\amsdef@false	\aSig, <sub>□</sub> <u>518</u>
\@ifstar 766, 770, 803, 825,	\amsdef@true	\aSnt, <u>644</u>
829, 833, 837, 843, 946, 950	\amsthm@false	\aStr, <u>531</u>
\@set 825, 826	\amsthm@true 20	\aSym, <u>589</u>
\@setl 829, 830	\AName,,,	\Atheta, \ATheta 888
\@setr 833, 834	\Aomega, \\\AOmega \ldots \\ 884	\ATL,
\@svec 803, 806	\AOmicron 894	\ATLP 1592, 1596, 1598, 1600
\@vec 803, 804	\Aomicron,	\ATLS 1607, 1611, 1613, 1615
\^ 744, 746	\Aposteriori	\atrfun 1113, 1114
	\aposteriori	$\text{AtrFun,}_{\sqcup}\text{rchFun}$ $\underline{1113}$
A	\Apriori	\aut@false 56, 62, 93, 95
\AccRel, \TrnRel <u>1441</u>	\apriori	\aut@true 94
\accsym 1441, 1442, 1443	\apset 1209, 1210	\autname 1859, 1860
\ACls, 505	\APSet 1209, 1210	\AutName, <u>1859</u>
\actset 1645, 1646	\apsym 1208, 1210	\autset 1861, 1862
\ActSet,		\aux@false 11, 13
\actsym 1644, 1646	\arabic	\aux@true 12
\addtocounter 1966, 1967	\aRel, <u>563</u>	\aVec, <u>684</u>
\adhoc	\arenaname 1052, 1053 \ArenaName, 1052	В
\aElm, <u>602</u>	·- —	-
\AFam,	\arg	\BF,_\\QBF,_\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
\AFGMC	•	\bfseries 423
\AFMC 1467, 1476, 1478, 1480 \Afortiori 725	\arglef . <u>237</u> , 244, 352, 360, 1693, 1710, 1727, 1744,	\BG, <sub>□</sub>
\afortiori	1761, 1778, 1795, 1812	\BGSL 1777, 1781, 1783
\aFrm, 657	\argmax 970	\BMod
\arım,□ <u>007</u>	/arkmay 310	\Driod

\hndast 1999 1990	\ amdm+b a amafun	\amdm+haim 510
\bndset 1828, 1829 \BndSet, 1827	\cmdmthoargfun 581, 1102, 1104,	\cmdmthsig
\bndsym 1827, 1829	1106, 1108, 1110, 1112,	\cmdmthstr 532
\boldsymbol 670, 683	1114, 1116, 1118, 1120	\cmdmthsym
\bot 1190	\cmdmthoargmat 676	. <u>590</u> , 615, 1049, 1051,
\Box	\cmdmthoargname 484	1141, 1143, 1160, 1162
\boxminus	\cmdmthoargrel 568	\cmdmthsymelm 614, 1057,
\bst,	\cmdmthoargset 549	1058, 1060, 1062, 1083,
(220,	\cmdmthoargsig 523	1085, 1095, 1097, 1440,
$\mathbf{C}$	\cmdmthoargsnt 649	1631, 1632, 1634, 1636,
\card 836	\cmdmthoargstr 536	1641, 1643, 1656, 1658,
\caselower 556	\cmdmthoargsym $\underline{594}$ , $\overline{621}$	1668, 1670, 1869, 1871
\cdot <u>841</u>	\cmdmthoargsymelm 620	\cmdmthvec <u>685</u>
\cequiv, <sub>□</sub>	\cmdmthoargvec <u>689</u>	\cmdtxt <u>328</u> , 339
\cf <u>706</u>	\cmdmthopar <u>391</u> , <u>394</u>	\cmdtxtabr $436, 702, 703, 704,$
\CGS <u>1622</u>	\cmdmthoparcls $514$	705, 706, 707, 708, 709,
\CGSL 1709, 1713, 1715	\cmdmthoparelm $\underline{611}$ , $\underline{628}$	710, 711, 712, 713, 714,
\cgsstr 1623, 1624	$\verb \cmdmthoparfam  \underline{501}$	715, 716, 717, 718, 719,
\CGSStr, <u>1623</u>	\cmdmthoparfrm $\dots \dots \underline{666}$	720, 721, 722, 723, 725,
\chgbar@false 44	\cmdmthoparfun $\underline{585}$	726, 727, 728, 729, 730,
\chgbar@true 45	\cmdmthoparmat $\underline{680}$	731, 732, 733, 734, 735,
\chi 1235	\cmdmthoparname $\dots \underline{488}$	736, 737, 738, 742, 743,
\circ 864	\cmdmthoparrel $572$	744, 746, 748, 749, 750,
\text{cmdmth} $\frac{383}{394}$ , $631$ , $632$ , $638$	\cmdmthoparset $\dots \dots 553$	751, 752, 753, 754, 756,
\cmdmthall <u>393</u> , 478, 491, 504,	\cmdmthoparsig $\underline{527}$	757, 1225, 1226, 1227, 1228
517, 530, 543, 562, 575,	\cmdmthoparsnt <u>653</u>	\cmdtxtall <u>338</u> , 423, 435, 448, 460
588, 601, 643, 656, 670, 683	\cmdmthoparstr $\dots \dots 540$	\cmdtxtarg <u>330</u> , 339
\cmdmtharg <u>385</u> , 394	\cmdmthoparsym <u>598</u> , 627	\cmdtxtargabr 438
\cmdmthargcls <u>508</u>	\cmdmthoparsymelm 626	\cmdtxtargcom
\cmdmthargelm 605, 619	\cmdmthoparvec <u>693</u>	\cmdtxtargdef 426
\cmdmthargfam 495 \cmdmthargfrm 660	\cmdmthpar <u>389</u> , 394	\cmdtxtargname
\cmdmthargfrm <u>660</u> \cmdmthargfun <u>579</u>	\cmdmthparcls $\underline{512}$	\cmdtxtdef 424
\cmdmthargmat 674	\cmdmthparelm $\underline{609}$ , 625	\cmdtxtaer
\cmdmthargname 482	\cmdmthparfam	\cmdtxtoarg 332, 339
\cmdmthargrel 566	\cmdmthparfrm <u>664</u> \cmdmthparfun <u>583</u>	\cmdtxtoargabr 440
\cmdmthargset 547	\cmdmthparrat	\cmdtxtoargcom 465
\cmdmthargsig 521	\cmdmthparname 486	\cmdtxtoargdef 428
\cmdmthargsnt <u>647</u>	\cmdmthparrel 570	\cmdtxtoargname 453
\cmdmthargstr 534	\cmdmthparset <u>551</u>	\cmdtxtopar <u>336</u> , <u>339</u>
\cmdmthargsym $\dots 592, \frac{592}{618}$	\cmdmthparsig <u>525</u>	\cmdtxtoparabr 444
\cmdmthargsymelm 617	\cmdmthparsnt 651	\cmdtxtoparcom 469
\cmdmthargvec <u>687</u>	\cmdmthparstr 538	\cmdtxtopardef 432
\cmdmthcls <u>506</u>	\cmdmthparsym $\dots \frac{596}{624}$	\cmdtxtoparname 457, 1031,
\cmdmthelm <u>603</u> , 616	\cmdmthparsymelm 623	1034, 1037, 1040, 1043,
\cmdmthfam $\dots \dots \underline{493}$	\cmdmthparvec $\underline{691}$	1046, 1123, 1126, 1129,
\cmdmthfrm $\dots \dots \underline{658}$	$ \column{ \$	1132, 1135, 1138, 1151,
\cmdmthfun	\cmdmthset $545$ , $556$ , $1059$ ,	1154, 1157, 1176, 1240,
<u>577,</u> 1064, 1073, 1078,	1061, 1070, 1072, 1082,	1241, 1293, 1296, 1299,
1086, 1090, 1147, 1166,	1084, 1094, 1096, 1633,	1302, 1305, 1308, 1311,
1211, 1255, 1268, 1445,	1635, 1640, 1642, 1655,	1314, 1323, 1324, 1365,
1449, 1651, 1659, 1663,	1657, 1667, 1669, 1862,	1388, 1413, 1452, 1486,
1834, 1876, 1879, 1904	1864, 1868, 1870, 1895	1497, 1521, 1524, 1539,
\cmdmthlbop 635 \cmdmthlrel 639	\cmdmthsetext <u>555</u> ,	1554, 1573, 1588, 1603, 1676, 1842, 1844, 1846
\cmdmthluop, 633	1056, 1077, 1081, 1089,	1676, 1842, 1844, 1846, 1847, 1848, 1849, 1850,
\cmdmthrat 672	1093, 1100, 1146, 1165, 1210, 1220, 1234, 1237	1851, 1852, 1853, 1855,
\cmdmthname 480	$1210, 1220, 1234, 1237, \\ 1253, 1260, 1266, 1273,$	1884, 1886, 1887, 1888,
\cmdmthoarg <u>387</u> , 394	1233, 1200, 1200, 1273, 1279, 1358, 1361, 1439,	1889, 1890, 1891, 1892
\cmdmthoargcls 510	1448, 1627, 1630, 1639,	\cmdtxtpar <u>334</u> , 339
\cmdmthoargelm 607, 622	1646, 1649, 1654, 1662,	\cmdtxtparabr 442
\cmdmthoargfam 497	1666, 1673, 1829, 1867,	\cmdtxtparcom 467
\cmdmthoargfrm 662	1874, 1882, 1898, 1902	\cmdtxtpardef 430
<u> </u>	, , , , , , , , , , , , , , , , , , , ,	

\cmdtxtparname $455$	942, 945, 949, 954, 956,	\dep,_\alt <u>1223</u>
\cmodels, 785	958, 960, 962, 964, 966,	\der 798
\cmp	968, 970, 972, 974, 977,	\Dere <u>730</u>
\cnf,_\\dnf,_\ 1225	979, 981, 1179, 1181,	\dere 709
\Cnt, _\Qnt, _\Sym <u>1213</u>	1183, 1244, 1246, 1327,	\DF,_\\IF,_\ <u>1292</u>
\coimplies,	1329, 1333, 1335, 1339,	\DFA,
\com@false $\dots 56, 77, 79$	1341, 1345, 1347, 1351,	\DGSL 1726, 1730, 1732
\com@true 78	1353, 1368, 1372, 1376,	\Diamond 1428
\conset 1259, 1260	1380, 1384, 1391, 1395,	\dirset 1897, 1898
\consig 1256, 1257	1399, 1403, 1407, 1416,	\DirSet,
\ConSig, <sub>□</sub> 1256	1420, 1422, 1424, 1430,	\dirsym 1896, 1898
\constr 1283, 1284	1432, 1455, 1459, 1461,	\Divideetimpera 731
\ConStr,		• —
<del>-</del>	1463, 1467, 1471, 1475,	\divideetimpera $\dots \frac{710}{1491}$
\consym 1258, 1260	1477, 1479, 1489, 1491,	\DMod 1431
\Contd	1493, 1500, 1502, 1504,	$\DMod, \DMod$
\contd <u>749</u>	1527, 1531, 1533, 1535,	\do 256, 260
\coWMPL 1407	1542, 1546, 1548, 1550,	$\dim, \subseteq \operatorname{cod}, \subseteq \ldots $
\coWMSO 1353	1557, 1561, 1563, 1565,	\DontPrintSemicolon 1949
\coWMSOL 1351	1576, 1580, 1582, 1584,	\DTA,
\coWMTL 1384	1591, 1595, 1597, 1599,	\dual, \adj, \dual, \frac{794}{1000}
\coWPL	1606, 1610, 1612, 1614,	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
		${f E}$
\coWSO	1617, 1619, 1678, 1680,	
\coWSOL 1333	1683, 1686, 1688, 1695,	\E,_\A
\coWTL 1372	1697, 1700, 1703, 1705,	\EAFMC 1477
\crv@false 40	1712, 1714, 1717, 1720,	\EAGSL 1746
\crv@true 41	1722, 1729, 1731, 1734,	$\text{Easy}, \text{Ward}, \dots \dots \underline{1007}$
\csdef 223, 224, 225, 226,	1737, 1739, 1746, 1748,	\EATL 1582
227, 329, 331, 333, 335,	1751, 1754, 1756, 1763,	\EATLP 1597
337, 342, 384, 386, 388,	1765, 1768, 1771, 1773,	\EATLS 1612
390, 392, 397, 1003, 1005	1780, 1782, 1785, 1788,	\EBF 1181
\csedef	1790, 1797, 1799, 1802,	\EBGSL
,		\ECGSL
\csname 247,	1805, 1807, 1814, 1816,	\ECTL 1533
248, 249, 250, 251, 252,	1819, 1822, 1824, 1965	VP.C.11. 1000
253, 258, 262, 329, 331,	\DeclareRobustCommandx	\ECTLP 1548
333, 335, 337, 342, 348, 397		\ECTLP
	\DeclareRobustCommandx	\ECTLP
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333, 335, 337, 342, 348, 397 \CTLP 1543, 1547, 1549, 1551	\DeclareRobustCommandx	\ECTLP
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333, 335, 337, 342, 348, 397 \CTLP 1543, 1547, 1549, 1551 \CTLS 1558, 1562, 1564, 1566 \CurrentOption 126  D \DeclareMathAlphabet 215, 216, 217, 218 \DeclareMathOperator 869, 871 \DeclareOption 12, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 54, 55, 60, 61, 67, 68, 72, 73, 78, 79, 84, 85, 89, 90, 94, 95, 100, 101, 106, 107, 111, 116, 117, 122, 123, 126 \DeclareRobustCommand 765, 769, 772, 774, 776, 778, 780, 782, 785, 787, 789, 791, 794, 796, 798, 800, 802, 804, 806, 824, 828, 832, 836, 840, 842, 847, 850, 852, 854, 856, 859, 861, 863, 866, 875, 877, 879, 881, 884, 886, 888,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\textbf{\textbf{\textbf{\textbf{\textrict}}} \ 1548 \ \textbf{\textrict} \ 1563 \ \textbf{\textrict} \ 1729 \ \textbf{\textrict} \ 1763 \ \textbf{\textrict} \ 1763 \ \textbf{\textrict} \ 1763 \ \textbf{\textrict} \ 1764 \ \textbf{\textrict} \ 1754 \ \textbf{\textrict} \ 1788 \ \textbf{\textrict} \ 1720 \ \textbf{\textrict} \ 1720 \ \textbf{\textrict} \ 1737 \ \textbf{\textrict} \ 1771 \ \textbf{\textrict} \ 1805 \ \textbf{\textrict} \ 1805 \ \textbf{\textrict} \ 1686 \ \textbf{\textrict} \ 1686 \ \textbf{\textrict} \ 1822 \ \textbf{\textrict} \ 1822 \ \textbf{\textrict} \ 1760 \ 1764 \ 1766 \ \textbf{\textrict} \ 187 \ 201 \ 233 \ 235 \ 244 \ \textbf{\textrict} \ 1502 \ \textbf{\textrict} \ 187 \ 201 \ 233 \ 235 \ 244 \ \textbf{\textrict} \ 166 \ \textbf{\textrict} \ 187 \ 201 \ 233 \ 235 \ 248 \ \textbf{\textrict} \ 1800 \ \textbf{\textrict} \ 1461 \ \textbf{\textrict} \ 1422 \ \textbf{\textrict} \ 232 \ 238 \ 240 \ 242 \ 313 \ 368 \ 558 \ 560 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 240 \ 242 \ 313 \ 368 \ 558 \ 560 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 232 \ 238 \ 240 \ 242 \ 313 \ 368 \ 558 \ 560 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 240 \ 242 \ 313 \ 368 \ 558 \ 560 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 1866 \ \textbf{\textrict} \ 1866 \ \ \textbf{\textrict} \ 1866 \ \textbf{\textbf{\textrict}} \ 1866 \ \textbf{\textbf{\textbf{\textrict}} \ 1866 \ \textbf{\
333, 335, 337, 342, 348, 397 \CTLP 1543, 1547, 1549, 1551 \CTLS 1558, 1562, 1564, 1566 \CurrentOption 126  D \DeclareMathAlphabet 215, 216, 217, 218 \DeclareMathOperator 869, 871 \DeclareOption 12, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 54, 55, 60, 61, 67, 68, 72, 73, 78, 79, 84, 85, 89, 90, 94, 95, 100, 101, 106, 107, 111, 116, 117, 122, 123, 126 \DeclareRobustCommand 765, 769, 772, 774, 776, 778, 780, 782, 785, 787, 789, 791, 794, 796, 798, 800, 802, 804, 806, 824, 828, 832, 836, 840, 842, 847, 850, 852, 854, 856, 859, 861, 863, 866, 875, 877, 879, 881, 884, 886, 888, 890, 892, 894, 897, 899,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\textbf{\text
333, 335, 337, 342, 348, 397 \CTLP 1543, 1547, 1549, 1551 \CTLS 1558, 1562, 1564, 1566 \CurrentOption 126  D \DeclareMathAlphabet 215, 216, 217, 218 \DeclareMathOperator 869, 871 \DeclareOption 12, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 54, 55, 60, 61, 67, 68, 72, 73, 78, 79, 84, 85, 89, 90, 94, 95, 100, 101, 106, 107, 111, 116, 117, 122, 123, 126 \DeclareRobustCommand 765, 769, 772, 774, 776, 778, 780, 782, 785, 787, 789, 791, 794, 796, 798, 800, 802, 804, 806, 824, 828, 832, 836, 840, 842, 847, 850, 852, 854, 856, 859, 861, 863, 866, 875, 877, 879, 881, 884, 886, 888, 890, 892, 894, 897, 899, 901, 903, 905, 907, 909,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\textbf{\text
333, 335, 337, 342, 348, 397 \CTLP 1543, 1547, 1549, 1551 \CTLS 1558, 1562, 1564, 1566 \CurrentOption 126  D \DeclareMathAlphabet 215, 216, 217, 218 \DeclareMathOperator 869, 871 \DeclareOption 12, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 54, 55, 60, 61, 67, 68, 72, 73, 78, 79, 84, 85, 89, 90, 94, 95, 100, 101, 106, 107, 111, 116, 117, 122, 123, 126 \DeclareRobustCommand 765, 769, 772, 774, 776, 778, 780, 782, 785, 787, 789, 791, 794, 796, 798, 800, 802, 804, 806, 824, 828, 832, 836, 840, 842, 847, 850, 852, 854, 856, 859, 861, 863, 866, 875, 877, 879, 881, 884, 886, 888, 890, 892, 894, 897, 899, 901, 903, 905, 907, 909, 911, 913, 915, 917, 919,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\ECTLP

253, 258, 262, 329, 331,	\ffsym 1190, 1191	\hypersetup 165
333, 335, 337, 342, 348, 397	\fi 145, 150, 155, 160,	\hypref@false 33
\endinput 1970	175, 180, 195, 203, 204,	\hypref@true 32
\ENGSL 1797	208, 210, 233, 235, 244,	
\enmtls@false 29	471, 695, 758, 983, 1023,	I
\enmtls@true 28	1168, 1835, 1905, 1912,	\ie 717
\ensuremath 313,	1933, 1934, 1941, 1968	\if 233, 235, 244
,		
348, 870, 872, 1182,	\fig@false 105, 107	\if@twocolumn 132, 199
1184, 1423, 1425, 1452,	\fig@true 106	\ifalg@ 121, 1946
1462, 1464, 1478, 1480,	\fix,_\ifp, <u>875</u>	\ifamsdef@ 16, 139
1492, 1494, 1503, 1505,	\flat 1827	\ifamsthm@ 20, 147
1534, 1536, 1549, 1551,	\floor,_\ceil <u>945</u>	\ifaut@ 93, 1840
1564, 1566, 1583, 1585,	\FNGSL 1802, 1806, 1808	\ifaux@ 11, 137
1598, 1600, 1613, 1615,	\fnttls@false 37	\ifchgbar@ 44, 192
1679, 1681, 1687, 1689,	\fnttls@true 36	\ifcom@ 77, 988
1696, 1698, 1704, 1706,	\F0 1247	\ifcrv@ 40, 182
1713, 1715, 1721, 1723,	\F0GSL 1700, 1704, 1706	\ifcsdef 132
1730, 1732, 1738, 1740,	\FOL, <u>1239</u>	\ifdef 215, 216, 217, 218
1747, 1749, 1755, 1757,	\footnotesize 872	\ifenmtls@ 28, 157
1764, 1766, 1772, 1774,	\forall 1184,	\iff
1781, 1783, 1789, 1791,	1206, 1216, 1217, 1425,	\iffig@ 105, 1917
1798, 1800, 1806, 1808,	1464, 1480, 1494, 1505,	\iffnttls@ 36, 177
1815, 1817, 1823, 1825	1536, 1551, 1566, 1585,	\iffrm@ 99, 1910
\entfun 1105, 1106	1600, 1615, 1681, 1689,	\ifgam@ 83, 1028
,		•
\entFun, \lescFun 1105	1698, 1706, 1715, 1723,	\iff\(\)if\(
\enumeration,	1732, 1740, 1749, 1757,	\iflinnum@ 48, 197
\EOGSL 1695	1766, 1774, 1783, 1791,	\iflog@ 88, 1173
\EPTL 1491	1800, 1808, 1817, 1825	\ifmath@ 71, 763
\equiv 790, 792	\free,_\bound <u>1221</u>	\ifmthgen@ 59, 476
\ergo <u>712</u>	\frm@false 99, 101	\iftab@ 115, 1939
\Errata 733	\frm@true 100	\iftext@ 66, 700
\errata 713	\From, 1958	\ifthmtls@ 24, 152
\Erratum 734	\FSL 1683, 1687, 1689	\iftxtgen@ 53, 421
\erratum 714		\ifwrpfig@ 110, 1930
\escfun 1107, 1108	\funset 1265, 1266	\img 856
\ESL 1678	\funsig 1262, 1263	\implied,
\etal <u>715</u>	\FunSig, <sub>□</sub> <u>1262</u>	\implies,
\etc	\funstr 1285, 1286	\inf,_\sup <u>972</u>
$\operatorname{vn}_{\sqcup} \operatorname{odd} \ldots \underbrace{956}$	\FunStr, <u>1285</u>	\infty 904, 908, 910, 912, 916,
\evnsym 1140, 1141	\funsym 1264, 1266	918, 920, 924, 926, 928, 932
\EvnSym, ⊔\OddSym <u>1140</u>	\fvarset 1357, 1358	\interdisplaylinepenalty 144
\ExecuteOptions 128	\FVarSet,	\intfun 1109, 1110
\EXGSL	\fvarsym 1356, 1358	\intFun,_\outFun <u>1109</u>
\exists 1182,	\FXGSL 1819, 1823, 1825	\itr 256, 257, 258, 260, 261, 262
	(FAGSL 1019, 1025, 1025	111 250, 251, 250, 200, 201, 202
1204, 1216, 1217, 1423,	C	K
1462, 1478, 1492, 1503,	G	
1534, 1549, 1564, 1583,	\gam@false 56, 62, 83, 85	\kern 873
1598, 1613, 1679, 1687,	\gam@true 84	\krpstr 1435, 1436
1696, 1704, 1713, 1721,	\Game 1067	\KrpStr, <u>1435</u>
1730, 1738, 1747, 1755,	\gamename 1067, 1068	
1764, 1772, 1781, 1789,	\GameName, <u>1067</u>	${f L}$
1798, 1806, 1815, 1823		
	\GFG\PD 1853	\laallsym 1318, 1319
\expandatter	\GFG, □\PD, □	\laallsym 1318, 1319 \labFun 1444
\expandafter	\gfp 881	\labFun <u>1444</u>
247, 249, 252, 257, 261		$\label{labsym} \begin{array}{llllllllllllllllllllllllllllllllllll$
247, 249, 252, 257, 261 \ExpSpace, 1020	\gfp	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\gfp	\labSym 1444 \labSym 1444, 1445 \lallsym 1206, 1207 \Lambda 1897
247, 249, 252, 257, 261 \ExpSpace, 1020	\gfp	\labFun 1444 \labsym 1444, 1445 \lallsym 1206, 1207 \Lambda 1897 \lambda 1444
247, 249, 252, 257, 261         \ExpSpace,	\gfp 881 \GoTo, 1961 H \H 1514 \hstset	\labFun
247, 249, 252, 257, 261 \ExpSpace,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\labFun
247, 249, 252, 257, 261 \ExpSpace,	\gfp 881 \GoTo, 1961 H \H 1514 \hstset	\labFun
247, 249, 252, 257, 261 \ExpSpace, 1020 \ExpTime, 1019 \Exs,\All 1430  F \FAGSL 1751, 1755, 1757 \FBGSL 1785, 1789, 1791	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\labFun
247, 249, 252, 257, 261 \ExpSpace,	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\labFun
247, 249, 252, 257, 261 \ExpSpace, 1020 \ExpTime, 1019 \Exs,\All 1430  F \FAGSL 1751, 1755, 1757 \FBGSL 1785, 1789, 1791 \FCGSL 1717, 1721, 1723	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\labFun 1444 \labsym 1444, 1445 \lallsym 1206, 1207 \Lambda 1897 \lambda 1444 \land 1196 \LangFun 1878 \langfun 1878, 1879 \langle 817, 818, 820, 821, 1431, 1618
247, 249, 252, 257, 261 \ExpSpace, 1020 \ExpTime, 1019 \Exs,\All 1430  F \FAGSL 1751, 1755, 1757 \FBGSL 1785, 1789, 1791	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$	\labFun

\lceil 952	\mathtt 588	\mthstycls 504
\lcoisym 1202, 1203	\maxsym 1159, 1160	\mthstyelm 601
\LCon,	\MaxSym, _\MinSym <u>1159</u>	\mthstyfam 491
\lconsym 1196, 1197	\MC,_\GMC, <u>1451</u>	\mthstyfrm 656
\ldissym 1198, 1199	\mdseries 326, 448, 460	\mthstyfun 575
\LEExs,_\LAA11 1316	\MFO 1246	\mthstylbop 632
\leexssym 1316, 1317		\mthstylrel 638
	\MF0L 1244	
\left 352, 360, 811,	\middle 825	\mthstyluop 631
812, 813, 814, 815, 816,	\MIf, <u>1964</u>	\mthstymat 670
817, 818, 819, 820, 821,	$\min, \max, \ldots \qquad \underline{964}$	\mthstyname 478
822, 825, 829, 833, 837,	\minsym 1161, 1162	\mthstyrel 562
843, 946, 950, 1433, 1620	\ML, <sub>□</sub> \GML, <sub>□</sub> <u>1412</u>	\mthstyset 543
\Leftarrow 777, 779	\models 786, 788	\mthstysig 517
\Leftrightarrow 781, 783	\movFun <u>1650</u>	\mthstysnt 643
\leftrightarrow 1202	\MovRel 1065	\mthstystr 530
\Let 1955		\mthstysym 588
\let 1513, 1514, \overline{1515}	\movrel 1065, 1066	\mthstyvec 683
\LExs,_\\LA11 <u>1204</u>	\movsym 1650, 1651	\mthsubsup 348, 367
\lexssym 1204, 1205	\MPL 1399, 1404, 1408	\mthsym, 587
\lfloor 948	\MSO 1341, 1348, 1354	<u> </u>
	\MSOL 1339, 1346, 1352	\mthvec, \ldots \ \frac{682}{1276}
\lfp 879	\mth <u>370</u> ,	\MTL 1376, 1381, 1385
\liftFun <u>1117</u>	795, 797, 799, 801, 805,	\mu
\liftfun 1117, 1118	807, 809, 810, 811, 812,	\Mutatismutandis 735
\LImp,	813, 814, 815, 816, 817,	\mutatismutandis 718
\limpsym 1200, 1201	818, 819, 820, 821, 822,	
\linenumbers 200, 202	827, 831, 835, 839, 841,	${f N}$
\linnum@false 48		\naif <u>742</u>
\linnum@true 49	845, 848, 867, 935, 937,	\naive 743
\llbracket 845	939, 941, 943, 948, 952,	\neg 1 <u>192</u>
\llcorner 872	978, 1431, 1433, 1618, 1620	\newcommandx
\LNeg,_\LNot	\mtharg <u>372</u>	292, 294, 296, 298, 300,
\lnegsym 1192, 1193	\mthargfun 851,	302, 304, 306, 308, 310,
	853, 855, 857, 860, 980, 982	341, 347, 349, 351, 353,
\lnotsym 1194, 1195		341, 347, 349, 331, 333,
	\mthargset	
$\verb \log@false  \dots 56, 62, 88, 90 $	\mthargset	355, 357, 359, 361, 363,
\log@false 56, 62, 88, 90 \log@true 89	885, 887, 889, 891, 893, 895	355, 357, 359, 361, 363, 365, 396, 399, 401, 403,
$\verb \log@false  \dots 56, 62, 88, 90 $	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \docs \do	355, 357, 359, 361, 363,
\log@false 56, 62, 88, 90 \log@true 89	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	355, 357, 359, 361, 363, 365, 396, 399, 401, 403,
\log@false 56, 62, 88, 90 \log@true 89 \logsig	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413,
\log@false 56, 62, 88, 90 \log@true 89 \logsig	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430,
\log@false 56, 62, 88, 90 \log@true 89 \logsig	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \frac{503}{600} \mthfam, \ldots \cdot \frac{490}{655} \mthfun \cdot 876, 878, 880, 882, 955, 957, 959, 961, 963,	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467,
\log@false 56, 62, 88, 90 \log@true 89 \logsig 1186, 1187 \LogSig, 1186 \LogSpace, 1014 \logstr 1230, 1231 \LogStr, 1230 \LogTime, 1013	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486,
\log@false       56, 62, 88, 90         \log@true       89         \logsig       1186, 1187         \LogSig,       1186         \LogSpace,       1014         \logstr       1230, 1231         \LogStr,       1230         \LogTime,       1013         \lor       1198	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \frac{503}{600} \mthfam, \ldots \cdot \frac{490}{655} \mthfun \cdot 876, 878, 880, 882, 955, 957, 959, 961, 963,	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499,
\log@false 56, 62, 88, 90 \log@true 89 \logsig 1186, 1187 \LogSig, 1186 \LogSpace, 1014 \logstr 1230, 1231 \LogStr, 1230 \LogTime, 1013 \lor 1198 \lowercase 558, 560	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \frac{503}{600} \mthfam, \ldots \frac{600}{655} \mthfun \cdot 876, 878, 880, 882, 955, 957, 959, 961, 963, 965, 967, 969, 971, 973, 975	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512,
\log@false       56, 62, 88, 90         \log@true       89         \logsig       1186, 1187         \LogSig,       1186         \LogSpace,       1014         \logstr       1230, 1231         \LogStr,       1230         \LogTime,       1013         \lor       1198	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538,
\log@false 56, 62, 88, 90 \log@true 89 \logsig 1186, 1187 \LogSig, 1186 \LogSpace, 1014 \logstr 1230, 1231 \LogStr, 1230 \LogTime, 1013 \lor 1198 \lowercase 558, 560 \lvert 839	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551,
\log@false 56, 62, 88, 90 \log@true 89 \logsig 1186, 1187 \LogSig, 1186 \LogSpace, 1014 \logstr 1230, 1231 \LogStr, 1230 \LogTime, 1013 \lor 1198 \lowercase 558, 560 \lvert 839  M \Macro, 1952	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568,
\log@false 56, 62, 88, 90 \log@true 89 \logsig 1186, 1187 \LogSig, 1014 \logstr 1230, 1231 \LogStr, 1230 \LogTime, 1013 \lor 1198 \lowercase 558, 560 \lvert 839  M \Macro, 1952 \math@false 62, 71, 73	885, 887, 889, 891, 893, 895 \mthcls, \ldots \\ \frac{503}{mthelm, \ldots \} \frac{600}{mthfam, \ldots \} \frac{655}{mthfun} \frac{876}{878}, 880, 882, \frac{955}{957}, 959, 961, 963, \frac{965}{967}, 969, 971, 973, 975} \frac{100}{mthgen@false} \frac{574}{mthgen@false} \frac{59}{62} \frac{62}{mthlop} \frac{767}{768}, 770, 862, 864} \frac{637}{773}, 775, 777, 779,	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \cdot \cd	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620,
\log@false	885, 887, 889, 891, 893, 895 \mthcls, \ldots \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639,
\log@false	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653,
\log@false	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666,
\log@false	885, 887, 889, 891, 893, 895         \mthcls, \( \cdots\)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693,
\log@false	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004
Nog@false   56, 62, 88, 90     Nog@true   89     NogSig   1186, 1187     LogSig, □   1186     LogSpace, □   1014     NogStr   1230, 1231     LogStr, □   1013     LogTime, □   1013     Nowercase   558, 560     Nowercase   558, 560     Nowercase   558, 560     Nowercase   62, 71, 73     Macro, □   1952     Math@false   62, 71, 73     Math@true   72     Mathaccent   805     Mathbin   632     Mathbin   632     Mathbin   632     Mathcal   478     Matheus   216, 504     Mathfrak   530     Mathit   562, 656, 683     Mathnormal   601     Mathop   631	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004
\log@false	885, 887, 889, 891, 893, 895         \mthcls, \( \cdots \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004
Nog@false   56, 62, 88, 90     Nog@true   89     NogSig   1186, 1187     LogSig, □   1186     LogSpace, □   1014     NogStr   1230, 1231     LogStr, □   1013     LogTime, □   1013     Nowercase   558, 560     Nowercase   558, 560     Nowercase   558, 560     Nowercase   62, 71, 73     Macro, □   1952     Math@false   62, 71, 73     Math@true   72     Mathaccent   805     Mathbbo   215     Mathbin   632     Mathbin   632     Matheus   216, 504     Mathfrak   530     Mathit   562, 656, 683     Mathnormal   601     Mathop   631     Mathpzc   217, 517     Mathrel   638, 872	885, 887, 889, 891, 893, 895         \mthcls, \( \cdots\)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004
Nog@false   56, 62, 88, 90     Nog@true   89     Nogsig   1186, 1187     LogSig, □   1186     LogSpace, □   1014     Nogstr   1230, 1231     LogStr, □   1013     NogTime, □   1013     Nowercase   558, 560     Nowercase   558, 560     Nowercase   558, 560     Nowercase   62, 71, 73     Macro, □   1952     Math@false   62, 71, 73     Math@true   72     Mathaccent   805     Mathbbo   215     Mathbin   632     Mathbin   632     Mathbin   632     Matheus   216, 504     Mathrak   530     Mathit   562, 656, 683     Mathnormal   601     Mathop   631     Mathrel   638, 872     Mathring   797	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004 \newif 11, 16, 20, 24, 28, 32, 36, 40, 44, 48, 53, 59, 66, 71, 77, 83, 88, 93, 99, 105, 110, 115, 121, 132
Nog@false   56, 62, 88, 90     Nog@true   89     Nogsig   1186, 1187     LogSig, □   1186     LogSpace, □   1014     Nogstr   1230, 1231     LogStr, □   1013     NogTime, □   1013     Nowercase   558, 560     Nowercase   558, 560     Nowercase   558, 560     Nowercase   62, 71, 73     Macro, □   1952     Math@false   62, 71, 73     Math@true   72     Mathaccent   805     Mathbbo   215     Mathbin   632     Mathbin   632     Mathbin   632     Matheus   216, 504     Matheus   216, 504     Mathfrak   530     Mathit   562, 656, 683     Mathnormal   601     Mathop   631     Mathrel   638, 872     Mathring   797     Mathring   797     Mathrm   543	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004 \newif 11, 16, 20, 24, 28, 32, 36, 40, 44, 48, 53, 59, 66, 71, 77, 83, 88, 93, 99, 105, 110, 115, 121, 132 \newmth $\dots$ 347, 350, 352, 360
Nog@false   56, 62, 88, 90     Nog@true   89     Nogsig   1186, 1187     LogSig, □   1186     LogSpace, □   1014     Nogstr   1230, 1231     LogStr, □   1013     NogTime, □   1013     Nowercase   558, 560     Nowercase   558, 560     Nowercase   558, 560     Nowercase   62, 71, 73     Macro, □   1952     Math@false   62, 71, 73     Math@true   72     Mathaccent   805     Mathbbo   215     Mathbin   632     Mathbin   632     Mathbin   632     Matheus   216, 504     Mathrak   530     Mathit   562, 656, 683     Mathnormal   601     Mathop   631     Mathrel   638, 872     Mathring   797	885, 887, 889, 891, 893, 895         \mthcls, \( \)	355, 357, 359, 361, 363, 365, 396, 399, 401, 403, 405, 407, 409, 411, 413, 415, 424, 426, 428, 430, 432, 436, 438, 440, 442, 444, 449, 451, 453, 455, 457, 461, 463, 465, 467, 469, 480, 482, 484, 486, 488, 493, 495, 497, 499, 501, 506, 508, 510, 512, 514, 519, 521, 523, 525, 527, 532, 534, 536, 538, 540, 545, 547, 549, 551, 553, 555, 564, 566, 568, 570, 572, 577, 579, 581, 583, 585, 590, 592, 594, 596, 598, 603, 605, 607, 609, 611, 614, 617, 620, 623, 626, 633, 635, 639, 645, 647, 649, 651, 653, 658, 660, 662, 664, 666, 672, 674, 676, 678, 680, 685, 687, 689, 691, 693, 989, 992, 997, 1002, 1004 \newif 11, 16, 20, 24, 28, 32, 36, 40, 44, 48, 53, 59, 66, 71, 77, 83, 88, 93, 99, 105, 110, 115, 121, 132

\newmthoarg <u>355</u> , 358	\pi 1075, 1087, 1446, 1660	\QPTL 1489
\newmthoargsty . 357, 375, 388	\playset 1088, 1089, 1661, 1662	(4111 1403
\newmthopar 363, 366	\PlaySet,\playFun . 1087, 1660	R
\newmthoparsty . $\frac{365}{379}$ , $\frac{392}{392}$	\playsym 1087, 1089, 1660, 1662	\raisebox 872
\newmthpar $\frac{359}{362}$ , $\frac{362}{364}$	\PlrFun <u>1063</u>	\rangle 817,
\newmthparsty $\frac{361}{361}$ , $\frac{377}{390}$	\plrfun 1063, \overline{1064}	819, 820, 822, 1431, 1618
\newmthsty $\frac{349}{349}$ , 371, 384	\PlrSym	\rbrace 827, 835
\newtxt <u>292</u> , <u>795</u> , 297, 305	1059, 1060, 1082, 1083,	\rceil 952
\newtxtarg 296, 299, 301	1094, 1095, 1633, 1634,	\rchfun 1115, 1116
\newtxtargsty <u>298</u> , 318, 331	1655, 1656, 1667, 1668	\relax 130
\newtxtoarg <u>300</u> , 303	\plrsym 1048, 1049	\relset 1278, 1279
\newtxtoargsty . $\underline{302}$ , $320$ , $333$	\PlrSym, _ \OppSym <u>1048</u>	\relsig 1275, 1276
\newtxtopar <u>308</u> , 311	\pm 908, 916, 924	\RelSig, <u>1275</u>
\newtxtoparsty . $\underline{310}$ , $324$ , $337$	\posset	\relstr 1289, 1290
\newtxtpar $304, 307, 309$	1055, 1056, 1059, 1061,	\RelStr,
\newtxtparsty $\underline{306}$ , $322$ , $335$	1629, 1630, 1633, 1635	\relsym 1277, 1279
\newtxtsty <u>294</u> , 316, 329	\PosSet, <u>1054</u> , <u>1628</u>	\RequirePackage 3, 5,
\NGSL 1794, 1798, 1800	\possym	6, 7, 141, 142, 143, 149,
\nlr <u>1965</u>	1054, 1056, 1057, 1058,	154, 159, 164, 179, 194,
\nlset 1967	1060, 1062, 1628, 1630,	200, 202, 1918, 1932, 1947
\noexpand	1631, 1632, 1634, 1636	\resp
\normalfont 423, 448, 460	\pow 840	\rfloor 948 \rho 1079, 1652
\not 775, 779, 783, 788, 792	\prefun \ 1101, 1102	\right 352, 360, 811,
\notcequiv	\preFun,_\\sucFun <u>1101</u> \prfset . 1099, 1100, 1672, 1673	812, 813, 814, 815, 816,
\notcoimplies 787	\PrfSet, \\prfFun <u>1098</u> , <u>1671</u>	817, 818, 819, 820, 821,
\notimplied	\prfsym . 1098, 1100, 1671, 1673	822, 825, 829, 833, 837,
\notimplies 774	\Primafacie	843, 946, 950, 1433, 1620
\num, 934	\primafacie 720	\Rightarrow 773, 775
\numcc 936	\prj 859	\rightarrow 1200
\numco 938	\ProcessOptions 130	\rightharpoonup 870, 873
\numoc 940	\providecommand	\rmfamily 326, 460
\numoo 942	1446, 1447, 1628, 1629,	\rng 854
	1110, 1111, 1020, 1020,	1116
\nxtFun	1652, 1653, 1660, 1661,	\Role
		•
\nxtFun <u>1833</u>	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset \ldots 1145, 1146	\Role <u>746</u>
\nxtFun	$\begin{array}{c} 1652, 1653, 1660, 1661,\\ 1664, 1665, 1671, 1672\\ \verb \prtset  \dots \dots 1145, 1146\\ \verb \prtSet  \dots > \underline{1144} \end{array}$	\Role
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset 1145, 1146 \PrtSet, ⊔\prtFun 1144, \prtsym 1144, 1146	\Role
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset 1145, 1146 \PrtSet, \( \rightarrow \prtFun \) 1144, 1146 \psn	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset 1145, 1146 \PrtSet, \( \prtFun \) 1144, 1146 \psn 1831 \PSpace, \( \preceq \)	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset 1145, 1146 \PrtSet, □\prtFun 1144, 1146 \prtsym	\Role
\nxtFun 1833 \nxtfun 1833, 1834 O \obsset 1071, 1072 \ObsSet, \( \)\obsFun 1071 \oddsym 1142, 1143 \odot 1215 \OGSL 1692, 1696, 1698, 1701	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset 1145, 1146 \PrtSet, □\prtFun 1144, 1146 \prtsym 1831 \PSpace, □	\Role \ \ \frac{746}{744} \ \text{role} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672  \prtset 1145, 1146  \PrtSet, \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	Nole
\nxtFun 1833 \nxtfun 1833, 1834 O \obsset 1071, 1072 \ObsSet ,\obsFun 1071 \oddsym 1142, 1143 \odot 1215 \OGSL 1692, 1696, 1698, 1701 \Omega 887 \omega 885 \Omicron 895 \omicron 223, 893	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	Role
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	$\begin{tabular}{lllllllllllllllllllllllllllllllllll$
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	Role
\nxtFun \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1652, 1653, 1660, 1661, 1664, 1665, 1671, 1672 \prtset	\Role

\SetC, <sub>□</sub> <u>929</u>	${f T}$	\txtopar <u>323</u>
\SetCI 931	\tab@false 115, 117	\txtpar 321
\SetF <u>899</u>	\tab@true 116	\txtsty
\SetInd 1950	\tau 1650	$316, 318, 320, 322, 324, \underline{325}$
\SetKw 1951,	\TAutSet <u>1894</u>	\txtstyabr 435
1956, 1957, 1958, 1959,	\tautset 1894, 1895	\txtstycom 460
1960, 1961, 1962, 1963	\terset 1272, 1273	\txtstydef 423
\SetKwFor 1952, 1953, 1954, 1955	\tersig 1269, 1270	\txtstyname 448
\SetKwIF 1964	\TerSig,	\txtsubsup 293, <u>312</u>
\set1 828	\terstr 1287, 1288	${f U}$
\setlength 1948	\TerStr, <u>1287</u>	\UAFMC 1479
\SetN,	\tersym 1271, 1273 \text 293, 313, 767	\UAGSL 1748
\SetNI 903 \SetQ, 913	\text@false 56, 66, 68	\UATL 1584
\SetQI 915	\text@true 67	\UATLP 1599
\SetQNI 919	\textstyle 631, 632	\UATLS 1614
\SetQPI 917	\textup 767	\UBF
\setr 832	\thestring 557, 558, 559, 560	\UBGSL
\SetR, <sub>□</sub> 921	\Theta 891	\UCGSL
\SetRI 923	\theta 889	\UCTLP
\SetRNI 927	\thmtls@false 25	\UCTLS 1565
\SetRPI 925	\thmtls@true 24	\UDGSL 1731
\SetZ, <u>905</u>	\tikzstyle 1920,	\UEGSL 1765
\SetZI 907	1922, 1924, 1926, 1928	\UFAGSL 1756
\SetZNI 911	\Time, \( \text{1011} \) \\TL, \( \text{\PL}, \( \text{\L} \) \\ \text{1364} \\ \text{1364}	\UFBGSL 1790
\SetZPI 909	\top 1188	\UFCGSL 1722
\sffamily	\treeset 1901, 1902	\UFDGSL 1739
\Sigma 1316, 1873	\TreeSet,	\UFEGSL
\sigma 1091, 1664, 1872	\treesym 1900, 1902	\UFNGSL
\Signature <u>1951</u>	\triangleq 768	\UF0GSL
\sim	\trn 800	\UFXGSL
\skm	\trnFun <u>1875</u>	\ULTL 1504
\S0	\trnsym 1875, 1876	\UMC 1463
\SOL,,,,	\True, \  \False <u>1956</u>	\UML 1424
\solFun	\Tt, _\Ff	\UNGSL 1799
\solfun 1119, 1120	\ttsym 1188, 1189	\UOGSL 1697
\Space, <u>1012</u>	\tuple, \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\upharpoonright 862
\stackrel 767		\upshape 326
\strset	\txtabr, <u>434</u> \txtarg <u>317</u>	\UPTL 1493 \usetikzlibrary 1919
1092, 1093, 1094, 1096,	\txtcom 1003, 1005	\USL
1665, 1666, 1667, 1669	\txtcom, 459	\usrmth \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
\StrSet, <u>1091</u> , <u>1664</u>	\txtdef, 422	404, 406, 408, 410, 412,
\strsym	\txtgen@false 53, 56	414, 416, 481, 483, 485,
1091, 1093, 1095, 1097, 1664, 1666, 1668, 1670	\txtgen@true	487, 489, 494, 496, 498,
\sttset	54, 67, 78, 84, 89, 94	500, 502, 507, 509, 511,
1638, 1639, 1640, 1642,	\txtname 1180,	513, 515, 520, 522, 524,
1866, 1867, 1868, 1870	1245, 1247, 1328, 1330,	526, 528, 533, 535, 537,
\SttSet, <u>1637</u> , <u>1865</u>	1334, 1336, 1340, 1342, 1346, 1348, 1352, 1354,	539, 541, 546, 548, 550, 552, 554, 565, 567, 569,
\sttsym	1369, 1373, 1377, 1381,	571, 573, 578, 580, 582,
1637, 1639, 1641, 1643,	1385, 1392, 1396, 1400,	584, 586, 591, 593, 595,
1865, 1867, 1869, 1871	1404, 1408, 1417, 1421,	597, 599, 604, 606, 608,
\stx	1456, 1460, 1468, 1472,	610, 612, 634, 636, 640,
\sub	1476, 1490, 1501, 1528,	646, 648, 650, 652, 654,
\sucfun 1103, 1104	1532, 1543, 1547, 1558,	659, 661, 663, 665, 667,
\svarset 1360, 1361	1562, 1577, 1581, 1592,	673, 675, 677, 679, 681,
\SVarSet,	1596, 1607, 1611, 1684,	686, 688, 690, 692, 694,
\svarsym 1359, 1361	1701, 1718, 1735, 1752,	1189, 1191, 1193, 1195,
\symset 1873, 1874	1769, 1786, 1803, 1820	1197, 1199, 1201, 1203,
\SymSet,	\txtname,	1205, 1207, 1211, 1212,
\symsym 1872, 1874	\txtoarg <u>319</u>	1213, 1214, 1215, 1216,

1217, 1221, 1222, 1223,	\varcmd . $246$ , 809, 810, 811,	\Wlogx
1224, 1254, 1255, 1261,	812, 813, 814, 815, 816,	\wlogx <u>754</u>
1267, 1268, 1274, 1280,	817, 818, 819, 820, 821, 822	\WMPL 1403
1281, 1317, 1319, 1427,	\varepsilon 978	\WMSO 1347
1428, 1429, 1507, 1508,	\varnothing 848, 867	\WMSOL 1345
1509, 1510, 1511, 1512,	\varset 1252, 1253	\WMTL 1380
1513, 1514, 1515, 1516,	\varsig 1249, 1250	\wotFun <u>1903</u>
1568, 1569, 1830, 1831	\VarSig, <u>1249</u>	\wotfun 1903, 1904
\usrmthgrklet <u>409</u>	\varsym 1251, 1253	\wp 1218
\usrmthgrklow $\underline{405}$	\vec <u>802</u>	\WPL 1391
\usrmthgrkupp $\underline{407}$	\vert 827, 831	\wrdset 1881, 1882
\usrmthlatlet $\underline{403}$	\Viceversa <u>738</u>	\WrdSet,
\usrmthlatlow <u>399</u>	\viceversa <u>721</u>	\wrdsym 1880, 1882
\usrmthlatupp $\underline{401}$ ,	\viz <u>723</u>	\wrlset 1438, 1439
1053,  1068,  1187,  1231,	\vs <u>722</u>	\WrlSet,
1250, 1257, 1263, 1270,		\wrlsym 1437, 1439, 1440
1276, 1284, 1286, 1288,	${f W}$	\wrpfig@false 111
1276, 1284, 1286, 1288, 1290, 1436, 1624, 1860	<b>W</b> \WATL 1576	\wrpfig@true 110
	• •	$\label{eq:wrpfig0true} $$ \underset{\text{wrt}}{\text{110}} $$$
1290, 1436, 1624, 1860	\WATL 1576	\wrpfig@true
1290, 1436, 1624, 1860 \usrmthlet 415, 557, 559	\WATL	\wrpfig@true
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\WATL	\wrpfig@true
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAutSet 1863	\wrpfig@true       110         \wrt       753         \WSO       1329         \WSOL       1327         \WTL       1368
1290,       1436,       1624,       1860         \usrmthlet        415,       557,       559         \usrmthlow        411         \usrmthupp        413         \usrtxt	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAUTSet 1863 \wautset 1863, 1864	\wrpfig@true
1290, 1436, 1624, 1860 \usrmthlet 415, 557, 559 \usrmthlow 411 \usrmthupp	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAUTSet 1863, 1864 \Wautset 1863, 1864 \WCTL 1527	\wrpfig@true
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAUTSet 1863 \Wautset 1863, 1864 \WCTL 1527 \WCTLP 1542	\wrpfig@true
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAutSet 1863 \wautset 1863, 1864 \WCTL 1527 \WCTLP 1542 \WCTLS 1557	\wrpfig@true
1290, 1436, 1624, 1860 \usrmthlet 415, 557, 559 \usrmthlow 411 \usrmthupp 413 \usrtxt  341, 425, 427, 429, 431, 433, 437, 439, 441, 443, 445, 450, 452, 454, 456, 458, 462, 464, 466, 468, 470 \UXGSL 1816	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAutSet 1863 \Wautset 1863, 1864 \WCTL 1527 \WCTLP 1542 \WCTLS 1557 \wghset 1164, 1165	\wrpfig@true
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAutSet 1863 \Wautset 1863, 1864 \WCTL 1527 \WCTLP 1542 \WCTLS 1557 \wghset 1164, 1165 \WghSet, □\wghFun 1163	\wrpfig@true
1290, 1436, 1624, 1860 \usrmthlet 415, 557, 559 \usrmthlow 411 \usrmthupp 413 \usrtxt  341, 425, 427, 429, 431, 433, 437, 439, 441, 443, 445, 450, 452, 454, 456, 458, 462, 464, 466, 468, 470 \UXGSL 1816	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAUTSet 1863, 1864 \WCTL 1527 \WCTLP 1542 \WCTLS 1557 \WGTLS 1567 \WGhSet, \_\WghFun 1163, 1165	\wrpfig@true
1290, 1436, 1624, 1860 \usrmthlet 415, 557, 559 \usrmthlow 411 \usrmthupp 413 \usrtxt  341, 425, 427, 429, 431, 433, 437, 439, 441, 443, 445, 450, 452, 454, 456, 458, 462, 464, 466, 468, 470 \UXGSL 1816	\WATL 1576 \WATLP 1591 \WATLS 1606 \WAUTSet 1863, 1864 \WCTL 1527 \WCTLP 1542 \WCTLS 1557 \WGHSet 1164, 1165 \WghSet, \\wghFun 1163, 1165 \wghsym 1163, 1165 \widehat 799	\wrpfig@true