

# fmocdmac — FM's OCD L<sup>A</sup>T<sub>E</sub>X Macro\*

Fabio Mogavero  
fm@fabiomogavero.com

Released 2023/11/11

## 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:

```
2
3 \RequirePackage{etoolbox}
4
5 \RequirePackage{xargs}
6 \RequirePackage{xspace}
7 \RequirePackage{stringstrings}
8
```

### Package options:

```
9
10 %% Auxiliary packages
11 \newif\ifaux@ \aux@false
12 \DeclareOption{aux}{\aux@true}
13 \DeclareOption{noaux}{\aux@false}
14
15 %% AMS defaults
16 \newif\ifamsdef@ \amsdef@true
17 \DeclareOption{noamsdef}{\amsdef@false}
18
19 %% AMS theorem tools
20 \newif\ifamsthm@ \amsthm@true
21 \DeclareOption{noamsthm}{\amsthm@false}
22
23 %% Extended Theorem tools
24 \newif\ifthmtls@ \thmtls@true
25 \DeclareOption{nothmtls}{\thmtls@false}
26
27 %% Enumeration tools
28 \newif\ifenmtls@ \enmtls@true
29 \DeclareOption{noenmtls}{\enmtls@false}
30
31 %% Hyper reference
32 \newif\ifhympref@ \hympref@true
33 \DeclareOption{nohympref}{\hympref@false}
34
```

---

\*This document describes version v0.26 of the fmocdmac package, last revised 2023/11/11.

```

35 %% Font tools
36 \newif\iffnttts@ \fnttts@true
37 \DeclareOption{nofnttts}{\fnttts@false}
38
39 %% Camera-ready version
40 \newif\ifcrv@ \crv@false
41 \DeclareOption{crv}{\crv@true}
42
43 %% Change bars
44 \newif\ifchgbar@ \chgbar@false
45 \DeclareOption{chgbar}{\chgbar@true}
46
47 %% Line numbers
48 \newif\iflinnum@ \linnum@false
49 \DeclareOption{linnum}{\linnum@true}
50
51
52 %% Text macro generation
53 \newif\iftxtgen@ \txtgen@false
54 \DeclareOption{txtgen}{\txtgen@true}
55 \DeclareOption{notxtgen}
56   {\txtgen@false\txt@false\com@false\gam@false\log@false\aut@false}
57
58 %% Math macro generation
59 \newif\ifmthgen@ \mthgen@false
60 \DeclareOption{mthgen}{\mthgen@true}
61 \DeclareOption{nomthgen}
62   {\mthgen@false\mth@false\gam@false\log@false\aut@false}
63
64
65 %% Elementary macros for text
66 \newif\iftxt@ \txt@false
67 \DeclareOption{txt}{\txt@true\txtgen@true}
68 \DeclareOption{notxt}{\txt@false}
69
70 %% Elementary macros for math
71 \newif\ifmth@ \mth@false
72 \DeclareOption{mth}{\mth@true\mthgen@true}
73 \DeclareOption{nomth}{\mth@false}
74
75
76 %% Macros for computational-complexity classes
77 \newif\ifcom@ \com@false
78 \DeclareOption{com}{\com@true\txtgen@true}
79 \DeclareOption{nocom}{\com@false}
80
81
82 %% Macros for graphs
83 \newif\ifgrp@ \grp@false
84 \DeclareOption{grp}{\grp@true\txtgen@true\mthgen@true}
85 \DeclareOption{nogrp}{\grp@false}
86
87 %% Macros for games
88 \newif\ifgam@ \gam@false
89 \DeclareOption{gam}{\gam@true\txtgen@true\mthgen@true}
90 \DeclareOption{nogam}{\gam@false}
91
92 %% Macros for logics
93 \newif\iflog@ \log@false
94 \DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
95 \DeclareOption{nolog}{\log@false}
96
97 %% Macros for automata

```

```

98 \newif\ifaut@ \aut@false
99 \DeclareOption{aut}{\aut@true\txtgen@true\mthgen@true}
100 \DeclareOption{noaut}{\aut@false}
101
102
103 %% Format-related tricks
104 \newif\iffrm@ \frm@false
105 \DeclareOption{frm}{\frm@true}
106 \DeclareOption{nofrm}{\frm@false}
107
108
109 %% Figure-related tricks
110 \newif\iffig@ \fig@false
111 \DeclareOption{fig}{\fig@true}
112 \DeclareOption{nofig}{\fig@false}
113
114 %% Wrapfig package
115 \newif\ifwrpfig@ \wrpfig@true
116 \DeclareOption{nowrpfig}{\wrpfig@false}
117
118
119 %% Table-related tricks
120 \newif\iftab@ \tab@false
121 \DeclareOption{tab}{\tab@true}
122 \DeclareOption{notab}{\tab@false}
123
124
125 %% Algorithm-related tricks
126 \newif\ifalg@ \alg@false
127 \DeclareOption{alg}{\alg@true}
128 \DeclareOption{noalg}{\alg@false}
129

```

### Option-processing code:

```

130
131 \DeclareOption*{\PackageWarning{fmodcmac}{Unknown~'\CurrentOption'}}}%
132
133 \ExecuteOptions{aux,txtgen,mthgen,txt,mth,com,grp,gam,log,aut}%
134
135 \ProcessOptions\relax%
136
137 \ifcsdef{if@twocolumn}{\newif\if@twocolumn}
138

```

### Package main body:

```

139
140 %%*****
141 %%** Auxiliary Alphabet Letters *****
142 %%*****

```

$\omicron$  Auxiliary Greek lowercase letter: ... to do!

```

143 \csdef{omicron}{o}

```

$\Alpha$  Auxiliary Greek uppercase letters: ... to do!

```

... 144 \csdef{Alpha}{A} \csdef{Beta}{B} \csdef{Epsilon}{E} \csdef{varEpsilon}{E}
145 \csdef{Zeta}{Z} \csdef{Eta}{H} \csdef{Iota}{I} \csdef{Kappa}{K}
146 \csdef{varKappa}{K} \csdef{Mu}{M} \csdef{Nu}{N} \csdef{Omicron}{O}
147 \csdef{Rho}{P} \csdef{varRho}{P} \csdef{Tau}{T} \csdef{Chi}{X}
148 %%*****
149 %%*****
150 %%** Tools *****
151 %%*****

```

**\empchk Emptiness check:** `\empchk{<A>}{<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”

```
152 \DeclareRobustCommand{\empchk}[2]
153   {\if&#1&\else#2\fi}
```

**\defval Default value:** `\defval{<A>}{<B>}` 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”

```
154 \newcommand{\defval}[2]
155   {\if&#1&#2\else#1\fi}
```

```
156 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

**\arglef Left extension:** `\arglef{<A>}{<B>}` 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”

```
157 \DeclareRobustCommand{\arglef}[2]
158   {\empchk{#2}{#1#2}}
```

**\argrig Right extension:** `\argrig{<A>}{<B>}` 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”

```
159 \DeclareRobustCommand{\argrig}[2]
160   {\empchk{#1}{#1#2}}
```

**\argmid Middle extension:** `\argmid{<A>}{<B>}{<C>}` evaluates to the concatenation  $\langle ABC \rangle$  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”

```
161 \DeclareRobustCommand{\argmid}[3]
162   {\empchk{#2}{#1#2#3}}
```

**\argsep Separators:** `\argsep{<A>}{<B>}{<C>}` 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”

```
163 \DeclareRobustCommand{\argsep}[3]
164   {\if&#1&#3\else#1\arglef{#2}{#3}\fi}
```

```
165 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

**\varcmd Variadic commands:** `\varcmd{<A>}{<B>}{<C>}{<D>}{<E>}{<F>} ... to do!`

```
166 \DeclareRobustCommand{\varcmd}[6]
167   {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
168     {\csname check#1arg\endcsname{\argsep{##1}{#4}{\empchk{##2}{##2}}}}}%
169   \expandafter\newcommand\csname check#1arg\endcsname[1]
170     {\csname @ifnextchar\endcsname%
171       \bgroup\csname gobble#1arg\endcsname{##1}{#2{##1#5}#6}}}%
172   \expandafter\newcommand\csname#1\endcsname[1]
173     {\csname check#1arg\endcsname{#3##1}}}
```

```

174 %%*****%

\seqoftag Sequence of tags: \seqoftag{<A>}{<B>}{<C>} ... to do!
175 \DeclareRobustCommand{\seqoftag}[3]
176   {\@for\itr:={#1}\do%
177     {\expandafter\csedef{\itr#2}%
178       {\noexpand\csname #3\endcsname{\itr}}}}

\seqofcmd Sequence of commands: \seqofcmd{<A>}{<B>}{<C>} ... to do!
179 \DeclareRobustCommand{\seqofcmd}[3]
180   {\@for\itr:={#1}\do%
181     {\expandafter\csedef{\itr#2}%
182       {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}

183 %%*****%

\seqoflatlow Sequence of Latin lowercase letters: \seqoflatlow{<A>}{<B>} ... to do!
184 \DeclareRobustCommand{\seqoflatlow}
185   {\seqoftag{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}}

\seqoflatupp Sequence of Latin uppercase letters: \seqoflatupp{<A>}{<B>} ... to do!
186 \DeclareRobustCommand{\seqoflatupp}
187   {\seqoftag{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}}

\seqoflatlet Sequence of Latin letters: \seqoflatlet{<A>}{<B>} ... to do!
188 \DeclareRobustCommand{\seqoflatlet}[2]
189   {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

190 %%*****%

\seqofgrklow Sequence of Greek lowercase letters: \seqofgrklow{<A>}{<B>} ... to do!
191 \DeclareRobustCommand{\seqofgrklow}
192   {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,zeta,eta,theta,vartheta,%
193     iota,kappa,varkappa,lambda,mu,nu,xi,omicron,pi,varpi,rho,varrho,sigma,%
194     varsigma,tau,upsilon,phi,varphi,chi,psi,omega}}

\seqofgrkupp Sequence of Greek uppercase letters: \seqofgrkupp{<A>}{<B>} ... to do!
195 \DeclareRobustCommand{\seqofgrkupp}
196   {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,Zeta,Eta,Theta,varTheta,%
197     Iota,Kappa,varKappa,Lambda,Mu,Nu,Xi,Omicron,Pi,varPi,Rho,varRho,Sigma,%
198     varSigma,Tau,Upsilon,Phi,varPhi,Chi,Psi,Omega}}

\seqofgrklet Sequence of Greek letters: \seqofgrklet{<A>}{<B>} ... to do!
199 \DeclareRobustCommand{\seqofgrklet}[2]
200   {\seqofgrklow{#1}{#2}\seqofgrkupp{#1}{#2}}

201 %%*****%

\seqoflow Sequence of lowercase letters: \seqoflow{<A>}{<B>} ... to do!
202 \DeclareRobustCommand{\seqoflow}[2]
203   {\seqoflatlow{#1}{#2}\seqofgrklow{#1}{#2}}

\seqofupp Sequence of uppercase letters: \seqofupp{<A>}{<B>} ... to do!
204 \DeclareRobustCommand{\seqofupp}[2]
205   {\seqoflatupp{#1}{#2}\seqofgrkupp{#1}{#2}}

\seqoflet Sequence of all letters: \seqoflet{<A>}{<B>} ... to do!
206 \DeclareRobustCommand{\seqoflet}[2]
207   {\seqoflow{#1}{#2}\seqofupp{#1}{#2}}

208 %%*****%

```

```

209 %*****%
210 %** Auxiliary Packages *****%
211 %*****%
212 \ifaux@
213
214 \ifamsdef@
215   % AMS Packages
216   \RequirePackage{mathtools}
217   \RequirePackage{amssymb}
218   \RequirePackage{stmaryrd}
219   \interdisplaylinepenalty=2500
220 \fi
221
222 \ifamsthm@
223   % AMS Theorem Tools
224   \RequirePackage{amsthm}
225 \fi
226
227 \ifthmtls@
228   % Extended Theorem Tools
229   \RequirePackage{thmtools}
230   \RequirePackage{thm-restate}
231 \fi
232
233 \ifenmtls@
234   % Enumeration Tools
235   \RequirePackage{paralist}
236 \fi
237
238 \ifhympref@
239   % Hyper References
240   \RequirePackage{hyperref}
241   \hypersetup {
242     pdfsubject      = {},
243     pdfkeywords     = {},
244     pdfproducer     = {},
245     pdfcreator      = {},
246     pdfpagemode     = {UseNone},
247     pdfstartview    = {FitH},
248     urlcolor        = {blue},
249     colorlinks
250   }
251 \fi
252
253 \iffnttts@
254   % Font Tools
255   \RequirePackage[final]{microtype}
256 \fi
257
258 \ifcrv@
259   % Camera-Ready Version
260
261   %...
262
263 \else
264   % Draft Version
265
266   %...
267
268   \ifchgbar@
269     % Change Bars
270     \RequirePackage{changebar}
271   \fi

```

```

272
273 \iflnum@
274 % Line Numbers
275 \if@twocolumn
276 \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
277 \else
278 \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
279 \fi
280 \fi
281
282 %...
283
284 \fi
285
286 \fi
287 %*****%
288 %*****%
289 %** Auxiliary Font Declarations *****%
290 %*****%

```

`\mathbbo` **Bbo Math Font:** ... to do!

```

291 \ifdef{\mathbbo}{\DeclareMathAlphabet{\mathbbo}{U}{bbold}{m}{n}}

```

`\matheus` **Eus Math Font:** ... to do!

```

292 \ifdef{\matheus}{\DeclareMathAlphabet{\matheus}{U}{eus}{m}{n}}

```

`\mathpzc` **Pzc Math Font:** ... to do!

```

293 \ifdef{\mathpzc}{\DeclareMathAlphabet{\mathpzc}{T1}{pzc}{m}{it}}

```

`\mathscr` **Scr Math Font:** ... to do!

```

294 \ifdef{\mathscr}{\DeclareMathAlphabet{\mathscr}{U}{rsfs}{m}{n}}

```

```

295 %*****%
296 %*****%
297 %** Text Meta Commands *****%
298 %*****%

```

`\newtxt` ... to do!

- `\newtxt[\rmfamily]{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxt[\sffamily]{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxt[\ttfamily]{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxt*[\rmfamily]{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxt*[\sffamily]{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxt*[\ttfamily]{Name}[sub][sup][Ext] = "NamesubExt"`

```

299 \DeclareRobustCommand{\newtxt}
300 {\@ifstar{\@snewtxt}{\@newtxt}}
301 \DeclareRobustCommandx{\@newtxt}[5][1=, 3=, 4=, 5=]
302 {\text{#1#2\txsubsup{#1}{#3}{#4}{#5}\xspace}}
303 \DeclareRobustCommandx{\@snewtxt}[5][1=, 3=, 4=, 5=]
304 {#1#2\txsubsup{#1}{#3}{#4}{#5}\normalfont\xspace}}

```

`\newtxtsty` ... to do!

- `\newtxtsty{\rmfamily}{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxtsty{\rmfamily}{\sffamily}{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxtsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxtsty*{\rmfamily}{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxtsty*{\rmfamily}{\sffamily}{Name}[sub][sup][Ext] = "NamesubExt"`
- `\newtxtsty*{\rmfamily}{\ttfamily}{Name}[sub][sup][Ext] = "NamesubExt"`

```

305 \DeclareRobustCommand{\newtxtsty}
306   {\@ifstar{\@snewtxtsty}{\@newtxtsty}}
307 \DeclareRobustCommandx{\@newtxtsty}[2][2=]
308   {\newtxt[\defval{#2}{#1}]}
309 \DeclareRobustCommandx{\@snewtxtsty}[2][2=]
310   {\newtxt*[\defval{#2}{#1}]}

```

\newtxtarg ... to do!

- \newtxtarg[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtarg\*[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtarg\*[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtarg\*[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”

```

311 \DeclareRobustCommand{\newtxtarg}
312   {\@ifstar{\@snewtxtarg}{\@newtxtarg}}
313 \DeclareRobustCommandx{\@newtxtarg}[7][1=, 3=, 4=, 5=, 7=]
314   {\newtxt[#1]{#2}[#3][#4][\argmid{#5}{#6}{#7}]}
315 \DeclareRobustCommandx{\@snewtxtarg}[7][1=, 3=, 4=, 5=, 7=]
316   {\newtxt*[#1]{#2}[#3][#4][\argmid{#5}{#6}{#7}]}

```

\newtxtargsty ... to do!

- \newtxtargsty[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtargsty[\rmfamily][\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtargsty[\rmfamily][\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtargsty\*[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtargsty\*[\rmfamily][\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”
- \newtxtargsty\*[\rmfamily][\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name<sup>sub</sup>Ext1(Arg)Ext2”

```

317 \DeclareRobustCommand{\newtxtargsty}
318   {\@ifstar{\@snewtxtargsty}{\@newtxtargsty}}
319 \DeclareRobustCommandx{\@newtxtargsty}[2][2=]
320   {\newtxtarg[\defval{#2}{#1}]}
321 \DeclareRobustCommandx{\@snewtxtargsty}[2][2=]
322   {\newtxtarg*[\defval{#2}{#1}]}

```

\newtxtoarg ... to do!

- \newtxtoarg[\rmfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoarg[\sffamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoarg[\ttfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoarg\*[\rmfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoarg\*[\sffamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoarg\*[\ttfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”

```

323 \DeclareRobustCommand{\newtxtoarg}
324   {\@ifstar{\@snewtxtoarg}{\@newtxtoarg}}
325 \DeclareRobustCommandx{\@newtxtoarg}[5][1=, 3=, 4=, 5=]
326   {\newtxarg[#1]{#2}[#3][#4][\#5]}
327 \DeclareRobustCommandx{\@snewtxtoarg}[5][1=, 3=, 4=, 5=]
328   {\newtxarg*[#1]{#2}[#3][#4][\#5]}

```

\newtxtoargsty ... to do!

- \newtxtoargsty[\rmfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoargsty[\rmfamily][\sffamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoargsty[\rmfamily][\ttfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoargsty\*[\rmfamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”
- \newtxtoargsty\*[\rmfamily][\sffamily]{Name}[sub][sup][Arg] = “Name<sup>sub</sup>(Arg)”



- $\backslash\text{newtxtoargsty}\{\backslash\text{rmfamily}\}\{\backslash\text{ttfamily}\}\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Arg}] = \text{“Name}_{\text{sub}}^{\text{sup}}(\text{Arg})\text{”}$

```

329 \DeclareRobustCommand{\newtxtoargsty}
330   {\@ifstar{\@snewtxtoargsty}{\@newtxtoargsty}}
331 \DeclareRobustCommandx{\@newtxtoargsty}[2][2=]
332   {\newtxtoarg[\defval{#2}{#1}]}
333 \DeclareRobustCommandx{\@snewtxtoargsty}[2][2=]
334   {\newtxtoarg*[\defval{#2}{#1}]}

```

$\backslash\text{newtxtpar}$  ... to do!

- $\backslash\text{newtxtpar}[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtpar}[\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtpar}[\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtpar}^*[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtpar}^*[\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtpar}^*[\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$

```

335 \DeclareRobustCommand{\newtxtpar}
336   {\@ifstar{\@snewtxtpar}{\@newtxtpar}}
337 \DeclareRobustCommandx{\@newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
338   {\newtxt[#1]{#2}[#3][#4][\argmid{#5}{#6}{#7}]}
339 \DeclareRobustCommandx{\@snewtxtpar}[7][1=, 3=, 4=, 5=, 7=]
340   {\newtxt*[#1]{#2}[#3][#4][\argmid{#5}{#6}{#7}]}

```

$\backslash\text{newtxtparsty}$  ... to do!

- $\backslash\text{newtxtparsty}[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtparsty}[\backslash\text{rmfamily}][\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtparsty}[\backslash\text{rmfamily}][\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtparsty}^*[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtparsty}^*[\backslash\text{rmfamily}][\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$
- $\backslash\text{newtxtparsty}^*[\backslash\text{rmfamily}][\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Ext1}]\{\text{Par}\}[\text{Ext2}] = \text{“Name}_{\text{sub}}^{\text{sup}}\text{Ext1}[\text{Par}]\text{Ext2}”$

```

341 \DeclareRobustCommand{\newtxtparsty}
342   {\@ifstar{\@snewtxtparsty}{\@newtxtparsty}}
343 \DeclareRobustCommandx{\@newtxtparsty}[2][2=]
344   {\newtxtpar[\defval{#2}{#1}]}
345 \DeclareRobustCommandx{\@snewtxtparsty}[2][2=]
346   {\newtxtpar*[\defval{#2}{#1}]}

```

$\backslash\text{newtxtopar}$  ... to do!

- $\backslash\text{newtxtopar}[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtopar}[\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtopar}[\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtopar}^*[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtopar}^*[\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtopar}^*[\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$

```

347 \DeclareRobustCommand{\newtxtopar}
348   {\@ifstar{\@snewtxtopar}{\@newtxtopar}}
349 \DeclareRobustCommandx{\@newtxtopar}[5][1=, 3=, 4=, 5=]
350   {\newtxtpar[#1]{#2}[#3][#4][#5]}
351 \DeclareRobustCommandx{\@snewtxtopar}[5][1=, 3=, 4=, 5=]
352   {\newtxtpar*[#1]{#2}[#3][#4][#5]}

```

$\backslash\text{newtxtoparsty}$  ... to do!

- $\backslash\text{newtxtoparsty}[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtoparsty}[\backslash\text{rmfamily}][\backslash\text{sffamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtoparsty}[\backslash\text{rmfamily}][\backslash\text{ttfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$
- $\backslash\text{newtxtoparsty}^*[\backslash\text{rmfamily}]\{\text{Name}\}_{\text{sub}}^{\text{sup}}[\text{Par}] = \text{“Name}_{\text{sub}}^{\text{sup}}[\text{Par}]”$

- $\newtxtoparsty*\{\rmfamily\}[\sfamily]{Name}[sub][sup][Par] = \text{“Name}_{sub}^{sup}[Par]”$
- $\newtxtoparsty*\{\rmfamily\}[\ttfamily]{Name}[sub][sup][Par] = \text{“Name}_{sub}^{sup}[Par]”$

```

353 \DeclareRobustCommand{\newtxtoparsty}
354   {\@ifstar{\@snewtxtoparsty}{\@newtxtoparsty}}
355 \DeclareRobustCommand{\@newtxtoparsty}[2][2=]
356   {\newtxtopar[\defval{#2}{#1}]}
357 \DeclareRobustCommand{\@snewtxtoparsty}[2][2=]
358   {\newtxtopar*\defval{#2}{#1}}

```

$\texttt{\textbackslash txtsubsup}$  ... to do!

- $\texttt{\textbackslash txtsubsup}\{sub\}\{\} = \text{“}_{sub}”$ ;  $\texttt{\textbackslash txtsubsup}\{\}\{sup\} = \text{“}^{sup}”$ ;  $\texttt{\textbackslash txtsubsup}\{sub\}\{sup\} = \text{“}_{sub}^{sup}”$
- $\texttt{\textbackslash txtsubsup}[\sfamily]{Aa}\{Bb\} = \text{“}_{Aa}^{Bb}”$
- $\texttt{\textbackslash txtsubsup}[\ttfamily]{Aa}\{Bb\} = \text{“}_{Aa}^{Bb}”$

```

359 \DeclareRobustCommand{\txtsubsup}[3][ ]
360   {\ensuremath{\empchk{#2}{_}\text{#1#2}}\empchk{#3}{^{\text{#1#3}}}}
361 %%*****%

```

$\texttt{\textbackslash txt}$  ... to do!

- $\texttt{\textbackslash txt}\{Name\}[sub][sup][Ext] = \text{“Name}_{sub}^{sup}Ext”$
- $\texttt{\textbackslash txt}[\scshape]\{Name\}[sub][sup][Ext] = \text{“NAME}_{SUB}^{SUP}EXT”$
- $\texttt{\textbackslash txt}[\bfseries]\{Name\}[sub][sup][Ext] = \text{“Name}_{sub}^{sup}Ext”$
- $\texttt{\textbackslash txt*}\{Name\}[sub][sup][Ext] = \text{“Name}_{sub}^{sup}Ext”$
- $\texttt{\textbackslash txt*}[\scshape]\{Name\}[sub][sup][Ext] = \text{“NAME}_{SUB}^{SUP}EXT”$
- $\texttt{\textbackslash txt*}[\bfseries]\{Name\}[sub][sup][Ext] = \text{“Name}_{sub}^{sup}Ext”$

```

362 \DeclareRobustCommand{\txt}
363   {\@ifstar{\newtxtsty}{\txtsty}}

```

$\texttt{\textbackslash txtarg}$  ... to do!

- $\texttt{\textbackslash txtarg}\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1(Arg)Ext2”$
- $\texttt{\textbackslash txtarg}[\scshape]\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“NAME}_{SUB}^{SUP}EXT1(ARG)EXT2”$
- $\texttt{\textbackslash txtarg}[\bfseries]\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1(Arg)Ext2”$
- $\texttt{\textbackslash txtarg*}\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1(Arg)Ext2”$
- $\texttt{\textbackslash txtarg*}[\scshape]\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“NAME}_{SUB}^{SUP}EXT1(ARG)EXT2”$
- $\texttt{\textbackslash txtarg*}[\bfseries]\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1(Arg)Ext2”$

```

364 \DeclareRobustCommand{\txtarg}
365   {\@ifstar{\newtxtargsty}{\txtsty}}

```

$\texttt{\textbackslash txtoarg}$  ... to do!

- $\texttt{\textbackslash txtoarg}\{Name\}[sub][sup][Arg] = \text{“Name}_{sub}^{sup}(Arg)”$
- $\texttt{\textbackslash txtoarg}[\scshape]\{Name\}[sub][sup][Arg] = \text{“NAME}_{SUB}^{SUP}(ARG)”$
- $\texttt{\textbackslash txtoarg}[\bfseries]\{Name\}[sub][sup][Arg] = \text{“Name}_{sub}^{sup}(Arg)”$
- $\texttt{\textbackslash txtoarg*}\{Name\}[sub][sup][Arg] = \text{“Name}_{sub}^{sup}(Arg)”$
- $\texttt{\textbackslash txtoarg*}[\scshape]\{Name\}[sub][sup][Arg] = \text{“NAME}_{SUB}^{SUP}(ARG)”$
- $\texttt{\textbackslash txtoarg*}[\bfseries]\{Name\}[sub][sup][Arg] = \text{“Name}_{sub}^{sup}(Arg)”$

```

366 \DeclareRobustCommand{\txtoarg}
367   {\@ifstar{\newtxtoargsty}{\txtsty}}

```

$\texttt{\textbackslash txtpar}$  ... to do!

- $\texttt{\textbackslash txtpar}\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1[Par]Ext2”$
- $\texttt{\textbackslash txtpar}[\scshape]\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = \text{“NAME}_{SUB}^{SUP}EXT1[PAR]EXT2”$
- $\texttt{\textbackslash txtpar}[\bfseries]\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1[Par]Ext2”$
- $\texttt{\textbackslash txtpar*}\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = \text{“Name}_{sub}^{sup}Ext1[Par]Ext2”$
- $\texttt{\textbackslash txtpar*}[\scshape]\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = \text{“NAME}_{SUB}^{SUP}EXT1[PAR]EXT2”$

```

    • \txtpar*[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesupsubExt1[Par]Ext2"
368 \DeclareRobustCommand{\txtpar}
369   {\@ifstar{\newtxtparsty*{\txtsty}}{\newtxtparsty{\txtsty}}}

\txtopar ... to do!
    • \txtopar{Name}[sub][sup][Par] = "Namesupsub[Par]"
    • \txtopar[\scshape]{Name}[sub][sup][Par] = "NAMEsupSUB[PAR]"
    • \txtopar[\bfseries]{Name}[sub][sup][Par] = "Namesupsub[Par]"
    • \txtopar*{Name}[sub][sup][Par] = "Namesupsub[Par]"
    • \txtopar*[\scshape]{Name}[sub][sup][Par] = "NAMEsupSUB[PAR]"
    • \txtopar*[\bfseries]{Name}[sub][sup][Par] = "Namesupsub[Par]"
370 \DeclareRobustCommand{\txtopar}
371   {\@ifstar{\newtxtoparsty*{\txtsty}}{\newtxtoparsty{\txtsty}}}

\txststy ... to do!
372 \newcommand{\txststy}
373   {\mdseries\upshape\rmfamily}

374 %%*****%

\cmdtxt ... to do!
    • \cmdtxt{NewCmd}; \newcommand{\txststyNewCmd}{\scshape\ttfamily};
      \txtNewCmd{Name}[sub][sup][Ext] = NAMEsupSUBEXT
      \txtNewCmd*{Name}[sub][sup][Ext] = NAMEsupSUBEXT
375 \DeclareRobustCommand{\cmdtxt}[1]
376   {\csdef{txt#1}%
377     {\@ifstar%
378       {\newtxtsty*\csname txtsty#1\endcsname}}%
379     {\newtxtsty{\csname txtsty#1\endcsname}}}}

\cmdtxtarg ... to do!
    • \cmdtxtarg{NewCmd}; \newcommand{\txststyNewCmd}{\scshape\ttfamily};
      \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMEsupSUBEXT1(ARG)EXT2
      \txtargNewCmd*{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMEsupSUBEXT1(ARG)EXT2
380 \DeclareRobustCommand{\cmdtxtarg}[1]
381   {\csdef{txtarg#1}%
382     {\@ifstar%
383       {\newtxtargsty*\csname txtsty#1\endcsname}}%
384       {\newtxtargsty{\csname txtsty#1\endcsname}}}}

\cmdtxttoarg ... to do!
    • \cmdtxttoarg{NewCmd}; \newcommand{\txststyNewCmd}{\scshape\ttfamily};
      \txtoargNewCmd{Name}[sub][sup][Arg] = NAMEsupSUB(ARG)
      \txtoargNewCmd*{Name}[sub][sup][Arg] = NAMEsupSUB(ARG)
385 \DeclareRobustCommand{\cmdtxttoarg}[1]
386   {\csdef{txtoarg#1}%
387     {\@ifstar%
388       {\newtxtoargsty*\csname txtsty#1\endcsname}}%
389       {\newtxtoargsty{\csname txtsty#1\endcsname}}}}

\cmdtxtpar ... to do!
    • \cmdtxtpar{NewCmd}; \newcommand{\txststyNewCmd}{\scshape\ttfamily};
      \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMEsupSUBEXT1[PAR]EXT2
      \txtparNewCmd*{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMEsupSUBEXT1[PAR]EXT2
390 \DeclareRobustCommand{\cmdtxtpar}[1]
391   {\csdef{txtpar#1}%
392     {\@ifstar%
393       {\newtxtparsty*\csname txtsty#1\endcsname}}%
394       {\newtxtparsty{\csname txtsty#1\endcsname}}}}

```

\cmdtxtopar ... to do!

```

• \cmdtxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
  \txtoparNewCmd*{Name}[sub][sup][Par] = NAMESUB[PAR]

395 \DeclareRobustCommand{\cmdtxtopar}[1]
396   {\csdef{txtopar#1}%
397     {\@ifstar%
398       {\newtxtoparsty*{\csname txtsty#1\endcsname}}%
399       {\newtxtoparsty{\csname txtsty#1\endcsname}}}}

```

\cmdtxtall ... to do!

```

• \cmdtxtall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBExt
  \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBExt1(AR)Ext2
  \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(AR)
  \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBExt1[PAR]Ext2
  \txtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]

400 \DeclareRobustCommand{\cmdtxtall}[1]
401   {\cmdtxt{#1}\cmdtxtarg{#1}\cmdtxtoarg{#1}\cmdtxtpar{#1}\cmdtxtopar{#1}}

402 %%*****%

```

\usrtxt ... to do!

```

• \usrtxt{cmdName}{Suf}{};
  \cmdNameSuf = cmdName
  \cmdNameSuf* = cmdName
  \usrtxt{cmdName}{Suf}{arg};
  \cmdNameSuf{Arg} = cmdName(Arg)
  \cmdNameSuf*{Arg} = cmdName(Arg)
  \usrtxt{cmdName}{Suf}{par};
  \cmdNameSuf{Par} = cmdName[Par]
  \cmdNameSuf*{Par} = cmdName[Par]

• \usrtxt{cmdName}{Suf}{}[newName];
  \cmdNameSuf = newName
  \cmdNameSuf* = newName
  \usrtxt{cmdName}{Suf}{arg}[newName];
  \cmdNameSuf{Arg} = newName(Arg)
  \cmdNameSuf*{Arg} = newName(Arg)
  \usrtxt{cmdName}{Suf}{par}[newName];
  \cmdNameSuf{Par} = newName[Par]
  \cmdNameSuf*{Par} = newName[Par]

403 \DeclareRobustCommandx{\usrtxt}[4][4=]
404   {\csdef{#1#2}{%
405     \@ifstar%
406     {\csname txt#3\endcsname*\defval{#4}{#1}}%
407     {\csname txt#3\endcsname\defval{#4}{#1}}}}

408 %%*****%
409 %%*****%
410 %** Math Meta Commands *****%
411 %%*****%

```

\newmth ... to do!

- \newmth[mathrm]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmth[mathsf]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmth[mathtt]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmth\*[mathrm]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmth\*[mathsf]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmth\*[mathtt]{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”

```

412 \DeclareRobustCommand{\newmth}
413   {\@ifstar{\@snewmth}{\@newmth}}
414 \DeclareRobustCommandx{\@newmth}[5][1=, 3=, 4=, 5=]
415   {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}{#5}}}
416 \DeclareRobustCommandx{\@snewmth}[5][1=, 3=, 4=, 5=]
417   {\ensuremath{\csname#1\endcsname #2\mthsubsup{#3}{#4}{#5}}}

```

\newmthsty ... to do!

- \newmthsty{\mathrm}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmthsty{\mathsf}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmthsty{\mathtt}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmthsty\*{\mathrm}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmthsty\*{\mathsf}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”
- \newmthsty\*{\mathtt}{Name}[sub][sup][Ext] = “Name<sup>sup</sup><sub>sub</sub>Ext”

```

418 \DeclareRobustCommand{\newmthsty}
419   {\@ifstar{\@snewmthsty}{\@newmthsty}}
420 \DeclareRobustCommandx{\@newmthsty}[2][2=]
421   {\newmth[\defval{#2}{#1}]}
422 \DeclareRobustCommandx{\@snewmthsty}[2][2=]
423   {\newmth*[\defval{#2}{#1}]}

```

\newmtharg ... to do!

- \newmtharg{\mathrm}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmtharg{\mathsf}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmtharg{\mathtt}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmtharg\*{\mathrm}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmtharg\*{\mathsf}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmtharg\*{\mathtt}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”

```

424 \DeclareRobustCommand{\newmtharg}
425   {\@ifstar{\@snewmtharg}{\@newmtharg}}
426 \DeclareRobustCommandx{\@newmtharg}[7][1=, 3=, 4=, 5=, 7=]
427   {\newmth{#1}{#2}{#3}{#4}[\argmid{#5}{\left}{\right)}\arglef{!}{#7}]}
428 \DeclareRobustCommandx{\@snewmtharg}[7][1=, 3=, 4=, 5=, 7=]
429   {\newmth{#1}{#2}{#3}{#4}[\argmid{#5}{#6}{#7}]}

```

\newmthargsty ... to do!

- \newmthargsty{\mathrm}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmthargsty{\mathsf}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmthargsty{\mathtt}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmthargsty\*{\mathrm}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmthargsty\*{\mathsf}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”
- \newmthargsty\*{\mathtt}{Name}[sub][sup][Ext1]{Arg<sup>Ex</sup>{Ex}}[Ext2] = “Name<sup>sup</sup><sub>sub</sub>Ext1(Arg<sup>Ex</sup><sub>Ex</sub>)Ext2”

```

430 \DeclareRobustCommand{\newmthargsty}
431   {\@ifstar{\@snewmthargsty}{\@newmthargsty}}
432 \DeclareRobustCommandx{\@newmthargsty}[2][2=]
433   {\newmtharg[\defval{#2}{#1}]}
434 \DeclareRobustCommandx{\@snewmthargsty}[2][2=]
435   {\newmtharg*[\defval{#2}{#1}]}

```

\newmthoarg ... to do!

- \newmthoarg{\mathrm}{Name}[sub][sup][Arg<sup>Ex</sup>{Ex}] = “Name<sup>sup</sup><sub>sub</sub>(Arg<sup>Ex</sup><sub>Ex</sub>)”

- ```

436 \DeclareRobustCommand{\newmthoarg}
437   {\@ifstar{\@snewmthoarg}{\@newmthoarg}}
438 \DeclareRobustCommandx{\@newmthoarg}[5][1=, 3=, 4=, 5=]
439   {\newmtharg{#1}{#2}{#3}[#4][#5]}
440 \DeclareRobustCommandx{\@snewmthoarg}[5][1=, 3=, 4=, 5=]
441   {\newmtharg*{#1}{#2}{#3}[#4][#5]}

```

- `\newmthoargsty{\mathrm}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”
- `\newmthoargsty{\mathsf}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”
- `\newmthoargsty{\mathtt}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”
- `\newmthoargsty*{\mathrm}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”
- `\newmthoargsty*{\mathsf}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”
- `\newmthoargsty*{\mathtt}{Name}[sub][sup][Arg^{Ex^{Ex}}]` = “Name<sub>sub</sub><sup>sup</sup>(Arg<sup>Ex<sup>Ex</sup></sup>)”

- `\newmthpar[\mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`
- `\newmthpar[\mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`
- `\newmthpar[\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`
- `\newmthpar*[\mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`
- `\newmthpar*[\mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`
- `\newmthpar*[\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1[ParExEx]Ext2"`

```

454 \DeclareRobustCommand{\newmthparsty}
455   {\@ifstar{\@snewmthparsty}{\@newmthparsty}}
456 \DeclareRobustCommandx{\@newmthparsty}[2][2=]
457   {\newmthpar[\defval{#2}{#1}]}
458 \DeclareRobustCommandx{\@snewmthparsty}[2][2=]
459   {\newmthpar*[\defval{#2}{#1}]}

```

\newmthopar ... to do!

- $\newmthopar{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthopar{\mathrmsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthopar{\mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthopar*{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthopar*{\mathrmsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthopar*{\mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$

```

460 \DeclareRobustCommand{\newmthopar}
461   {\@ifstar{\@snewmthopar}{\@newmthopar}}
462 \DeclareRobustCommandx{\@newmthopar}[5][1=, 3=, 4=, 5=]
463   {\newmthpar{#1}{#2}{#3}{#4}[]{}{#5}[]}
464 \DeclareRobustCommandx{\@snewmthopar}[5][1=, 3=, 4=, 5=]
465   {\newmthpar*{#1}{#2}{#3}{#4}[]{}{#5}[]}

```

\newmthoparsty ... to do!

- $\newmthoparsty{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthoparsty{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthoparsty{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthoparsty*{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthoparsty*{\mathrmsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$
- $\newmthoparsty*{\mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}] = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}{\mathrm{Ex}}]"}$

```

466 \DeclareRobustCommand{\newmthoparsty}
467   {\@ifstar{\@snewmthoparsty}{\@newmthoparsty}}
468 \DeclareRobustCommandx{\@newmthoparsty}[2][2=]
469   {\newmthopar[\defval{#2}{#1}]}
470 \DeclareRobustCommandx{\@snewmthoparsty}[2][2=]
471   {\newmthopar*[\defval{#2}{#1}]}

```

\mthsubsup ... to do!

```

472 \DeclareRobustCommand{\mthsubsup}[2]
473   {\empchk{#1}{_}{#1}}{\empchk{#2}{^}{#2}}
474 %%*****

```

\mth ... to do!

- $\mth{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$
- $\mth{\mathrm{b}}{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$
- $\mth{\mathrm{t}}{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$
- $\mth*{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$
- $\mth*\mathrm{b}{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$
- $\mth*\mathrm{t}{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext} = \text{"Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}"}$

```

475 \DeclareRobustCommand{\mth}
476   {\@ifstar{\newmthsty}{\mthsty}}{\newmthsty{\mthsty}}

```

\mtharg ... to do!





```

• \cmdmth{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthNewCmd{Name}[sub][sup][Ext] = NamesubsubExt
\mthNewCmd*{Name}[sub][sup][Ext] = NamesubsubExt

488 \DeclareRobustCommand{\cmdmth}[1]
489   {\csdef{mth#1}%
490     {\@ifstar{\newmthsty*{mthsty#1}}{\newmthsty{mthsty#1}}}}

\cmdmtharg ... to do!

• \cmdmtharg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthargNewCmd{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesubsubExt1(ArgExsubExt1)Ext2
\mthargNewCmd*{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesubsubExt1(ArgExsubExt1)Ext2

491 \DeclareRobustCommand{\cmdmtharg}[1]
492   {\csdef{mtharg#1}%
493     {\@ifstar{\newmthargsty*{mthsty#1}}{\newmthargsty{mthsty#1}}}}

\cmdmthoarg ... to do!

• \cmdmthoarg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthoargNewCmd{Name}[sub][sup][ArgEx{Ex}} = Namesubsub(ArgExsubArgEx{Ex})
\mthoargNewCmd*{Name}[sub][sup][ArgEx{Ex}] = Namesubsub(ArgExsubArgEx{Ex})

494 \DeclareRobustCommand{\cmdmthoarg}[1]
495   {\csdef{mthoarg#1}%
496     {\@ifstar{\newmthoargsty*{mthsty#1}}{\newmthoargsty{mthsty#1}}}}

\cmdmthpar ... to do!

• \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthparNewCmd{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesubsubExt1[ParExsubExt1]Ext2
\mthparNewCmd*{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesubsubExt1[ParExsubExt1]Ext2

497 \DeclareRobustCommand{\cmdmthpar}[1]
498   {\csdef{mthpar#1}%
499     {\@ifstar{\newmthparsty*{mthsty#1}}{\newmthparsty{mthsty#1}}}}

\cmdmthopar ... to do!

• \cmdmthopar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthoparNewCmd{Name}[sub][sup][ParEx{Ex}] = Namesubsub[ParExsubParEx{Ex}]
\mthoparNewCmd*{Name}[sub][sup][ParEx{Ex}] = Namesubsub[ParExsubParEx{Ex}]

500 \DeclareRobustCommand{\cmdmthopar}[1]
501   {\csdef{mthopar#1}%
502     {\@ifstar{\newmthoparsty*{mthsty#1}}{\newmthoparsty{mthsty#1}}}}

\cmdmthall ... to do!

• \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthNewCmd{Name}[sub][sup][Ext] = NamesubsubExt
\mthargNewCmd{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesubsubExt1(ArgExsubExt1)Ext2
\mthargNewCmd*{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesubsubExt1(ArgExsubExt1)Ext2
\mthoargNewCmd{Name}[sub][sup][ArgEx{Ex}] = Namesubsub(ArgExsubArgEx{Ex})
\mthoargNewCmd*{Name}[sub][sup][ArgEx{Ex}] = Namesubsub(ArgExsubArgEx{Ex})
\mthparNewCmd{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesubsubExt1[ParExsubExt1]Ext2
\mthparNewCmd*{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesubsubExt1[ParExsubExt1]Ext2
\mthoparNewCmd{Name}[sub][sup][ParEx{Ex}] = Namesubsub[ParExsubParEx{Ex}]
\mthoparNewCmd*{Name}[sub][sup][ParEx{Ex}] = Namesubsub[ParExsubParEx{Ex}]

503 \DeclareRobustCommand{\cmdmthall}[1]
504   {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

505 %%*****%

```

\usrmth ... to do!

- \usrmth{cmdName}{Suf}{};  
\cmdNameSuf = *cmdName*  
\cmdNameSuf\* = *cmdName*  
\usrmth{cmdName}{Suf}{arg};  
\cmdNameSuf{Arg<sup>Ex</sup>{Ex}} = *cmdName*(*Arg*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*)  
\cmdNameSuf\*{Arg<sup>Ex</sup>{Ex}} = *cmdName*(*Arg*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*)  
\usrmth{cmdName}{Suf}{par};  
\cmdNameSuf{Par<sup>Ex</sup>{Ex}} = *cmdName*[*Par*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*]  
\cmdNameSuf\*{Par<sup>Ex</sup>{Ex}} = *cmdName*[*Par*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*]
- \usrmth{cmdName}{Suf}{}[newName];  
\cmdNameSuf = *newName*  
\cmdNameSuf\* = *newName*  
\usrmth{cmdName}{Suf}{arg}[newName];  
\cmdNameSuf{Arg<sup>Ex</sup>{Ex}} = *newName*(*Arg*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*)  
\cmdNameSuf\*{Arg<sup>Ex</sup>{Ex}} = *newName*(*Arg*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*)  
\usrmth{cmdName}{Suf}{par}[newName];  
\cmdNameSuf{Par<sup>Ex</sup>{Ex}} = *newName*[*Par*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*]  
\cmdNameSuf\*{Par<sup>Ex</sup>{Ex}} = *newName*[*Par*<sup>*E<sub>x</sub>*</sup>*E<sub>x</sub>*]

506 \DeclareRobustCommandx{\usrmth}[4][4=]

507 {\csdef{#1#2}{%

508 \@ifstar%

509 {\csname mth#3\endcsname\*{\defval{#4}{#1}}}%

510 {\csname mth#3\endcsname{\defval{#4}{#1}}}}}

511 %%\*\*\*\*\*%

\usrmthlatlow ... to do!

512 \DeclareRobustCommandx{\usrmthlatlow}[4][4=]

513 {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}

\usrmthlatupp ... to do!

514 \DeclareRobustCommandx{\usrmthlatupp}[4][4=]

515 {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}

\usrmthlatlet ... to do!

516 \DeclareRobustCommandx{\usrmthlatlet}[4][4=]

517 {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}

\usrmthgrklow ... to do!

518 \DeclareRobustCommandx{\usrmthgrklow}[4][4=]

519 {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}

\usrmthgrkupp ... to do!

520 \DeclareRobustCommandx{\usrmthgrkupp}[4][4=]

521 {\usrmth{#1}{#2}{#3}[#4]\seqofgrkupp{#1#2}{mth#3}}

\usrmthgrklet ... to do!

522 \DeclareRobustCommandx{\usrmthgrklet}[4][4=]

523 {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}

\usrmthlow ... to do!

524 \DeclareRobustCommandx{\usrmthlow}[4][4=]

525 {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}

\usrmthupp ... to do!

526 \DeclareRobustCommandx{\usrmthupp}[4][4=]

527 {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}

```

\usrmthlet ... to do!
528 \DeclareRobustCommandx{\usrmthlet}[4][4=]
529   {\usrmth{#1}{#2}{#3}{#4}\seqoflet{#1#2}{mth#3}}

530 %%*****
531 %%*****
532 %%** Text Macro Generators *****
533 %%*****
534 \iftxtgen@

\txtdf ... to do!
...
• \txtdf{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
• \txtargdf{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
• \txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
535 %% Style for Definitions
536 \cmdtxtall{def}\newcommand{\txtstydef}{\normalfont\bfseries\em}

\cmdtxtdef ... to do!
• \cmdtxtdef{cmdName};
  \cmdName[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
• \cmdtxtdef{cmdName}[newName];
  \cmdName[sub][sub][ext] =  $newName_{sub}^{sub}ext$ 
537 \DeclareRobustCommandx{\cmdtxtdef}[2][2=]
538   {\usrtxt{#1}{-}{def}[#2]}

\cmdtxtargdef ... to do!
• \cmdtxtargdef{cmdName};
  \cmdName[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
• \cmdtxtargdef{cmdName}[newName];
  \cmdName[sub][sub][ext1]{arg}[ext2] =  $newName_{sub}^{sub}ext1(arg)ext2$ 
539 \DeclareRobustCommandx{\cmdtxtargdef}[2][2=]
540   {\usrtxt{#1}{-}{argdef}[#2]}

\cmdtxtoargdef ... to do!
• \cmdtxtoargdef{cmdName};
  \cmdName[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
• \cmdtxtoargdef{cmdName}[newName];
  \cmdName[sub][sub][arg] =  $newName_{sub}^{sub}(arg)$ 
541 \DeclareRobustCommandx{\cmdtxtoargdef}[2][2=]
542   {\usrtxt{#1}{-}{oargdef}[#2]}

\cmdtxtpardef ... to do!
• \cmdtxtpardef{cmdName};
  \cmdName[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
• \cmdtxtpardef{cmdName}[newName];
  \cmdName[sub][sub][ext1]{par}[ext2] =  $newName_{sub}^{sub}ext1[par]ext2$ 
543 \DeclareRobustCommandx{\cmdtxtpardef}[2][2=]
544   {\usrtxt{#1}{-}{pardef}[#2]}

\cmdtxtopardef ... to do!
• \cmdtxtopardef{cmdName};
  \cmdName[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
• \cmdtxtopardef{cmdName}[newName];
  \cmdName[sub][sub][par] =  $newName_{sub}^{sub}[par]$ 
545 \DeclareRobustCommandx{\cmdtxtopardef}[2][2=]
546   {\usrtxt{#1}{-}{opardef}[#2]}

\txtabr ... to do!
...

```

- $\text{\texttt{\textit{txtabr}}\{Name\}[sub][sup][Ext]} = Name_{sub}^{sup}Ext$
- $\text{\texttt{\textit{xtargabr}}\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2]} = Name_{sub}^{sup}Ext1(Arg)Ext2$
- $\text{\texttt{\textit{txtparabr}}\{Name\}[sub][sup][Ext1]\{Par\}[Ext2]} = Name_{sub}^{sup}Ext1[Par]Ext2$

547 %% Style for Abbreviations

548  $\text{\texttt{\textit{cmdtxtall}}\{abr\}\newcommand\{\textit{txtstyabr}\}\{\em\}}$

$\text{\texttt{\textit{cmdtxtabr}}}$  ... to do!

- $\text{\texttt{\textit{cmdtxtabr}}\{cmdName\};}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext]} = cmdName_{sub}^{sub}ext$
- $\text{\texttt{\textit{cmdtxtabr}}\{cmdName\}[newName];}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext]} = newName_{sub}^{sub}ext$

549  $\text{\texttt{\textit{DeclareRobustCommandx}}\{\textit{cmdtxtabr}\}[2][2=]}$

550  $\text{\texttt{\textit{\usrtxt}}\{#1\}\{\}\{abr\}[#2]\}}$

$\text{\texttt{\textit{cmdxtargabr}}}$  ... to do!

- $\text{\texttt{\textit{cmdxtargabr}}\{cmdName\};}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext1]\{arg\}[ext2]} = cmdName_{sub}^{sub}ext1(arg)ext2$
- $\text{\texttt{\textit{cmdxtargabr}}\{cmdName\}[newName];}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext1]\{arg\}[ext2]} = newName_{sub}^{sub}ext1(arg)ext2$

551  $\text{\texttt{\textit{DeclareRobustCommandx}}\{\textit{cmdxtargabr}\}[2][2=]}$

552  $\text{\texttt{\textit{\usrtxt}}\{#1\}\{\}\{argabr\}[#2]\}}$

$\text{\texttt{\textit{cmdtxtoargabr}}}$  ... to do!

- $\text{\texttt{\textit{cmdtxtoargabr}}\{cmdName\};}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][arg]} = cmdName_{sub}^{sub}(arg)$
- $\text{\texttt{\textit{cmdtxtoargabr}}\{cmdName\}[newName];}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][arg]} = newName_{sub}^{sub}(arg)$

553  $\text{\texttt{\textit{DeclareRobustCommandx}}\{\textit{cmdtxtoargabr}\}[2][2=]}$

554  $\text{\texttt{\textit{\usrtxt}}\{#1\}\{\}\{oargabr\}[#2]\}}$

$\text{\texttt{\textit{cmdtxtparabr}}}$  ... to do!

- $\text{\texttt{\textit{cmdtxtparabr}}\{cmdName\};}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext1]\{par\}[ext2]} = cmdName_{sub}^{sub}ext1[par]ext2$
- $\text{\texttt{\textit{cmdtxtparabr}}\{cmdName\}[newName];}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][ext1]\{par\}[ext2]} = newName_{sub}^{sub}ext1[par]ext2$

555  $\text{\texttt{\textit{DeclareRobustCommandx}}\{\textit{cmdtxtparabr}\}[2][2=]}$

556  $\text{\texttt{\textit{\usrtxt}}\{#1\}\{\}\{parabr\}[#2]\}}$

$\text{\texttt{\textit{cmdtxtoparabr}}}$  ... to do!

- $\text{\texttt{\textit{cmdtxtoparabr}}\{cmdName\};}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][par]} = cmdName_{sub}^{sub}[par]$
- $\text{\texttt{\textit{cmdtxtoparabr}}\{cmdName\}[newName];}$   
 $\text{\texttt{\textit{cmdName}}[sub][sub][par]} = newName_{sub}^{sub}[par]$

557  $\text{\texttt{\textit{DeclareRobustCommandx}}\{\textit{cmdtxtoparabr}\}[2][2=]}$

558  $\text{\texttt{\textit{\usrtxt}}\{#1\}\{\}\{oparabr\}[#2]\}}$

559 %\*\*\*\*\*%

$\text{\texttt{\textit{txtname}}}$  ... to do!

- $\text{\texttt{\textit{txtname}}\{Name\}[sub][sup][Ext]} = NAME_{SUB}^{SUP}EXT$
- $\text{\texttt{\textit{txtargname}}\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2]} = NAME_{SUB}^{SUP}EXT1(ARG)EXT2$
- $\text{\texttt{\textit{txtpname}}\{Name\}[sub][sup][Ext1]\{Par\}[Ext2]} = NAME_{SUB}^{SUP}EXT1[PAR]EXT2$

560 %% Style for Names

561  $\text{\texttt{\textit{cmdtxtall}}\{name\}\newcommand\{\textit{txtstyname}\}\{\normalfont\mdseries\scshape\sffamily\}}$

$\text{\texttt{\textit{cmdtxtname}}}$  ... to do!

- `\cmdtxtname{cmdName};`  
`\cmdName[sub][sub][ext] = CMDNAMESUBSUBEXT`
- `\cmdtxtname{cmdName}[newName];`  
`\cmdName[sub][sub][ext] = NEWNAMESUBSUBEXT`

562 `\DeclareRobustCommandx{\cmdtxtname}[2][2=]`  
563 `{\usrtxt{#1}{-}{name}[#2]}`

`\cmdtxtargname ... to do!`

- `\cmdtxtargname{cmdName};`  
`\cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAMESUBSUBEXT1(ARG)EXT2`
- `\cmdtxtargname{cmdName}[newName];`  
`\cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAMESUBSUBEXT1(ARG)EXT2`

564 `\DeclareRobustCommandx{\cmdtxtargname}[2][2=]`  
565 `{\usrtxt{#1}{-}{argname}[#2]}`

`\cmdtxtoargname ... to do!`

- `\cmdtxtoargname{cmdName};`  
`\cmdName[sub][sub][arg] = CMDNAMESUBSUB(ARG)`
- `\cmdtxtoargname{cmdName}[newName];`  
`\cmdName[sub][sub][arg] = NEWNAMESUBSUB(ARG)`

566 `\DeclareRobustCommandx{\cmdtxtoargname}[2][2=]`  
567 `{\usrtxt{#1}{-}{oargname}[#2]}`

`\cmdtxtparname ... to do!`

- `\cmdtxtparname{cmdName};`  
`\cmdName[sub][sub][ext1]{par}[ext2] = CMDNAMESUBSUBEXT1[PAR]EXT2`
- `\cmdtxtparname{cmdName}[newName];`  
`\cmdName[sub][sub][ext1]{par}[ext2] = NEWNAMESUBSUBEXT1[PAR]EXT2`

568 `\DeclareRobustCommandx{\cmdtxtparname}[2][2=]`  
569 `{\usrtxt{#1}{-}{parname}[#2]}`

`\cmdtxtoparname ... to do!`

- `\cmdtxtoparname{cmdName};`  
`\cmdName[sub][sub][par] = CMDNAMESUBSUB[PAR]`
- `\cmdtxtoparname{cmdName}[newName];`  
`\cmdName[sub][sub][par] = NEWNAMESUBSUB[PAR]`

570 `\DeclareRobustCommandx{\cmdtxtoparname}[2][2=]`  
571 `{\usrtxt{#1}{-}{oparname}[#2]}`

`\txtcom ... to do!`

...

- `\txtcom{Name}[sub][sup][Ext] = NAMESUPSUBEXT`
- `\txtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUPSUBEXT1(ARG)EXT2`
- `\txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUPSUBEXT1[PAR]EXT2`

572 `%% Style for Complexities`  
573 `\cmdtxtall{com}\newcommand{\txtstycom}{\normalfont\mdseries\scshape\rmfamily}`

`\cmdtxtcom ... to do!`

- `\cmdtxtcom{cmdName};`  
`\cmdName[sub][sub][ext] = CMDNAMESUBSUBEXT`
- `\cmdtxtcom{cmdName}[newName];`  
`\cmdName[sub][sub][ext] = NEWNAMESUBSUBEXT`

574 `\DeclareRobustCommandx{\cmdtxtcom}[2][2=]`  
575 `{\usrtxt{#1}{-}{com}[#2]}`

`\cmdtxtargcom ... to do!`

- `\cmdtxtargcom{cmdName};`  
`\cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAMESUBSUBEXT1(ARG)EXT2`

```

    • \cmdtxtargcom{cmdName}[newName];
      \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAMESUBSUBEXT1(ARG)EXT2
576 \DeclareRobustCommandx{\cmdtxtargcom}[2][2=]
577   {\usrtxt{#1}{-}{argcom}[#2]}

\cmdtxtoargcom ... to do!
    • \cmdtxtoargcom{cmdName};
      \cmdName[sub][sub][arg] = CMDNAMESUBSUB(ARG)
    • \cmdtxtoargcom{cmdName}[newName];
      \cmdName[sub][sub][arg] = NEWNAMESUBSUB(ARG)
578 \DeclareRobustCommandx{\cmdtxtoargcom}[2][2=]
579   {\usrtxt{#1}{-}{oargcom}[#2]}

\cmdtxtparcom ... to do!
    • \cmdtxtparcom{cmdName};
      \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAMESUBSUBEXT1[PAR]EXT2
    • \cmdtxtparcom{cmdName}[newName];
      \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAMESUBSUBEXT1[PAR]EXT2
580 \DeclareRobustCommandx{\cmdtxtparcom}[2][2=]
581   {\usrtxt{#1}{-}{parcom}[#2]}

\cmdtxtoparcom ... to do!
    • \cmdtxtoparcom{cmdName};
      \cmdName[sub][sub][par] = CMDNAMESUBSUB[PAR]
    • \cmdtxtoparcom{cmdName}[newName];
      \cmdName[sub][sub][par] = NEWNAMESUBSUB[PAR]
582 \DeclareRobustCommandx{\cmdtxtoparcom}[2][2=]
583   {\usrtxt{#1}{-}{oparcom}[#2]}

584 \fi
585 %*****%
586 %*****%
587 %** Math Macro Generators *****%
588 %*****%
589 \ifmthgen@

\mthname ... to do!
...
    • \mthname{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargname{NAME}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthargname*(NAME)[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthparname{NAME}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
    • \mthparname*(NAME)[sub][sup][Ext1]{ParEx{Ex}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
590 %% Style for Names
591 \cmdmthall{name}\newcommand{\mthstyname}{\mathcal}

\AName ... 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
592 \seqoflatupp{Name}{mthname}

\cmdmthname ... to do!
    • \cmdmthname{CMDNAME};
      \CMDNAMEName[sub][sub][ext] =  $CMDNAME_{sub}^{sub}ext$ 
    • \cmdmthname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][ext] =  $NEWNAME_{sub}^{sub}ext$ 
593 \DeclareRobustCommandx{\cmdmthname}[2][2=]
594   {\usrmth{#1}{Name}{name}[#2]}

```

```

\cmdmthargname ... to do!
    • \cmdmthargname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{arg}[ext2] =  $CMDNAME_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][ext1]{arg}[ext2] =  $NEWNAME_{sub}^{sub}ext1(arg)ext2$ 
595 \DeclareRobustCommandx{\cmdmthargname}[2][2=]
596   {\usrmth{#1}{Name}{argname}[#2]}

\cmdmthoargname ... to do!
    • \cmdmthoargname{CMDNAME};
      \CMDNAMEName[sub][sub][arg] =  $CMDNAME_{sub}^{sub}(arg)$ 
    • \cmdmthoargname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][arg] =  $NEWNAME_{sub}^{sub}(arg)$ 
597 \DeclareRobustCommandx{\cmdmthoargname}[2][2=]
598   {\usrmth{#1}{Name}{oargname}[#2]}

\cmdmthparname ... to do!
    • \cmdmthparname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{par}[ext2] =  $CMDNAME_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][ext1]{par}[ext2] =  $NEWNAME_{sub}^{sub}ext1[par]ext2$ 
599 \DeclareRobustCommandx{\cmdmthparname}[2][2=]
600   {\usrmth{#1}{Name}{parname}[#2]}

\cmdmthoparname ... to do!
    • \cmdmthoparname{CMDNAME};
      \CMDNAMEName[sub][sub][par] =  $CMDNAME_{sub}^{sub}[par]$ 
    • \cmdmthoparname{cmdName}[NEWNAME];
      \cmdNameName[sub][sub][par] =  $NEWNAME_{sub}^{sub}[par]$ 
601 \DeclareRobustCommandx{\cmdmthoparname}[2][2=]
602   {\usrmth{#1}{Name}{oparname}[#2]}

\mthfam ... to do!
...
    • \mthfam{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargfam{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthargfam*{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthparfam{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
    • \mthparfam*{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
603 %% Style for Families
604 \cmdmthall{fam}\newcommand{\mthstyfam}{\mathscr}

\AFam ... to do!
...  $\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$ 
605 \seqoflatupp{Fam}{mthfam}

\cmdmthfam ... to do!
    • \cmdmthfam{CMDNAME};
      \CMDNAMEFam[sub][sub][ext] =  $CMDNAME_{sub}^{sub}ext$ 
    • \cmdmthfam{cmdName}[NEWNAME];
      \cmdNameFam[sub][sub][ext] =  $NEWNAME_{sub}^{sub}ext$ 
606 \DeclareRobustCommandx{\cmdmthfam}[2][2=]
607   {\usrmth{#1}{Fam}{fam}[#2]}

\cmdmthargfam ... to do!

```

- `\cmdmthargfam{CMDNAME};`  
 $\text{CMDNAMEFam}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg}) \text{ext2}$
- `\cmdmthargfam{cmdName}{NEWNAME};`  
 $\text{cmdNameFam}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \mathcal{NEWNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg}) \text{ext2}$

608 `\DeclareRobustCommandx{\cmdmthargfam}[2][2=]`  
609 `{\usrmth{#1}{Fam}{argfam}{#2}}`

`\cmdmthoargfam ... to do!`

- `\cmdmthoargfam{CMDNAME};`  
 $\text{CMDNAMEFam}[\text{sub}][\text{sub}][\text{arg}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}}(\text{arg})$
- `\cmdmthoargfam{cmdFam}{NEWNAME};`  
 $\text{cmdFamFam}[\text{sub}][\text{sub}][\text{arg}] = \mathcal{NEWNAME} \mathcal{E}_{\text{sub}}^{\text{sub}}(\text{arg})$

610 `\DeclareRobustCommandx{\cmdmthoargfam}[2][2=]`  
611 `{\usrmth{#1}{Fam}{oargfam}{#2}}`

`\cmdmthparfam ... to do!`

- `\cmdmthparfam{CMDNAME};`  
 $\text{CMDNAMEFam}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}] \text{ext2}$
- `\cmdmthparfam{cmdName}{NEWNAME};`  
 $\text{cmdNameFam}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \mathcal{NEWNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}] \text{ext2}$

612 `\DeclareRobustCommandx{\cmdmthparfam}[2][2=]`  
613 `{\usrmth{#1}{Fam}{parfam}{#2}}`

`\cmdmthoparfam ... to do!`

- `\cmdmthoparfam{CMDNAME};`  
 $\text{CMDNAMEFam}[\text{sub}][\text{sub}][\text{par}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}}[\text{par}]$
- `\cmdmthoparfam{cmdFam}{NEWNAME};`  
 $\text{cmdFamFam}[\text{sub}][\text{sub}][\text{par}] = \mathcal{NEWNAME} \mathcal{E}_{\text{sub}}^{\text{sub}}[\text{par}]$

614 `\DeclareRobustCommandx{\cmdmthoparfam}[2][2=]`  
615 `{\usrmth{#1}{Fam}{oparfam}{#2}}`

`\mthcls ... to do!`

...

- `\mthcls{NAME}[sub][sup][Ext] = NAME  $\mathcal{E}_{\text{sub}}^{\text{sup}} \text{Ext}$`
- `\mthargcls{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NAME  $\mathcal{E}_{\text{sub}}^{\text{sup}} \text{Ext1}(\text{Arg}^{\text{Ex}^{\text{Ex}}}) \text{Ext2}$`
- `\mthargcls*{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NAME  $\mathcal{E}_{\text{sub}}^{\text{sup}} \text{Ext1}(\text{Arg}^{\text{Ex}^{\text{Ex}}}) \text{Ext2}$`
- `\mthparcls{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NAME  $\mathcal{E}_{\text{sub}}^{\text{sup}} \text{Ext1}[\text{Par}^{\text{Ex}^{\text{Ex}}}] \text{Ext2}$`
- `\mthparcls*{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NAME  $\mathcal{E}_{\text{sub}}^{\text{sup}} \text{Ext1}[\text{Par}^{\text{Ex}^{\text{Ex}}}] \text{Ext2}$`

616 `%% Style for Classes`  
617 `\cmdmthall{cls}\newcommand{\mthstcls}{\matheus}`

`\ACls ... to do!`

...  $A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z$

618 `\seqoflatupp{Cls}{mthcls}`

`\cmdmthcls ... to do!`

- `\cmdmthcls{CMDNAME};`  
 $\text{CMDNAMECls}[\text{sub}][\text{sub}][\text{ext}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext}$
- `\cmdmthcls{cmdName}{NEWNAME};`  
 $\text{cmdNameCls}[\text{sub}][\text{sub}][\text{ext}] = \mathcal{NEWNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext}$

619 `\DeclareRobustCommandx{\cmdmthcls}[2][2=]`  
620 `{\usrmth{#1}{Cls}{cls}{#2}}`

`\cmdmthargcls ... to do!`

- `\cmdmthargcls{CMDNAME};`  
 $\text{CMDNAMECls}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \mathcal{CMDNAME} \mathcal{E}_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg}) \text{ext2}$



```

    • \cmdmthargcls{cmdName}[NEWNAME];
      \cmdNameCls[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 
621 \DeclareRobustCommandx{\cmdmthargcls}[2][2=]
622   {\usrmth{#1}{Cls}{argcls}[#2]}

\cmdmthoargcls ... to do!

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

    • \cmdmthoargcls{cmdCls}[NEWNAME];
      \cmdClsCls[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
623 \DeclareRobustCommandx{\cmdmthoargcls}[2][2=]
624   {\usrmth{#1}{Cls}{oargcls}[#2]}

\cmdmthparcls ... to do!

    • \cmdmthparcls{CMDNAME};
      \CMDNAMECls[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2$ 

    • \cmdmthparcls{cmdName}[NEWNAME];
      \cmdNameCls[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
625 \DeclareRobustCommandx{\cmdmthparcls}[2][2=]
626   {\usrmth{#1}{Cls}{parcls}[#2]}

\cmdmthoparcls ... to do!

    • \cmdmthoparcls{CMDNAME};
      \CMDNAMECls[sub][sub][par] =  $\mathcal{CMDNAME}_{sub}^{sub}[par]$ 

    • \cmdmthoparcls{cmdCls}[NEWNAME];
      \cmdClsCls[sub][sub][par] =  $\mathcal{NEWNAME}_{sub}^{sub}[par]$ 
627 \DeclareRobustCommandx{\cmdmthoparcls}[2][2=]
628   {\usrmth{#1}{Cls}{oparcls}[#2]}

\mthsig ... to do!
...
    • \mthsig{Name}[sub][sup][Ext] =  $\mathcal{ame}_{sub}^{sup}Ext$ 

    • \mthargsig{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 

    • \mthargsig*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 

    • \mthparsig{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 

    • \mthparsig*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
629 %% Style for Signatures
630 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}

\asig ... to do!
...
 $a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z$ 
 $\mathcal{A}, \mathcal{B}, \mathcal{C}, \mathcal{D}, \mathcal{E}, \mathcal{F}, \mathcal{G}, \mathcal{H}, \mathcal{I}, \mathcal{J}, \mathcal{K}, \mathcal{L}, \mathcal{M}, \mathcal{N}, \mathcal{O}, \mathcal{P}, \mathcal{Q}, \mathcal{R}, \mathcal{S}, \mathcal{T}, \mathcal{U}, \mathcal{V}, \mathcal{W}, \mathcal{X}, \mathcal{Y}, \mathcal{Z}$ 
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \varkappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
631 \seqoflatlet{Sig}{mthsig}\seqofgrklow{Sig}{mthsig}

\cmdmthsig ... to do!

    • \cmdmthsig{cmdName};
      \cmdNameSig[sub][sub][ext] =  $cmd\mathcal{ame}_{sub}^{sub}ext$ 

    • \cmdmthsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext] =  $\mathcal{New}\mathcal{ame}_{sub}^{sub}ext$ 
632 \DeclareRobustCommandx{\cmdmthsig}[2][2=]
633   {\usrmth{#1}{Sig}{sig}[#2]}

\cmdmthargsig ... to do!

    • \cmdmthargsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $cmd\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 

```

```

    • \cmdmthargsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $\mathcal{N}ew\mathcal{N}ame_{sub}^{sub}ext1(arg)ext2$ 
634 \DeclareRobustCommandx{\cmdmthargsig}[2][2=]
635   {\usrmth{#1}{Sig}{argsig}[#2]}

\cmdmthoargsig ... to do!
    • \cmdmthoargsig{cmdName};
      \cmdNameSig[sub][sub][arg] =  $cmd\mathcal{N}ame_{sub}^{sub}(arg)$ 
    • \cmdmthoargsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][arg] =  $\mathcal{N}ew\mathcal{N}ame_{sub}^{sub}(arg)$ 
636 \DeclareRobustCommandx{\cmdmthoargsig}[2][2=]
637   {\usrmth{#1}{Sig}{oargsig}[#2]}

\cmdmthparsig ... to do!
    • \cmdmthparsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{par}[ext2] =  $cmd\mathcal{N}ame_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{par}[ext2] =  $\mathcal{N}ew\mathcal{N}ame_{sub}^{sub}ext1[par]ext2$ 
638 \DeclareRobustCommandx{\cmdmthparsig}[2][2=]
639   {\usrmth{#1}{Sig}{parsig}[#2]}

\cmdmthoparsig ... to do!
    • \cmdmthoparsig{cmdName};
      \cmdNameSig[sub][sub][par] =  $cmd\mathcal{N}ame_{sub}^{sub}[par]$ 
    • \cmdmthoparsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][par] =  $\mathcal{N}ew\mathcal{N}ame_{sub}^{sub}[par]$ 
640 \DeclareRobustCommandx{\cmdmthoparsig}[2][2=]
641   {\usrmth{#1}{Sig}{oparsig}[#2]}

\mthstr ... to do!
...
    • \mthstr{Name}[sub][sup][Ext] =  $\mathcal{N}ame_{sub}^{sup}Ext$ 
    • \mthargstr{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{N}ame_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthargstr*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{N}ame_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthparstr{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{N}ame_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
    • \mthparstr*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{N}ame_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
642 %% Style for Structures
643 \cmdmthall{str}\newcommand{\mthstystyr}{\mathfrak}

\vaStr ... 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
    α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
644 \seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}

\cmdmthstr ... to do!
    • \cmdmthstr{cmdName};
      \cmdNameStr[sub][sub][ext] =  $cmd\mathcal{N}ame_{sub}^{sub}ext$ 
    • \cmdmthstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext] =  $\mathcal{N}ew\mathcal{N}ame_{sub}^{sub}ext$ 
645 \DeclareRobustCommandx{\cmdmthstr}[2][2=]
646   {\usrmth{#1}{Str}{str}[#2]}

\cmdmthargstr ... to do!
    • \cmdmthargstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] =  $cmd\mathcal{N}ame_{sub}^{sub}ext1(arg)ext2$ 

```

```

    • \cmdmthargstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = \newNamesubext1(arg)ext2
647 \DeclareRobustCommandx{\cmdmthargstr}[2][2=]
648   {\usrmth{#1}{Str}{argstr}[#2]}

\cmdmthoargstr ... to do!
    • \cmdmthoargstr{cmdName};
      \cmdNameStr[sub][sub][arg] = cmdNamesub(arg)
    • \cmdmthoargstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][arg] = \newNamesub(arg)
649 \DeclareRobustCommandx{\cmdmthoargstr}[2][2=]
650   {\usrmth{#1}{Str}{oargstr}[#2]}

\cmdmthparstr ... to do!
    • \cmdmthparstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = cmdNamesubext1[par]ext2
    • \cmdmthparstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = \newNamesubext1[par]ext2
651 \DeclareRobustCommandx{\cmdmthparstr}[2][2=]
652   {\usrmth{#1}{Str}{parstr}[#2]}

\cmdmthoparstr ... to do!
    • \cmdmthoparstr{cmdName};
      \cmdNameStr[sub][sub][par] = cmdNamesub[par]
    • \cmdmthoparstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][par] = \newNamesub[par]
653 \DeclareRobustCommandx{\cmdmthoparstr}[2][2=]
654   {\usrmth{#1}{Str}{oparstr}[#2]}

\mthset ... to do!
...
    • \mthset{Name}[sub][sup][Ext] = NamesupExt
    • \mthargset{Name}[sub][sup][Ext1]{ArgEx{ExEx}}[Ext2] = NamesupExt1(ArgExExt1)Ext2
    • \mthargset*{Name}[sub][sup][Ext1]{ArgEx{ExEx}}[Ext2] = NamesupExt1(ArgExExt1)Ext2
    • \mthparset{Name}[sub][sup][Ext1]{ParEx{ExEx}}[Ext2] = NamesupExt1[ParExExt1]Ext2
    • \mthparset*{Name}[sub][sup][Ext1]{ParEx{ExEx}}[Ext2] = NamesupExt1[ParExExt1]Ext2
655 %% Style for Sets
656 \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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
657 \seqoflet{Set}{mthset}

\cmdmthset ... to do!
    • \cmdmthset{cmdName};
      \cmdNameSet[sub][sub][ext] = cmdNamesubext
    • \cmdmthset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext] = NewNamesubext
658 \DeclareRobustCommandx{\cmdmthset}[2][2=]
659   {\usrmth{#1}{Set}{set}[#2]}

\cmdmthargset ... to do!
    • \cmdmthargset{cmdName};
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = cmdNamesubext1(arg)ext2

```

```

    • \cmdmthargset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = NewNamesubext1(arg)ext2
660 \DeclareRobustCommandx{\cmdmthargset}[2][2=]
661   {\usrmth{#1}{Set}{argset}[#2]}

\cmdmthoargset ... to do!
    • \cmdmthoargset{cmdName};
      \cmdNameSet[sub][sub][arg] = cmdNamesub(arg)
    • \cmdmthoargset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][arg] = NewNamesub(arg)
662 \DeclareRobustCommandx{\cmdmthoargset}[2][2=]
663   {\usrmth{#1}{Set}{oargset}[#2]}

\cmdmthparset ... to do!
    • \cmdmthparset{cmdName};
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = cmdNamesubext1[par]ext2
    • \cmdmthparset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = NewNamesubext1[par]ext2
664 \DeclareRobustCommandx{\cmdmthparset}[2][2=]
665   {\usrmth{#1}{Set}{parset}[#2]}

\cmdmthoparset ... to do!
    • \cmdmthoparset{cmdName};
      \cmdNameSet[sub][sub][par] = cmdNamesub[par]
    • \cmdmthoparset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][par] = NewNamesub[par]
666 \DeclareRobustCommandx{\cmdmthoparset}[2][2=]
667   {\usrmth{#1}{Set}{oparset}[#2]}

\cmdmthsetext ... to do!
668 \DeclareRobustCommandx{\cmdmthsetext}[3][2=, 3=]
669   {\cmdmthset{#1}[#2]\caselower[q]{#1}%
670   \usrmthlet{\thestring}{Sym}{sym}
671   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}%
672   \usrmthlet{\thestring}{Elm}{elm}
673   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}]}

\mthrel ... to do!
...
    • \mthrel{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargrel{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
    • \mthargrel*{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
    • \mthparrel{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
    • \mthparrel*{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
674 %% Style for Relations
675 \cmdmthall{rel}\newcommand{\mthstyrel}{\mathit}

\rel ... 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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, A, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
676 \seqoflet{Rel}{mthrel}

\cmdmthrel ... to do!
    • \cmdmthrel{cmdName};
      \cmdNameRel[sub][sub][ext] = cmdNamesubext

```

```

    • \cmdmthrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
677 \DeclareRobustCommandx{\cmdmthrel}[2][2=]
678   {\usrmth{#1}{Rel}{rel}[#2]}

\cmdmthargrel ... to do!
    • \cmdmthargrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub}ext1(arg)ext2$ 
679 \DeclareRobustCommandx{\cmdmthargrel}[2][2=]
680   {\usrmth{#1}{Rel}{argrel}[#2]}

\cmdmthoargrel ... to do!
    • \cmdmthoargrel{cmdName};
      \cmdNameRel[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
    • \cmdmthoargrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][arg] =  $NewName_{sub}^{sub}(arg)$ 
681 \DeclareRobustCommandx{\cmdmthoargrel}[2][2=]
682   {\usrmth{#1}{Rel}{oargrel}[#2]}

\cmdmthparrel ... to do!
    • \cmdmthparrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
683 \DeclareRobustCommandx{\cmdmthparrel}[2][2=]
684   {\usrmth{#1}{Rel}{parrel}[#2]}

\cmdmthoparrel ... to do!
    • \cmdmthoparrel{cmdName};
      \cmdNameRel[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
    • \cmdmthoparrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][par] =  $NewName_{sub}^{sub}[par]$ 
685 \DeclareRobustCommandx{\cmdmthoparrel}[2][2=]
686   {\usrmth{#1}{Rel}{oparrel}[#2]}

\mthfun ... to do!
...
    • \mthfun{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargfun{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
    • \mthargfun*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
    • \mthparfun{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
    • \mthparfun*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
687 %% Style for Functions
688 \cmdmthall{fun}\newcommand{\mthstyfun}{\mathsf}

\mathfun ... 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
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \vartheta, I, K, \Lambda, M, N, \Xi, O, \Pi, \textit{II}, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
689 \seqoflet{Fun}{mthfun}

\cmdmthfun ... to do!
    • \cmdmthfun{cmdName};
      \cmdNameFun[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 

```

- `\cmdmthfun{cmdName}[NewName];`  
`\cmdNameFun[sub][sub][ext] = NewNamesubsubext`

```
690 \DeclareRobustCommandx{\cmdmthfun}[2][2=]
691   {\usrmth{#1}{Fun}{fun}[#2]}
```

`\cmdmthargfun ... to do!`

- `\cmdmthargfun{cmdName};`  
`\cmdNameFun[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2`
- `\cmdmthargfun{cmdName}[NewName];`  
`\cmdNameFun[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2`

```
692 \DeclareRobustCommandx{\cmdmthargfun}[2][2=]
693   {\usrmth{#1}{Fun}{argfun}[#2]}
```

`\cmdmthoargfun ... to do!`

- `\cmdmthoargfun{cmdName};`  
`\cmdNameFun[sub][sub][arg] = cmdNamesubsub(arg)`
- `\cmdmthoargfun{cmdFun}[NewName];`  
`\cmdFunFun[sub][sub][arg] = NewNamesubsub(arg)`

```
694 \DeclareRobustCommandx{\cmdmthoargfun}[2][2=]
695   {\usrmth{#1}{Fun}{oargfun}[#2]}
```

`\cmdmthparfun ... to do!`

- `\cmdmthparfun{cmdName};`  
`\cmdNameFun[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2`
- `\cmdmthparfun{cmdName}[NewName];`  
`\cmdNameFun[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2`

```
696 \DeclareRobustCommandx{\cmdmthparfun}[2][2=]
697   {\usrmth{#1}{Fun}{parfun}[#2]}
```

`\cmdmthoparfun ... to do!`

- `\cmdmthoparfun{cmdName};`  
`\cmdNameFun[sub][sub][par] = cmdNamesubsub[par]`
- `\cmdmthoparfun{cmdFun}[NewName];`  
`\cmdFunFun[sub][sub][par] = NewNamesubsub[par]`

```
698 \DeclareRobustCommandx{\cmdmthoparfun}[2][2=]
699   {\usrmth{#1}{Fun}{oparfun}[#2]}
```

`\mthsym ... to do!`

```
... • \mthsym{Name}[sub][sup][Ext] = NamesupsubExt
• \mthargsym{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesupsubExt1(Arg^{Ex^{Ex}})Ext2
• \mthargsym*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesupsubExt1(Arg^{Ex^{Ex}})Ext2
• \mthparsym{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NamesupsubExt1[Par^{Ex^{Ex}}]Ext2
• \mthparsym*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NamesupsubExt1[Par^{Ex^{Ex}}]Ext2
700 %% Style for Symbols
701 \cmdmthall{sym}\newcommand{\mthstysym}{\mathhtt{}}
```

`\aSym ... 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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, T, Φ, Φ, X, Ψ, Ω
702 \seqoflet{Sym}{mthsym}
```

`\cmdmthsym ... to do!`

- `\cmdmthsym{cmdName};`  
`\cmdNameSym[sub][sub][ext] = cmdNamesubsubext`

- $\backslash\text{cmdmthsym}\{\text{cmdName}\}[\text{NewName}]$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext}$

```
703 \DeclareRobustCommandx{\cmdmthsym}[2][2=]
704 {\usrmth{\#1}\{Sym\}\{sym\}[\#2]}
```

$\backslash\text{cmdmthargsym}$  ... to do!

- $\backslash\text{cmdmthargsym}\{\text{cmdName}\}$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$
- $\backslash\text{cmdmthargsym}\{\text{cmdName}\}[\text{NewName}]$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{arg}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$

```
705 \DeclareRobustCommandx{\cmdmthargsym}[2][2=]
706 {\usrmth{\#1}\{Sym\}\{argsym\}[\#2]}
```

$\backslash\text{cmdmthoargsym}$  ... to do!

- $\backslash\text{cmdmthoargsym}\{\text{cmdName}\}$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{arg}] = \text{cmdName}_{\text{sub}}^{\text{sub}}(\text{arg})$
- $\backslash\text{cmdmthoargsym}\{\text{cmdSym}\}[\text{NewName}]$ ;  
 $\backslash\text{cmdSymSym}[\text{sub}][\text{sub}][\text{arg}] = \text{NewName}_{\text{sub}}^{\text{sub}}(\text{arg})$

```
707 \DeclareRobustCommandx{\cmdmthoargsym}[2][2=]
708 {\usrmth{\#1}\{Sym\}\{oargsym\}[\#2]}
```

$\backslash\text{cmdmthparsym}$  ... to do!

- $\backslash\text{cmdmthparsym}\{\text{cmdName}\}$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$
- $\backslash\text{cmdmthparsym}\{\text{cmdName}\}[\text{NewName}]$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{ext1}][\text{par}][\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$

```
709 \DeclareRobustCommandx{\cmdmthparsym}[2][2=]
710 {\usrmth{\#1}\{Sym\}\{parsym\}[\#2]}
```

$\backslash\text{cmdmthoparsym}$  ... to do!

- $\backslash\text{cmdmthoparsym}\{\text{cmdName}\}$ ;  
 $\backslash\text{cmdNameSym}[\text{sub}][\text{sub}][\text{par}] = \text{cmdName}_{\text{sub}}^{\text{sub}}[\text{par}]$
- $\backslash\text{cmdmthoparsym}\{\text{cmdSym}\}[\text{NewName}]$ ;  
 $\backslash\text{cmdSymSym}[\text{sub}][\text{sub}][\text{par}] = \text{NewName}_{\text{sub}}^{\text{sub}}[\text{par}]$

```
711 \DeclareRobustCommandx{\cmdmthoparsym}[2][2=]
712 {\usrmth{\#1}\{Sym\}\{oparsym\}[\#2]}
```

$\backslash\text{mthelm}$  ... to do!

```
... • \mthelm{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
• \mthargelm{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2
• \mthargelm*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2
• \mthparelm{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2
• \mthparelm*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2
713 %% Style for Elements
714 \cmdmthall{elm}\newcommand{\mthstyelm}{\mathnormal}
```

$\backslash\text{aElm}$  ... 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, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega
A, B, \Gamma, \Delta, E, \mathbb{E}, Z, H, \Theta, \mathbb{O}, I, K, \mathbb{K}, \mathbb{A}, M, N, \Xi, O, \mathbb{H}, \mathbb{I}, P, P, \Sigma, \mathbb{S}, T, \Upsilon, \Phi, \mathbb{P}, X, \Psi, \Omega
715 \seqoflet{Elm}{mthelm}
```

$\backslash\text{cmdmthelm}$  ... to do!

- $\backslash\text{cmdmthelm}\{\text{cmdName}\}$ ;  
 $\backslash\text{cmdNameElm}[\text{sub}][\text{sub}][\text{ext}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext}$

- `\cmdmthelm{cmdName}[NewName];`  
`\cmdNameElm[sub][sub][ext] = NewNamesubsubext`

```
716 \DeclareRobustCommandx{\cmdmthelm}[2][2=]
717 {\usrmth{#1}{Elm}{elm}[#2]}
```

`\cmdmthargelm ... to do!`

- `\cmdmthargelm{cmdName};`  
`\cmdNameElm[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2`
- `\cmdmthargelm{cmdName}[NewName];`  
`\cmdNameElm[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2`

```
718 \DeclareRobustCommandx{\cmdmthargelm}[2][2=]
719 {\usrmth{#1}{Elm}{argelm}[#2]}
```

`\cmdmthoargelm ... to do!`

- `\cmdmthoargelm{cmdName};`  
`\cmdNameElm[sub][sub][arg] = cmdNamesubsub(arg)`
- `\cmdmthoargelm{cmdElm}[NewName];`  
`\cmdElmElm[sub][sub][arg] = NewNamesubsub(arg)`

```
720 \DeclareRobustCommandx{\cmdmthoargelm}[2][2=]
721 {\usrmth{#1}{Elm}{oargelm}[#2]}
```

`\cmdmthparelm ... to do!`

- `\cmdmthparelm{cmdName};`  
`\cmdNameElm[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2`
- `\cmdmthparelm{cmdName}[NewName];`  
`\cmdNameElm[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2`

```
722 \DeclareRobustCommandx{\cmdmthparelm}[2][2=]
723 {\usrmth{#1}{Elm}{parelm}[#2]}
```

`\cmdmthoparelm ... to do!`

- `\cmdmthoparelm{cmdName};`  
`\cmdNameElm[sub][sub][par] = cmdNamesubsub[par]`
- `\cmdmthoparelm{cmdElm}[NewName];`  
`\cmdElmElm[sub][sub][par] = NewNamesubsub[par]`

```
724 \DeclareRobustCommandx{\cmdmthoparelm}[2][2=]
725 {\usrmth{#1}{Elm}{oparelm}[#2]}
```

```
726 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

`\cmdmthsymelm ... to do!`

- `\cmdmthsymelm{cmdName};`  
`\cmdNameSym[sub][sub][ext] = cmdNamesubsubext`  
`\cmdNameElm[sub][sub][ext] = cmdNamesubsubext`
- `\cmdmthsymelm{cmdName}[NewName];`  
`\cmdNameSym[sub][sub][ext] = NewNamesubsubext`  
`\cmdNameElm[sub][sub][ext] = NewNamesubsubext`

```
727 \DeclareRobustCommandx{\cmdmthsymelm}[2][2=]
728 {\cmdmthsym{#1}[#2]}
729 \cmdmthelm{#1}[#2]}
```

`\cmdmthargsymelm ... to do!`

- `\cmdmthargsymelm{cmdName};`  
`\cmdNameSym[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2`  
`\cmdNameElm[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2`
- `\cmdmthargsymelm{cmdName}[NewName];`  
`\cmdNameSym[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2`  
`\cmdNameElm[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2`



```

730 \DeclareRobustCommandx{\cmdmthargsymelm}[2][2=]
731   {\cmdmthargsym{#1}[#2]}
732   \cmdmthargelm{#1}[#2]}

```

\cmdmthoargsymelm ... to do!

```

• \cmdmthoargsymelm{cmdName};
  \cmdNameSym[sub][sub][arg] = cmdNamesubsub(arg)
  \cmdNameElm[sub][sub][arg] = cmdNamesubsub(arg)

• \cmdmthoargsymelm{cmdName}[NewName];
  \cmdNameSym[sub][sub][arg] = NewNamesubsub(arg)
  \cmdNameElm[sub][sub][arg] = NewNamesubsub(arg)

733 \DeclareRobustCommandx{\cmdmthoargsymelm}[2][2=]
734   {\cmdmthoargsym{#1}[#2]}
735   \cmdmthoargelm{#1}[#2]}

```

\cmdmthparsymelm ... to do!

```

• \cmdmthparsymelm{cmdName};
  \cmdNameSym[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
  \cmdNameElm[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2

• \cmdmthparsymelm{cmdName}[NewName];
  \cmdNameSym[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
  \cmdNameElm[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2

736 \DeclareRobustCommandx{\cmdmthparsymelm}[2][2=]
737   {\cmdmthparsym{#1}[#2]}
738   \cmdmthparelm{#1}[#2]}

```

\cmdmthoparsymelm ... to do!

```

• \cmdmthoparsymelm{cmdName};
  \cmdNameSym[sub][sub][par] = cmdNamesubsub[par]
  \cmdNameElm[sub][sub][par] = cmdNamesubsub[par]

• \cmdmthoparsymelm{cmdName}[NewName];
  \cmdNameSym[sub][sub][par] = NewNamesubsub[par]
  \cmdNameElm[sub][sub][par] = NewNamesubsub[par]

739 \DeclareRobustCommandx{\cmdmthoparsymelm}[2][2=]
740   {\cmdmthoparsym{#1}[#2]}
741   \cmdmthoparelm{#1}[#2]}

```

```

742 %%*****%

```

\mthluop ... to do!

```

... • \mthluop{\oplus}[sub][sup][Ext] =  $\oplus_{sub}^{sup} Ext$ 
      • \mthlbop{\oplus}[sub][sup][Ext] =  $\oplus_{sub}^{sup} Ext$ 

```

```

743 %% Style for \LaTeX Operators
744 \cmdmth{luop}\newcommand{\mthstyluop}[1]{\textstyle\mathop{#1}}
745 \cmdmth{lbop}\newcommand{\mthstylbop}[1]{\textstyle\mathbin{#1}}

```

\cmdmthluop ... to do!

```

... • \cmdmthluop{cmdName};
      \cmdNameUOp[sub][sub][ext] = cmdNamesubsubext

      • \cmdmthluop{cmdName}[\oplus];
        \cmdNameUOp[sub][sub][ext] =  $\oplus_{sub}^{sub} ext$ 

      • \cmdmthlbop{cmdName};
        \cmdNameBOp[sub][sub][ext] = cmdNamesubsubext

      • \cmdmthlbop{cmdName}[\oplus];
        \cmdNameBOp[sub][sub][ext] =  $\oplus_{sub}^{sub} ext$ 

```

```

746 \DeclareRobustCommandx{\cmdmthluop}[2][2=]
747   {\usrmth{#1}{UOp}{luop}[#2]}
748 \DeclareRobustCommandx{\cmdmthlbop}[2][2=]
749   {\usrmth{#1}{BOp}{lbop}[#2]}

```

```

\mthlrel ... to do!
    • \mthlrel{\preceq}[sub][sup][Ext] =  $\preceq_{sub}^{sup} Ext$ 
750 %% Style for \LaTeX Relations
751 \cmdmth{lrel}\newcommand{\mthstylrel}{\mathrel}

\cmdmthlrel ... to do!
    • \cmdmthlrel{cmdName};
      \cmdNameRel[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthlrel{cmdName}[\preceq];
      \cmdNameRel[sub][sub][ext] =  $\preceq_{sub}^{sub} ext$ 
752 \DeclareRobustCommand{\cmdmthlrel}[2][2=]
753   {\usrmth{#1}{Rel}{lrel}{#2}}

754 %%*****%%

\mthsnt ... to do!
...
    • \mthsnt{Name}[sub][sup][Ext] =  $Name_{sub}^{sup} Ext$ 
    • \mthargsnt{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup} Ext1 (Arg^{Ex^{Ex}}) Ext2$ 
    • \mthargsnt*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup} Ext1 (Arg^{Ex^{Ex}}) Ext2$ 
    • \mthparsnt{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup} Ext1 [Par^{Ex^{Ex}}] Ext2$ 
    • \mthparsnt*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup} Ext1 [Par^{Ex^{Ex}}] Ext2$ 
755 %% Style for Sentences
756 \cmdmthall{snt}\newcommand{\mthstysnt}{\mathsf}

\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
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \varnothing, I, K, \Lambda, M, N, \Xi, O, \Pi, \textit{II}, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
757 \seqoflet{Snt}{mthsnt}

\cmdmthsnt ... to do!
    • \cmdmthsnt{cmdName};
      \cmdNameSnt[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][ext] =  $NewName_{sub}^{sub} ext$ 
758 \DeclareRobustCommand{\cmdmthsnt}[2][2=]
759   {\usrmth{#1}{Snt}{snt}{#2}}

\cmdmthargsnt ... to do!
    • \cmdmthargsnt{cmdName};
      \cmdNameSnt[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub} ext1 (arg) ext2$ 
    • \cmdmthargsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub} ext1 (arg) ext2$ 
760 \DeclareRobustCommand{\cmdmthargsnt}[2][2=]
761   {\usrmth{#1}{Snt}{argsnt}{#2}}

\cmdmthoargsnt ... to do!
    • \cmdmthoargsnt{cmdName};
      \cmdNameSnt[sub][sub][arg] =  $cmdName_{sub}^{sub} (arg)$ 
    • \cmdmthoargsnt{cmdName}[NewName];
      \cmdNameSnt[sub][sub][arg] =  $NewName_{sub}^{sub} (arg)$ 
762 \DeclareRobustCommand{\cmdmthoargsnt}[2][2=]
763   {\usrmth{#1}{Snt}{oargsnt}{#2}}

\cmdmthparsnt ... to do!

```

- `\cmdmthparsnt{cmdName};`  
`\cmdNameSnt[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2`
- `\cmdmthparsnt{cmdName}[NewName];`  
`\cmdNameSnt[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2`

764 `\DeclareRobustCommandx{\cmdmthparsnt}[2][2=]`  
765 `{\usrmth{#1}{Snt}{parsnt}{#2}}`

`\cmdmthoparsnt ... to do!`

- `\cmdmthoparsnt{cmdName};`  
`\cmdNameSnt[sub][sub][par] = cmdNamesubsub[par]`
- `\cmdmthoparsnt{cmdName}[NewName];`  
`\cmdNameSnt[sub][sub][par] = NewNamesubsub[par]`

766 `\DeclareRobustCommandx{\cmdmthoparsnt}[2][2=]`  
767 `{\usrmth{#1}{Snt}{oparsnt}{#2}}`

`\mthfrm ... to do!`

...

- `\mthfrm{Name}[sub][sup][Ext] = NamesupsubExt`
- `\mthargfrm{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2`
- `\mthargfrm*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2`
- `\mthparfrm{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NamesupsubExt1[ParExEx]Ext2`
- `\mthparfrm*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NamesupsubExt1[ParExEx]Ext2`

768 `%% Style for Formulae`  
769 `\cmdmthall{frm}\newcommand{\mthstyfrm}{\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*  
*α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϱ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω*  
*A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω*

770 `\seqoflet{Frm}{mthfrm}`

`\cmdmthfrm ... to do!`

- `\cmdmthfrm{cmdName};`  
`\cmdNameFrm[sub][sub][ext] = cmdNamesubsubext`
- `\cmdmthfrm{cmdName}[NewName];`  
`\cmdNameFrm[sub][sub][ext] = NewNamesubsubext`

771 `\DeclareRobustCommandx{\cmdmthfrm}[2][2=]`  
772 `{\usrmth{#1}{Frm}{frm}{#2}}`

`\cmdmthargfrm ... to do!`

- `\cmdmthargfrm{cmdName};`  
`\cmdNameFrm[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2`
- `\cmdmthargfrm{cmdName}[NewName];`  
`\cmdNameFrm[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2`

773 `\DeclareRobustCommandx{\cmdmthargfrm}[2][2=]`  
774 `{\usrmth{#1}{Frm}{argfrm}{#2}}`

`\cmdmthoargfrm ... to do!`

- `\cmdmthoargfrm{cmdName};`  
`\cmdNameFrm[sub][sub][arg] = cmdNamesubsub(arg)`
- `\cmdmthoargfrm{cmdName}[NewName];`  
`\cmdNameFrm[sub][sub][arg] = NewNamesubsub(arg)`

775 `\DeclareRobustCommandx{\cmdmthoargfrm}[2][2=]`  
776 `{\usrmth{#1}{Frm}{oargfrm}{#2}}`

`\cmdmthparfrm ... to do!`

- `\cmdmthparfrm{cmdName};`  
 $\text{cmdNameFrm}[\text{sub}][\text{sub}][\text{ext1}]\{\text{par}\}[\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$
- `\cmdmthparfrm{cmdName}[NewName];`  
 $\text{cmdNameFrm}[\text{sub}][\text{sub}][\text{ext1}]\{\text{par}\}[\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}[\text{par}]\text{ext2}$

```

777 \DeclareRobustCommandx{\cmdmthparfrm}[2][2=]
778   {\usrmth{#1}\Frm}\parfrm{#2}}

\cmdmthoparfrm ... to do!



- \cmdmthoparfrm{cmdName};  

 $\text{cmdNameFrm}[\text{sub}][\text{sub}][\text{par}] = \text{cmdName}_{\text{sub}}^{\text{sub}}[\text{par}]$
- \cmdmthoparfrm{cmdName}[NewName];  

 $\text{cmdNameFrm}[\text{sub}][\text{sub}][\text{par}] = \text{NewName}_{\text{sub}}^{\text{sub}}[\text{par}]$



```

779 \DeclareRobustCommandx{\cmdmthoparfrm}[2][2=]
780   {\usrmth{#1}\Frm}\oparfrm{#2}}

781 %%*****
```


```

```

\mthmat ... to do!
...


- \mthmat{Name}[sub][sup][Ext] = Name_{sub}^{sup}Ext
- \mthargmat{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2
- \mthargmat*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2
- \mthparmat{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2
- \mthparmat*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2



```

782 %% Style for Matrices
783 \cmdmthall{mat}\newcommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}
```


```

```

\Mat ... 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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, T, Φ, Φ, X, Ψ, Ω

784 \seqoflet{Mat}{mthmat}
```

```

\cmdmthmat ... to do!



- \cmdmthmat{cmdName};  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{ext}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext}$
- \cmdmthmat{cmdName}[NewName];  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{ext}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext}$



```

785 \DeclareRobustCommandx{\cmdmthmat}[2][2=]
786   {\usrmth{#1}\Mat}\mat{#2}}
```


```

```

\cmdmthargmat ... to do!



- \cmdmthargmat{cmdName};  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{ext1}]\{\text{arg}\}[\text{ext2}] = \text{cmdName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$
- \cmdmthargmat{cmdName}[NewName];  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{ext1}]\{\text{arg}\}[\text{ext2}] = \text{NewName}_{\text{sub}}^{\text{sub}}\text{ext1}(\text{arg})\text{ext2}$



```

787 \DeclareRobustCommandx{\cmdmthargmat}[2][2=]
788   {\usrmth{#1}\Mat}\argmat{#2}}
```


```

```

\cmdmthoargmat ... to do!



- \cmdmthoargmat{cmdName};  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{arg}] = \text{cmdName}_{\text{sub}}^{\text{sub}}(\text{arg})$
- \cmdmthoargmat{cmdName}[NewName];  

 $\text{cmdNameMat}[\text{sub}][\text{sub}][\text{arg}] = \text{NewName}_{\text{sub}}^{\text{sub}}(\text{arg})$



```

789 \DeclareRobustCommandx{\cmdmthoargmat}[2][2=]
790   {\usrmth{#1}\Mat}\oargmat{#2}}
```


```

```

\cmdmthparmat ... to do!
    • \cmdmthparmat{cmdName};
      \cmdNameMat[sub][sub]{ext1}{par}{ext2} = cmdNamesubsubext1[par]ext2
    • \cmdmthparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub]{ext1}{par}{ext2} = NewNamesubsubext1[par]ext2
791 \DeclareRobustCommandx{\cmdmthparmat}[2][2=]
792   {\usrmth{#1}{Mat}{parmat}{#2}}

\cmdmthoparmat ... to do!
    • \cmdmthoparmat{cmdName};
      \cmdNameMat[sub][sub]{par} = cmdNamesubsub[par]
    • \cmdmthoparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub]{par} = NewNamesubsub[par]
793 \DeclareRobustCommandx{\cmdmthoparmat}[2][2=]
794   {\usrmth{#1}{Mat}{oparmat}{#2}}

\mthvec ... to do!
...
    • \mthvec{Name}[sub][sup]{Ext} = NamesubsupExt
    • \mthargvec{Name}[sub][sup]{Ext1}{ArgEx{Ex}}{Ext2} = NamesubsupExt1(ArgEx{Ex})Ext2
    • \mthargvec*{Name}[sub][sup]{Ext1}{ArgEx{Ex}}{Ext2} = NamesubsupExt1(ArgEx{Ex})Ext2
    • \mthparvec{Name}[sub][sup]{Ext1}{ParEx{Ex}}{Ext2} = NamesubsupExt1[ParEx{Ex}]Ext2
    • \mthparvec*{Name}[sub][sup]{Ext1}{ParEx{Ex}}{Ext2} = NamesubsupExt1[ParEx{Ex}]Ext2
795 %% Style for Vectors
796 \cmdmthall{vec}\newcommand{\mthstyvec}[1]{\boldsymbol{\mathit{#1}}}

\Vec ... 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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϱ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
797 \seqoflet{Vec}{mthvec}

\cmdmthvec ... to do!
    • \cmdmthvec{cmdName};
      \cmdNameVec[sub][sub]{ext} = cmdNamesubsubext
    • \cmdmthvec{cmdName}[NewName];
      \cmdNameVec[sub][sub]{ext} = NewNamesubsubext
798 \DeclareRobustCommandx{\cmdmthvec}[2][2=]
799   {\usrmth{#1}{Vec}{vec}{#2}}

\cmdmthargvec ... to do!
    • \cmdmthargvec{cmdName};
      \cmdNameVec[sub][sub]{ext1}{arg}{ext2} = cmdNamesubsubext1(arg)ext2
    • \cmdmthargvec{cmdName}[NewName];
      \cmdNameVec[sub][sub]{ext1}{arg}{ext2} = NewNamesubsubext1(arg)ext2
800 \DeclareRobustCommandx{\cmdmthargvec}[2][2=]
801   {\usrmth{#1}{Vec}{argvec}{#2}}

\cmdmthoargvec ... to do!
    • \cmdmthoargvec{cmdName};
      \cmdNameVec[sub][sub]{arg} = cmdNamesubsub(arg)
    • \cmdmthoargvec{cmdName}[NewName];
      \cmdNameVec[sub][sub]{arg} = NewNamesubsub(arg)
802 \DeclareRobustCommandx{\cmdmthoargvec}[2][2=]
803   {\usrmth{#1}{Vec}{oargvec}{#2}}

```

```

\cmdmthparvec ... to do!
    • \cmdmthparvec{cmdName};
      \cmdNameVec[sub][sub][ext1]{par}[ext2] =  $\text{cmdName}_{sub\text{ext1}}^{sub}[par]\text{ext2}$ 
    • \cmdmthparvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][ext1]{par}[ext2] =  $\text{NewName}_{sub\text{ext1}}^{sub}[par]\text{ext2}$ 
804 \DeclareRobustCommandx{\cmdmthparvec}[2][2=]
805   {\usrmth{#1}{Vec}{parvec}[#2]}

\cmdmthoparvec ... to do!
    • \cmdmthoparvec{cmdName};
      \cmdNameVec[sub][sub][par] =  $\text{cmdName}_{sub}^{sub}[par]$ 
    • \cmdmthoparvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][par] =  $\text{NewName}_{sub}^{sub}[par]$ 
806 \DeclareRobustCommandx{\cmdmthoparvec}[2][2=]
807   {\usrmth{#1}{Vec}{oparvec}[#2]}

808 \fi
809 %*****%
810 %*****%
811 %** Elementary Macros for Text *****%
812 %*****%
813 \iftxt@

\dotcheck    • A\dotcheck a\dotcheck.a = A.a. a
814 \DeclareRobustCommand{\dotcheck}
815   {\@ifnextchar.{.}{.\@}}

816 %** Latin Abbreviations *****%

\adhoc    • \adhoc = ad hoc
817 \cmdtxtabr{adhoc}[ad hoc]

\afortiori    • \afortiori = a fortiori
818 \cmdtxtabr{afortiori}[a fortiori]

\apriori    • \apriori = a priori
819 \cmdtxtabr{apriori}[a priori]

\aposteriori    • \aposteriori = a posteriori
820 \cmdtxtabr{aposteriori}[a posteriori]

\cf    • \cf = cf.
821 \cmdtxtabr{cf}[cf.\@]

\dedicto    • \dedicto = de dicto
822 \cmdtxtabr{dedicto}[de dicto]

\defacto    • \defacto = de facto
823 \cmdtxtabr{defacto}[de facto]

\dere    • \dere = de re
824 \cmdtxtabr{dere}[de re]

\divideetimpera    • \divideetimpera = divide et impera
825 \cmdtxtabr{divideetimpera}[divide et impera]

\eg    • \eg = e.g.
826 \cmdtxtabr{eg}[e.g.\@]

```

`\ergo`      • `\ergo = ergo`  
827 `\cmdtxtabr{ergo}`

`\errata`      • `\errata = errata`  
828 `\cmdtxtabr{errata}`

`\erratum`      • `\erratum = erratum`  
829 `\cmdtxtabr{erratum}`

`\etal`      • `\etal = et al.`  
830 `\cmdtxtabr{etal}[et al.\@]`

`\etc`      • `\etc = etc.`  
831 `\cmdtxtabr{etc}[etc.\@]`

`\ie`      • `\ie = i.e.`  
832 `\cmdtxtabr{ie}[i.e.\@]`

`\mutatismutandis`      • `\mutatismutandis = mutatis mutandis`  
833 `\cmdtxtabr{mutatismutandis}[mutatis mutandis]`

`\percontra`      • `\percontra = per contra`  
834 `\cmdtxtabr{percontra}[per contra]`

`\primafacie`      • `\primafacie = prima facie`  
835 `\cmdtxtabr{primafacie}[prima facie]`

`\viceversa`      • `\viceversa = vice versa`  
836 `\cmdtxtabr{viceversa}[vice versa]`

`\vs`      • `\vs = vs.`  
837 `\cmdtxtabr{vs}[vs.\@]`

`\viz`      • `\viz = viz.`  
838 `\cmdtxtabr{viz}[viz.\@]`  
839 `%%*****%`

`\Afortiori`      • `\Afortiori = A fortiori`  
840 `\cmdtxtabr{Afortiori}[A fortiori]`

`\Apriori`      • `\Apriori = A priori`  
841 `\cmdtxtabr{Apriori}[A priori]`

`\Aposteriori`      • `\Aposteriori = A posteriori`  
842 `\cmdtxtabr{Aposteriori}[A posteriori]`

`\Dedicto`      • `\Dedicto = De dicto`  
843 `\cmdtxtabr{Dedicto}[De dicto]`

`\Defacto`      • `\Defacto = De facto`  
844 `\cmdtxtabr{Defacto}[De facto]`

`\Dere`      • `\Dere = De re`  
845 `\cmdtxtabr{Dere}[De re]`

`\Divideetimperaper`      • `\Divideetimperaper = Divide et impera`  
846 `\cmdtxtabr{Divideetimperaper}[Divide et impera]`

\Eg • \Eg = *E.g.*

847 \cmdtxtabr{Eg}[E.g.\@]

\Errata • \Errata = *Errata*

848 \cmdtxtabr{Errata}

\Erratum • \Erratum = *Erratum*

849 \cmdtxtabr{Erratum}

\Mutatismutandis • \Mutatismutandis = *Mutatis mutandis*

850 \cmdtxtabr{Mutatismutandis}[Mutatis mutandis]

\Percontra • \Percontra = *Per contra*

851 \cmdtxtabr{Percontra}[Per contra]

\Primafacie • \Primafacie = *Prima facie*

852 \cmdtxtabr{Primafacie}[Prima facie]

\Viceversa • \Viceversa = *Vice versa*

853 \cmdtxtabr{Viceversa}[Vice versa]

854 %\*\* Italian Abbreviations \*\*\*\*\*%

...

855 %\*\*\*\*\*%

...

856 %\*\* French Abbreviations \*\*\*\*\*%

\ala • \ala = *à la*

857 \cmdtxtabr{ala}[\`a la]

\naif • \naif = *naïf*

858 \cmdtxtabr{naif}[na\`{i}f]

\naive • \naive = *naïve*

859 \cmdtxtabr{naive}[na\`{i}ve]

\role • \role = *rôle*

860 \cmdtxtabr{role}[r\`{o}le]

861 %\*\*\*\*\*%

\Role • \Role = *Rôle*

862 \cmdtxtabr{Role}[R\`{o}le]

863 %\*\* English Abbreviations \*\*\*\*\*%

\aka • \aka = *a.k.a.*

864 \cmdtxtabr{aka}[a.k.a.\@]

\contd • \contd = *contd.*

865 \cmdtxtabr{contd}[contd.\@]

\iff • \iff = *iff*

866 \cmdtxtabr{iff}

\iht • \iht = *i.h.t.*

867 \cmdtxtabr{iht}[i.h.t.\@]



```

\stx      • \stx = s.t.
868 \cmdtxtabr{stx}[s.t.\@]

\resp      • \resp = resp.
869 \cmdtxtabr{resp}[resp.\@]

\wrt      • \wrt = w.r.t.
870 \cmdtxtabr{wrt}[w.r.t.\@]

\wlogx      • \wlogx = w.l.o.g.
871 \cmdtxtabr{wlogx}[w.l.o.g.\@]

872 %%*****

\Contd      • \Contd = Contd.
873 \cmdtxtabr{Contd}[Contd.\@]

\Wlogx      • \Wlogx = W.l.o.g.
874 \cmdtxtabr{Wlogx}[W.l.o.g.\@]

875 \fi
876 %%*****

877 %%*****
878 %** Elementary Macros for Math *****
879 %%*****
880 \ifmth@
881 %** General Notation *****

\defeq ...
\seteq 882 \DeclareRobustCommand{\defeq}
883   {\@ifstar%
884     {\mthlbop{\stackrel{\text{\textup{def}}}{=}}{}}%
885     {\mthlbop{\triangleq}}}%
886 \DeclareRobustCommand{\seteq}
887   {\@ifstar{\mthlbop{\Coloneqq}}{\mthlbop{\coloneqq}}}
888 %%*****

\limp ...
... 889 \DeclareRobustCommand{\limp}
890   {\mthlbop{\rightarrow}}

\lcoimp ...
... 891 \DeclareRobustCommand{\lcoimp}
892   {\mthlbop{\leftrightarrow}}
893 %%*****

\implies ...
... 894 \DeclareRobustCommand{\implies}
895   {\mthlrel{\rightarrow}}
896 \DeclareRobustCommand{\notimplies}
897   {\mthlrel{\not\rightarrow}}

\implied ...
... 898 \DeclareRobustCommand{\implied}
899   {\mthlrel{\leftarrow}}
900 \DeclareRobustCommand{\notimplied}
901   {\mthlrel{\not\leftarrow}}

```

```

\coimplies ...
... 902 \DeclareRobustCommand{\coimplies}
903   {\mthlrel{\Leftrightarrow}}
904 \DeclareRobustCommand{\notcoimplies}
905   {\mthlrel{\not\!\Leftrightarrow}}
906 %%*****%

\cmodels ...
... 907 \DeclareRobustCommand{\cmodels}
908   {\mthlrel{\models}}
909 \DeclareRobustCommand{\notcmodels}
910   {\mthlrel{\not\models}}

\cequiv ...
... 911 \DeclareRobustCommand{\cequiv}
912   {\mthlrel{\equiv}}
913 \DeclareRobustCommand{\notcequiv}
914   {\mthlrel{\not\equiv}}
915 %%*****%

\denot ...
916 \DeclareRobustCommand{\denot}
917   {\@ifstar{\@sdenot}{\@denot}}
918 \DeclareRobustCommand{\@denot}[1]
919   {\mth{\argmid{\left\llbracket}{\#1}{\right\rrbracket}}}
920 \DeclareRobustCommand{\@sdenot}[1]
921   {\mth*{\argmid{\llbracket}{\#1}{\rrbracket}}}
922 %%*****%

\dual ...
\adj 923 \DeclareRobustCommand{\dual}[1]
... 924   {\mth{\overline{\#1}}}
925 \DeclareRobustCommand{\adj}[1]
926   {\mth{\mathring{\#1}}}
927 \DeclareRobustCommand{\der}[1]
928   {\mth{\widehat{\#1}}}
929 \DeclareRobustCommand{\trn}[1]
930   {\mth{\widetilde{\#1}}}

\vec ...
931 \DeclareRobustCommand{\vec}
932   {\@ifstar{\@svec}{\@vec}}
933 \DeclareRobustCommand{\@vec}[1]
934   {\mth{\mathaccent"017E{\#1}}}
935 \DeclareRobustCommand{\@svec}[1]
936   {\mth{\overline{\#1}}}
937 %%*****%

\enumeration ...
... 938 \varcmd{enumeration}{\mth*}{\{,\}{}}
939 \varcmd{enumerationx}{\mth*}{\{;\}{}}

\sequence ...
... 940 \DeclareRobustCommand{\sequence}
941   {\@ifstar{\@ssequence}{\@sequence}}
942 \varcmd{@sequence}{\mth}{\left[\,]{,\}{\right]}{}}
943 \varcmd{@ssequence}{\mth*}{[\,]{,\}[]}{}}
944 \DeclareRobustCommand{\sequencel}
945   {\@ifstar{\@ssequencel}{\@sequencel}}
946 \varcmd{@sequencel}{\mth}{\left[\,]{,\}{\right.}.{}}

```

```

947 \varcmd{@sequence1}{\mth*}{\{,}\{}}
948 \DeclareRobustCommand{\sequencer}
949   {\@ifstar{\@ssequencer}{\@sequencer}}
950 \varcmd{@sequencer}{\mth}{\left.}{,}\{right\}}{}
951 \varcmd{@ssequencer}{\mth*}{\{,}\{}}{}
952 \DeclareRobustCommand{\sequencex}
953   {\@ifstar{\@ssequencex}{\@sequencex}}
954 \varcmd{@sequencex}{\mth}{\left[{};}\{right\}}{}
955 \varcmd{@ssequencex}{\mth*}{\{;}\{}}{}
956 \DeclareRobustCommand{\sequencexl}
957   {\@ifstar{\@ssequencexl}{\@sequencexl}}
958 \varcmd{@sequencexl}{\mth}{\left[{};}\{right.}\{}}
959 \varcmd{@ssequencexl}{\mth*}{\{;}\{}}{}
960 \DeclareRobustCommand{\sequencexr}
961   {\@ifstar{\@ssequencexr}{\@sequencexr}}
962 \varcmd{@sequencexr}{\mth}{\left.}{;}\{right\}}{}
963 \varcmd{@ssequencexr}{\mth*}{\{;}\{}}{}

\tuple ...
... 964 \DeclareRobustCommand{\tuple}
965   {\@ifstar{\@stuple}{\@tuple}}
966 \varcmd{@tuple}{\mth}{\left\langle}{,}\{right\rangle\}}{}
967 \varcmd{@stuple}{\mth*}{\langle}{,}\{rangle\}}{}
968 \DeclareRobustCommand{\tuplel}
969   {\@ifstar{\@stupl}{\@tuplel}}
970 \varcmd{@tuplel}{\mth}{\left\langle}{,}\{right.}\{}}
971 \varcmd{@stupl}{\mth*}{\langle}{,}\{}}{}
972 \DeclareRobustCommand{\tupler}
973   {\@ifstar{\@stupler}{\@tupler}}
974 \varcmd{@tupler}{\mth}{\left.}{,}\{right\rangle\}}{}
975 \varcmd{@stupler}{\mth*}{\{,}\{rangle\}}{}
976 \DeclareRobustCommand{\tuplex}
977   {\@ifstar{\@stuplex}{\@tuplex}}
978 \varcmd{@tuplex}{\mth}{\left\langle}{;}\{right\rangle\}}{}
979 \varcmd{@stuplex}{\mth*}{\langle}{;}\{rangle\}}{}
980 \DeclareRobustCommand{\tuplexl}
981   {\@ifstar{\@stuplexl}{\@tuplexl}}
982 \varcmd{@tuplexl}{\mth}{\left\langle}{;}\{right.}\{}}
983 \varcmd{@stuplexl}{\mth*}{\langle}{;}\{}}{}
984 \DeclareRobustCommand{\tuplexr}
985   {\@ifstar{\@stuplexr}{\@tuplexr}}
986 \varcmd{@tuplexr}{\mth}{\left.}{;}\{right\rangle\}}{}
987 \varcmd{@stuplexr}{\mth*}{\{;}\{rangle\}}{}

988 %** Sets *****%

\set ...
... 989 \DeclareRobustCommand{\set}
990   {\@ifstar{\@sset{\vert}}{\@set{\vert}}}}
991 \DeclareRobustCommand{\setx}
992   {\@ifstar{\@sset{:}}{\@set{.!\:}}}}
993 \DeclareRobustCommand{\@set}[3]
994   {\mth{\argmid{\left\lbrace}{\argsep{#2}{\,\middle#1\,}{#3}}}{\right\rbrace}}}
995 \DeclareRobustCommand{\@sset}[3]
996   {\mth*{\argmid{\lbrace}{\argsep{#2}{\,\,#1\,}{#3}}}{\rbrace}}}
997 \DeclareRobustCommand{\setl}
998   {\@ifstar{\@ssetl{\vert}}{\@setl{\vert}}}}
999 \DeclareRobustCommand{\setlx}
1000   {\@ifstar{\@ssetl{:}}{\@setl{.!\:!!\:}}}}
1001 \DeclareRobustCommand{\@setl}[2]
1002   {\mth{\argmid{\left\lbrace}{#2}{\,\,right#1!\:}}}}
1003 \DeclareRobustCommand{\@ssetl}[2]
1004   {\mth*{\argmid{\lbrace}{#2}{\,\,,#1!\:}}}}
1005 \DeclareRobustCommand{\setr}

```

```

1006   {\@ifstar{\@ssetr}{\@setr}}
1007 \DeclareRobustCommand{\setrx}
1008   {\@ifstar{\@ssetr}{\@setr}}
1009 \DeclareRobustCommand{\@setr}[1]
1010   {\mth{\argmid{\left.}{{#1}}{\right\rbrace}}}
1011 \DeclareRobustCommand{\@ssetr}[1]
1012   {\mth*{\argmid}{{#1}}{\rbrace}}}

\card ...
1013 \DeclareRobustCommand{\card}
1014   {\@ifstar{\@scard}{\@card}}
1015 \DeclareRobustCommand{\@card}[1]
1016   {\mth{\argmid{\left\lvert}{{#1}}{\right\rvert}}}
1017 \DeclareRobustCommand{\@scard}[1]
1018   {\mth*{\argmid{\lvert}{{#1}}{\rvert}}}%

\pow ...
1019 \DeclareRobustCommand{\pow}[1]
1020   {\mth{2^{\defval{#1}}{\cdot}}}%

1021 %** Relations ****

\emptyrel ...
1022 \DeclareRobustCommand{\emptyrel}
1023   {\mth{\varnothing}}

1024 %*****

\dom ...
\cod 1025 \usrmth{dom}{\}{argfun}
... 1026 \usrmth{cod}{\}{argfun}
1027 \usrmth{rng}{\}{argfun}
1028 \usrmth{img}{\}{argfun}

\deg ...
1029 \usrmth{deg}{\}{argfun}

1030 %*****

\prj ...
1031 \DeclareRobustCommand{\prj}
1032   {\mthlbop{\downarrow}}

\rst ...
1033 \DeclareRobustCommand{\rst}
1034   {\mthlbop{\upharpoonright}}

\cmp ...
1035 \DeclareRobustCommand{\cmp}
1036   {\mthlbop{\circ}}

1037 %** Functions ****

\emptyfun ...
1038 \DeclareRobustCommand{\emptyfun}
1039   {\mth{\varnothing}}

1040 %*****

\pto ...
\pmapsto 1041 \DeclareMathOperator{\pto}
1042   {\ensuremath{\rightharpoonup}}
1043 \DeclareMathOperator{\pmapsto}
1044   {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize$\llcorner$}}}%
1045     \kern-1.5ex\rightharpoonup}}

```

```

1046 %%*****%

\fix ...
\ifp 1047 \usrmth{fix}{-}{fun}
... 1048 \usrmth{ifp}{-}{fun}
1049 \usrmth{lfp}{-}{fun}
1050 \usrmth{gfp}{-}{fun}
1051 %%*****%

\Aomega ...
\AOmega 1052 \usrmth{Aomega}{-}{argset}[\omega]
1053 \usrmth{AOmega}{-}{argset}[\Omega]

\Atheta ...
\Atheta 1054 \usrmth{Atheta}{-}{argset}[\theta]
1055 \usrmth{Atheta}{-}{argset}[\Theta]

\Aomicron ...
... 1056 \usrmth{Aomicron}{-}{argset}[\omicron]
1057 \usrmth{AOmicron}{-}{argset}[\Omicron]
1058 %%** Numbers *****%

\SetB ...
1059 \DeclareRobustCommand{\SetB}
1060 {\mthset[mathbb]{B}}

\SetF ...
1061 \DeclareRobustCommand{\SetF}
1062 {\mthset[mathbb]{F}}

\SetN ...
... 1063 \DeclareRobustCommand{\SetN}
1064 {\mthset[mathbb]{N}}
1065 \DeclareRobustCommand{\SetNI}[1] []
1066 {\SetN[\infty #1]}

\SetZ ...
... 1067 \DeclareRobustCommand{\SetZ}
1068 {\mthset[mathbb]{Z}}
1069 \DeclareRobustCommand{\SetZI}[1] []
1070 {\SetZ[\pm\infty #1]}
1071 \DeclareRobustCommand{\SetZPI}[1] []
1072 {\SetZ[+\infty #1]}
1073 \DeclareRobustCommand{\SetZNI}[1] []
1074 {\SetZ[-\infty #1]}

\SetQ ...
... 1075 \DeclareRobustCommand{\SetQ}
1076 {\mthset[mathbb]{Q}}
1077 \DeclareRobustCommand{\SetQI}[1] []
1078 {\SetQ[\pm\infty #1]}
1079 \DeclareRobustCommand{\SetQPI}[1] []
1080 {\SetQ[+\infty #1]}
1081 \DeclareRobustCommand{\SetQNI}[1] []
1082 {\SetQ[-\infty #1]}

\SetR ...
... 1083 \DeclareRobustCommand{\SetR}
1084 {\mthset[mathbb]{R}}
1085 \DeclareRobustCommand{\SetRI}[1] []
1086 {\SetR[\pm\infty #1]}

```

```

1087 \DeclareRobustCommand{\SetRPI}[1] []
1088   {\SetR[+\infty #1]}
1089 \DeclareRobustCommand{\SetRNI}[1] []
1090   {\SetR[-\infty #1]}

\SetC ...
... 1091 \DeclareRobustCommand{\SetC}
1092   {\mthset[mathbb]{C}}
1093 \DeclareRobustCommand{\SetCI}[1] []
1094   {\SetC[\infty #1]}

1095 %%*****%

\num ...
... 1096 \DeclareRobustCommand{\num}[1]
1097   {\mth{[#1]}}
1098 \DeclareRobustCommand{\numcc}[2]
1099   {\mth{[\argsep{#1}{,}{#2}]}}
1100 \DeclareRobustCommand{\numco}[2]
1101   {\mth{[\argsep{#1}{,}{#2})}}
1102 \DeclareRobustCommand{\numoc}[2]
1103   {\mth{(\argsep{#1}{,}{#2})}}
1104 \DeclareRobustCommand{\numoo}[2]
1105   {\mth{(\argsep{#1}{,}{#2}))}}

1106 %%*****%

\abs ...
\norm 1107 \DeclareRobustCommand{\abs}
1108   {\@ifstar{\@sabs}{\@abs}}
1109 \DeclareRobustCommand{\@abs}[1]
1110   {\mth{\argmid{\left\lvert}{#1}{\right\rvert}}}
1111 \DeclareRobustCommand{\@sabs}[1]
1112   {\mth*{\argmid{\lvert}{#1}{\rvert}}}
1113 \DeclareRobustCommand{\norm}
1114   {\@ifstar{\@snorm}{\@norm}}
1115 \DeclareRobustCommand{\@norm}[1]
1116   {\mth{\argmid{\left\lVert}{#1}{\right\lVert}}}
1117 \DeclareRobustCommand{\@snorm}[1]
1118   {\mth*{\argmid{\lVert}{#1}{\rVert}}}

\floor ...
\ceil 1119 \DeclareRobustCommand{\floor}
1120   {\@ifstar{\@sfloor}{\@ffloor}}
1121 \DeclareRobustCommand{\@ffloor}[1]
1122   {\mth{\argmid{\left\lfloor}{#1}{\right\rfloor}}}
1123 \DeclareRobustCommand{\@sfloor}[1]
1124   {\mth*{\argmid{\lfloor}{#1}{\rfloor}}}
1125 \DeclareRobustCommand{\ceil}
1126   {\@ifstar{\@sceil}{\@ceiling}}
1127 \DeclareRobustCommand{\@ceiling}[1]
1128   {\mth{\argmid{\left\lceil}{#1}{\right\rceil}}}
1129 \DeclareRobustCommand{\@sceil}[1]
1130   {\mth*{\argmid{\lceil}{#1}{\rceil}}}

1131 %%*****%

\arg ...
1132 \usrmth{arg}{\fun}

\evn ...
\odd 1133 \usrmth{evn}{\fun}
1134 \usrmth{odd}{\fun}

```

```

\bst ...
... 1135 \usrmth{bst}{-}{fun}
1136 \usrmth{argbst}{-}{fun}[arg\,bst]

\min ...
\max 1137 \usrmth{min}{-}{fun}
... 1138 \usrmth{max}{-}{fun}
1139 \usrmth{argmin}{-}{fun}[arg\,min]
1140 \usrmth{argmax}{-}{fun}[arg\,max]

\inf ...
\sup 1141 \usrmth{inf}{-}{fun}
1142 \usrmth{sup}{-}{fun}

\gcd ...
\lcm 1143 \usrmth{gcd}{-}{fun}
1144 \usrmth{lcm}{-}{fun}
1145 %%** Sequences *****%%

\emptyseq ...
1146 \DeclareRobustCommand{\emptyseq}
1147 {\mth{\varepsilon}}

\len ...
1148 \DeclareRobustCommand{\len}
1149 {\@ifstar{\@slen}{\@len}}
1150 \DeclareRobustCommand{\@len}[1]
1151 {\mth{\argmid{\left\lvert\right\lvert}\{#1\}{\right\lvert\right\}}}
1152 \DeclareRobustCommand{\@slen}[1]
1153 {\mth*{\argmid{\left\lvert\right\lvert}\{#1\}{\right\lvert\right\}}}

\fst ...
\lst 1154 \usrmth{fst}{-}{argfun}
1155 \usrmth{lst}{-}{argfun}

1156 \fi
1157 %*****%%
1158 %*****%%
1159 %%** Macros for Computational-Complexity Classes *****%%
1160 %*****%%
1161 \ifcom@

\defcomcls ... to do!
• \defcomcls{CompClass};

\CompClass[sub][sup][arg] = COMPCLASSSUB(ARG)

• \defcomcls{CompClass}[NewClass];

\CompClass[sub][sup][arg] = NEWCLASSSUB(ARG)

1162 \newcommandx{\defcomcls}[2][2=]
1163 {\csdef{#1}{\txtoargcom{\defval{#2}{#1}}}}

\defcomclsgrp ... to do!
• \defcomclsgrp{CompClass};

\CompClass[sub][sup][arg] = COMPCLASSSUB(ARG)
\CoCompClass[sub][sup][arg] = COCOMPCLASSSUB(ARG)
\CompClassE[sub][sup][arg] = COMPCLASS-EASYSUB(ARG)
\CoCompClassE[sub][sup][arg] = COCOMPCLASS-EASYSUB(ARG)
\CompClassH[sub][sup][arg] = COMPCLASS-HARDSUB(ARG)

```

```

\CompClassH[sub][sup][arg] = CoCompClass-HARDSUB(ARG)
\CompClassC[sub][sup][arg] = CompClass-COMPLETESUB(ARG)
\CoCompClassC[sub][sup][arg] = CoCompClass-COMPLETESUB(ARG)

\DCompClass[sub][sup][arg] = DCompClassSUB(ARG)
\CoDCompClass[sub][sup][arg] = CoDCompClassSUB(ARG)
\DCompClassE[sub][sup][arg] = DCompClass-EASYSUB(ARG)
\CoDCompClassE[sub][sup][arg] = CoDCompClass-EASYSUB(ARG)
\DCompClassH[sub][sup][arg] = DCompClass-HARDSUB(ARG)
\CoDCompClassH[sub][sup][arg] = CoDCompClass-HARDSUB(ARG)
\DCompClassC[sub][sup][arg] = DCompClass-COMPLETESUB(ARG)
\CoDCompClassC[sub][sup][arg] = CoDCompClass-COMPLETESUB(ARG)

\NCompClass[sub][sup][arg] = NCompClassSUB(ARG)
\CoNCompClass[sub][sup][arg] = CoNCompClassSUB(ARG)
\NCompClassE[sub][sup][arg] = NCompClass-EASYSUB(ARG)
\CoNCompClassE[sub][sup][arg] = CoNCompClass-EASYSUB(ARG)
\NCompClassH[sub][sup][arg] = NCompClass-HARDSUB(ARG)
\CoNCompClassH[sub][sup][arg] = CoNCompClass-HARDSUB(ARG)
\NCompClassC[sub][sup][arg] = NCompClass-COMPLETESUB(ARG)
\CoNCompClassC[sub][sup][arg] = CoNCompClass-COMPLETESUB(ARG)

\UCompClass[sub][sup][arg] = UCompClassSUB(ARG)
\CoUCompClass[sub][sup][arg] = CoUCompClassSUB(ARG)
\UCompClassE[sub][sup][arg] = UCompClass-EASYSUB(ARG)
\CoUCompClassE[sub][sup][arg] = CoUCompClass-EASYSUB(ARG)
\UCompClassH[sub][sup][arg] = UCompClass-HARDSUB(ARG)
\CoUCompClassH[sub][sup][arg] = CoUCompClass-HARDSUB(ARG)
\UCompClassC[sub][sup][arg] = UCompClass-COMPLETESUB(ARG)
\CoUCompClassC[sub][sup][arg] = CoUCompClass-COMPLETESUB(ARG)

\ACompClass[sub][sup][arg] = ACompClassSUB(ARG)
\CoACompClass[sub][sup][arg] = CoACompClassSUB(ARG)
\ACompClassE[sub][sup][arg] = ACompClass-EASYSUB(ARG)
\CoACompClassE[sub][sup][arg] = CoACompClass-EASYSUB(ARG)
\ACompClassH[sub][sup][arg] = ACompClass-HARDSUB(ARG)
\CoACompClassH[sub][sup][arg] = CoACompClass-HARDSUB(ARG)
\ACompClassC[sub][sup][arg] = ACompClass-COMPLETESUB(ARG)
\CoACompClassC[sub][sup][arg] = CoACompClass-COMPLETESUB(ARG)

• \defcomclsgrp{CompClass}{NewClass};

\CompClass[sub][sup][arg] = NewClassSUB(ARG)
\CoCompClass[sub][sup][arg] = CoNewClassSUB(ARG)
\CompClassE[sub][sup][arg] = NewClass-EASYSUB(ARG)
\CoCompClassE[sub][sup][arg] = CoNewClass-EASYSUB(ARG)
\CompClassH[sub][sup][arg] = NewClass-HARDSUB(ARG)
\CoCompClassH[sub][sup][arg] = CoNewClass-HARDSUB(ARG)
\CompClassC[sub][sup][arg] = NewClass-COMPLETESUB(ARG)
\CoCompClassC[sub][sup][arg] = CoNewClass-COMPLETESUB(ARG)

\DCompClass[sub][sup][arg] = DNewClassSUB(ARG)
\CoDCompClass[sub][sup][arg] = CoDNewClassSUB(ARG)
\DCompClassE[sub][sup][arg] = DNewClass-EASYSUB(ARG)
\CoDCompClassE[sub][sup][arg] = CoDNewClass-EASYSUB(ARG)
\DCompClassH[sub][sup][arg] = DNewClass-HARDSUB(ARG)
\CoDCompClassH[sub][sup][arg] = CoDNewClass-HARDSUB(ARG)
\DCompClassC[sub][sup][arg] = DNewClass-COMPLETESUB(ARG)
\CoDCompClassC[sub][sup][arg] = CoDNewClass-COMPLETESUB(ARG)

\NCompClass[sub][sup][arg] = NNewClassSUB(ARG)
\CoNCompClass[sub][sup][arg] = CoNNewClassSUB(ARG)
\NCompClassE[sub][sup][arg] = NNewClass-EASYSUB(ARG)
\CoNCompClassE[sub][sup][arg] = CoNNewClass-EASYSUB(ARG)
\NCompClassH[sub][sup][arg] = NNewClass-HARDSUB(ARG)

```



```

\ConCompClassH[sub][sup][arg] = CONNEWCLASS-HARDSUB(ARG)
\NCompClassC[sub][sup][arg] = NNEWCLASS-COMPLETESUB(ARG)
\ConCompClassC[sub][sup][arg] = CONNEWCLASS-COMPLETESUB(ARG)

```

```

\UCompClass[sub][sup][arg] = UNEWCLASSSUB(ARG)
\CoUCompClass[sub][sup][arg] = COUNEWCLASSSUB(ARG)
\UCompClassE[sub][sup][arg] = UNEWCLASS-EASYSUB(ARG)
\CoUCompClassE[sub][sup][arg] = COUNEWCLASS-EASYSUB(ARG)
\UCompClassH[sub][sup][arg] = UNEWCLASS-HARDSUB(ARG)
\CoUCompClassH[sub][sup][arg] = COUNEWCLASS-HARDSUB(ARG)
\UCompClassC[sub][sup][arg] = UNEWCLASS-COMPLETESUB(ARG)
\CoUCompClassC[sub][sup][arg] = COUNEWCLASS-COMPLETESUB(ARG)

```

```

\ACompClass[sub][sup][arg] = ANEWCLASSSUB(ARG)
\CoACompClass[sub][sup][arg] = COANEWCLASSSUB(ARG)
\ACompClassE[sub][sup][arg] = ANEWCLASS-EASYSUB(ARG)
\CoACompClassE[sub][sup][arg] = COANEWCLASS-EASYSUB(ARG)
\ACompClassH[sub][sup][arg] = ANEWCLASS-HARDSUB(ARG)
\CoACompClassH[sub][sup][arg] = COANEWCLASS-HARDSUB(ARG)
\ACompClassC[sub][sup][arg] = ANEWCLASS-COMPLETESUB(ARG)
\CoACompClassC[sub][sup][arg] = COANEWCLASS-COMPLETESUB(ARG)

```

```

1164 \newcommandx{\defcomclsggrp}[2][2=]
1165   {\defcomclsggrpsem{#1}{\defval{#2}{#1}}}%
1166   \defcomclsggrpsem{#1}{\defval{#2}{#1}}[Co]}
1167 \newcommandx{\defcomclsgrpsem}[3][3=]
1168   {\defcomclsgrpred{#3#1}{#2}{#3}}%
1169   \defcomclsgrpred{#3D#1}{#2}{#3D}}%
1170   \defcomclsgrpred{#3N#1}{#2}{#3N}}%
1171   \defcomclsgrpred{#3U#1}{#2}{#3U}}%
1172   \defcomclsgrpred{#3A#1}{#2}{#3A}}%
1173 \newcommandx{\defcomclsgrpred}[3][3=]
1174   {\defcomclsgrpccmd{#1}{#2}{#3}}%
1175   \defcomclsgrpccmd{#1E}{#2}{#3}[-easy]}%
1176   \defcomclsgrpccmd{#1H}{#2}{#3}[-hard]}%
1177   \defcomclsgrpccmd{#1C}{#2}{#3}[-complete]}%
1178 \newcommandx{\defcomclsgrpccmd}[4][3=, 4=]
1179   {\csdef{#1}{\txttoargcom{#3#2#4}}}%

```

\defcomhrc ... to do!

- \defcomhrc{CompHierarchy};  
CompHierarchy[sub][sup][par] = COMPHIERARCHY<sup>SUB</sup>[PAR]
- \defcomhrc{CompHierarchy}[NewHierarchy];  
CompHierarchy[sub][sup][par] = NEWHIERARCHY<sup>SUB</sup>[PAR]

```

1180 \newcommandx{\defcomhrc}[2][2=]
1181   {\csdef{#1}{\txttoparcom{\defval{#2}{#1}}}}%
1182 %%*****%

```

\Easy

```

\Hard 1183 \cmdtxtcom{Easy}
... 1184 \cmdtxtcom{Hard}
1185 \cmdtxtcom{Complete}

```

```

1186 %%*****%

```

- \FPT
- \FPT[sub][sup][arg] = FPT<sup>SUB</sup>(ARG)
  - \FPLin[sub][sup][arg] = FPL<sup>SUB</sup>(ARG)
  - \FPQdr[sub][sup][arg] = FPQ<sup>SUB</sup>(ARG)

```

    • \FPCub[sub][sup][arg] = FPCSUBSUP(ARG)
1187 \defcomcls{FPT}
1188 \defcomcls{FPLin}[FPL]
1189 \defcomcls{FPQdr}[FPQ]
1190 \defcomcls{FPCub}[FPC]
1191 %%*****%

\Time    • \Time[sub][sup][arg] = TIMESUBSUP(ARG)
...      \TimeE[sub][sup][arg] = TIME-EASYSUBSUP(ARG)
          \TimeH[sub][sup][arg] = TIME-HARDSUBSUP(ARG)
          \TimeC[sub][sup][arg] = TIME-COMPLETESUBSUP(ARG)

    • \DTime[sub][sup][arg] = DTIMESUBSUP(ARG)
      \DTimeE[sub][sup][arg] = DTIME-EASYSUBSUP(ARG)
      \DTimeH[sub][sup][arg] = DTIME-HARDSUBSUP(ARG)
      \DTimeC[sub][sup][arg] = DTIME-COMPLETESUBSUP(ARG)

    • \NTime[sub][sup][arg] = NTIMESUBSUP(ARG)
      \NTimeE[sub][sup][arg] = NTIME-EASYSUBSUP(ARG)
      \NTimeH[sub][sup][arg] = NTIME-HARDSUBSUP(ARG)
      \NTimeC[sub][sup][arg] = NTIME-COMPLETESUBSUP(ARG)

    • \UTime[sub][sup][arg] = UTIMESUBSUP(ARG)
      \UTimeE[sub][sup][arg] = UTIME-EASYSUBSUP(ARG)
      \UTimeH[sub][sup][arg] = UTIME-HARDSUBSUP(ARG)
      \UTimeC[sub][sup][arg] = UTIME-COMPLETESUBSUP(ARG)

    • \ATime[sub][sup][arg] = ATIMESUBSUP(ARG)
      \ATimeE[sub][sup][arg] = ATIME-EASYSUBSUP(ARG)
      \ATimeH[sub][sup][arg] = ATIME-HARDSUBSUP(ARG)
      \ATimeC[sub][sup][arg] = ATIME-COMPLETESUBSUP(ARG)
1192 \defcomclsgrp{Time}

\Space    • \Space[sub][sup][arg] = SPACESUBSUP(ARG)
...      \SpaceE[sub][sup][arg] = SPACE-EASYSUBSUP(ARG)
          \SpaceH[sub][sup][arg] = SPACE-HARDSUBSUP(ARG)
          \SpaceC[sub][sup][arg] = SPACE-COMPLETESUBSUP(ARG)

    • \DSpace[sub][sup][arg] = DSPACESUBSUP(ARG)
      \DSpaceE[sub][sup][arg] = DSPACE-EASYSUBSUP(ARG)
      \DSpaceH[sub][sup][arg] = DSPACE-HARDSUBSUP(ARG)
      \DSpaceC[sub][sup][arg] = DSPACE-COMPLETESUBSUP(ARG)

    • \NSpace[sub][sup][arg] = NSPACESUBSUP(ARG)
      \NSpaceE[sub][sup][arg] = NSPACE-EASYSUBSUP(ARG)
      \NSpaceH[sub][sup][arg] = NSPACE-HARDSUBSUP(ARG)
      \NSpaceC[sub][sup][arg] = NSPACE-COMPLETESUBSUP(ARG)

    • \USpace[sub][sup][arg] = USPACESUBSUP(ARG)
      \USpaceE[sub][sup][arg] = USPACE-EASYSUBSUP(ARG)
      \USpaceH[sub][sup][arg] = USPACE-HARDSUBSUP(ARG)
      \USpaceC[sub][sup][arg] = USPACE-COMPLETESUBSUP(ARG)

    • \ASpace[sub][sup][arg] = ASPACESUBSUP(ARG)
      \ASpaceE[sub][sup][arg] = ASPACE-EASYSUBSUP(ARG)
      \ASpaceH[sub][sup][arg] = ASPACE-HARDSUBSUP(ARG)
      \ASpaceC[sub][sup][arg] = ASPACE-COMPLETESUBSUP(ARG)
1193 \defcomclsgrp{Space}

\LogTime    • \LogTime[sub][sup][arg] = LOGTIMESUBSUP(ARG)
...      \LogTimeE[sub][sup][arg] = LOGTIME-EASYSUBSUP(ARG)
          \LogTimeH[sub][sup][arg] = LOGTIME-HARDSUBSUP(ARG)
          \LogTimeC[sub][sup][arg] = LOGTIME-COMPLETESUBSUP(ARG)

    • \DLogTime[sub][sup][arg] = DLOGTIMESUBSUP(ARG)
      \DLogTimeE[sub][sup][arg] = DLOGTIME-EASYSUBSUP(ARG)
      \DLogTimeH[sub][sup][arg] = DLOGTIME-HARDSUBSUP(ARG)
      \DLogTimeC[sub][sup][arg] = DLOGTIME-COMPLETESUBSUP(ARG)

```







```

\DLH      • \DLH[sub][sup][par] =  $\Delta_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 
\DBH      • \DBH[sub][sup][par] =  $\Delta_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 

1206 \defcomhrc{DLH}{\mth{\Delta}}
1207 \defcomhrc{DBH}{\mth[\mathbf]{\Delta}}

\ELH      • \ELH[sub][sup][par] =  $\Sigma_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 
\EBH      • \EBH[sub][sup][par] =  $\Sigma_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 

1208 \defcomhrc{ELH}{\mth{\Sigma}}
1209 \defcomhrc{EBH}{\mth[\mathbf]{\Sigma}}

\ULH      • \ULH[sub][sup][par] =  $\Pi_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 
\UBH      • \UBH[sub][sup][par] =  $\Pi_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$ 

1210 \defcomhrc{ULH}{\mth{\Pi}}
1211 \defcomhrc{UBH}{\mth[\mathbf]{\Pi}}

1212 \fi
1213 %*****
1214 %*****
1215 %** Macros for Graphs *****
1216 %*****
1217 \ifgrp@
1218 %** Syntax *****

\GrpName ...
... 1219 \newcommand{\grpname}{G}
1220 \usrmthlatupp{Grp}{Name}{name}[\grpname]

\VerSet ...
... 1221 \newcommand{\versym}{v}
1222 \newcommand{\verset}{V}
1223 \cmdmthsetext{Ver}[\verset][\versym]
1224 \cmdmthsymelm{iver}[\versym_{I}]
1225 \cmdmthsymelm{fver}[\versym_{F}]

\EdgRel ...
1226 \newcommand{\edgrel}{E}
1227 \cmdmthrel{Edg}[\edgrel]

1228 %** Semantics *****

\PthSet ...
\pthFun 1229 \newcommand{\pthsym}{\pi}
1230 \newcommand{\pthset}{Pth}
1231 \cmdmthsetext{Pth}[\pthset][\pthsym]
1232 \usrmth{path}{-}{argfun}

\pre ...
\suc 1233 \usrmth{pre}{-}{oargfun}
1234 \usrmth{suc}{-}{oargfun}

1235 \fi
1236 %*****
1237 %*****
1238 %** Macros for Games *****
1239 %*****
1240 \ifgam@
1241 %** Logic Games *****

```

```

\SATG ...
... 1242 %% Satisfiability Games
1243 \cmdtxttoparname{SATG}[Sat]
1244
1245 %% Validity Games
1246 \cmdtxttoparname{VALG}[Val]
1247
1248 %% Evaluation Games
1249 \cmdtxttoparname{EVLG}[Evl]
1250
1251 %% Synthesis Games
1252 \cmdtxttoparname{SYNG}[Syn]
1253
1254 %% Model-Checking Games
1255 \cmdtxttoparname{MCG}[MC]
1256
1257 %% Ehrenfeucht-Fraisse Games
1258 \cmdtxttoparname{EFG}[EF]
1259 %** Syntax *****%%

\PlrSym ...
\OppSym 1260 \newcommand{\plrsym}{E}
1261 \cmdmthsym{Plr}[\plrsym]
1262 \newcommand{\oppsym}{A}
1263 \cmdmthsym{Opp}[\oppsym]

\ArenaName ...
... 1264 \newcommand{\arenaname}{A}
1265 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

\PosSet ...
... 1266 \newcommand{\possym}{v}
1267 \newcommand{\posset}{Ps}
1268 \cmdmthsetext{Pos}[\posset][\possym]
1269 \cmdmthsymelm{ipos}[\possym_{I}]
1270 \cmdmthsymelm{fpos}[\possym_{F}]
1271 \cmdmthset{PPos}[\posset_{\PlrSym}]
1272 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1273 \cmdmthset{OPos}[\posset_{\OppSym}]
1274 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\PlrFun ...
1275 \newcommand{\plrfun}{pl}
1276 \cmdmthfun{plr}[\plrfun]

\MovRel ...
1277 \newcommand{\movrel}{Mv}
1278 \cmdmthrel{Mov}[\movrel]

\GameName ...
... 1279 \newcommand{\gamename}{\Game}
1280 \usrmthlatupp{Game}{Name}{name}[\gamename]

\WinSet ...
1281 \newcommand{\winset}{Wn}
1282 \cmdmthset{Win}[\winset]

\ObsSet ...
\obsFun 1283 \newcommand{\obsset}{Ob}
1284 \cmdmthset{Obs}[\obsset]
1285 \cmdmthfun{obs}

```

```

1286 %%** Semantics *****%%
\HstSet ...
... 1287 \newcommand{\hstsym}{\varpi}
1288 \newcommand{\hstset}{Hst}
1289 \cmdmthsetext{Hst}[\hstset][\hstsym]
1290 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1291 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1292 \cmdmthset{OHst}[\hstset_{\OppSym}]
1293 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1294 \usrmth{play}{-}{argfun}

\PlaySet ...
\playFun 1295 \newcommand{\playsym}{\pi}
1296 \newcommand{\playset}{Play}
1297 \cmdmthsetext{Play}[\playset][\playsym]
1298 \usrmth{hst}{-}{argfun}

\StrSet ...
... 1299 \newcommand{\strsym}{\sigma}
1300 \newcommand{\strset}{Str}
1301 \cmdmthsetext{Str}[\strset][\strsym]
1302 \cmdmthset{PStr}[\strset_{\PlrSym}]
1303 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1304 \cmdmthset{OStr}[\strset_{\OppSym}]
1305 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet ...
\prfFun 1306 \newcommand{\prfsym}{\xi}
1307 \newcommand{\prfset}{Prf}
1308 \cmdmthsetext{Prf}[\prfset][\prfsym]

\ent ...
\esc 1309 \usrmth{ent}{-}{oargfun}
1310 \usrmth{esc}{-}{oargfun}

\int ...
\out 1311 \usrmth{int}{-}{oargfun}
1312 \usrmth{out}{-}{oargfun}

\atr ...
\rch 1313 \usrmth{atr}{-}{oargfun}
1314 \usrmth{rch}{-}{oargfun}

\lift ...
1315 \usrmth{lift}{-}{oargfun}

\sol ...
1316 \usrmth{sol}{-}{oargfun}

1317 %%** Qualitative Games on Graph *****%%

\BG ...
... 1318 %% Buchi Games
1319 \cmdtxttoparname{BG}
1320
1321 %% Co-Buchi Games
1322 \cmdtxttoparname{CG}
1323
1324 %% Parity Games
1325 \cmdtxttoparname{PG}
1326
1327 %% Rabin Games

```



```

1328 \cmdtxttoparname{RG}
1329
1330 %% Streett Games
1331 \cmdtxttoparname{SG}
1332
1333 %% Muller Games
1334 \cmdtxttoparname{MG}
1335 %** Syntax *****%%

\Evnsym ...
\OddSym 1336 \newcommand{\evnsym}{0}
1337 \cmdmthsym{Evn}[\evnsym]
1338 \newcommand{\oddsym}{1}
1339 \cmdmthsym{Odd}[\oddsym]

\PrtSet ...
\prtFun 1340 \newcommand{\prtsym}{p}
1341 \newcommand{\prtset}{Pr}
1342 \cmdmthsetext{Prt}[\prtset][\prtsym]
1343 \cmdmthfun{prt}[pr]
1344 %** Semantics *****%%

...

1345 %** Quantitative Games on Graph *****%%

\EG ...
... 1346 %% Energy Games
1347 \cmdtxttoparname{EG}
1348
1349 %% Mean-Payoff Games
1350 \cmdtxttoparname{MPG}
1351
1352 %% Discounted-Payoff Games
1353 \cmdtxttoparname{DPG}
1354 %** Syntax *****%%

\MaxSym ...
\MinSym 1355 \newcommand{\maxsym}{\oplus}
1356 \cmdmthsym{Max}[\maxsym]
1357 \newcommand{\minsym}{\boxminus}
1358 \cmdmthsym{Min}[\minsym]

\WghSet ...
\wghFun 1359 \newcommand{\wghsym}{w}
1360 \newcommand{\wghset}{Wg}
1361 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1362 \cmdmthfun{wgh}[wg]
1363 %** Semantics *****%%

...

1364 \fi
1365 %*****%%

1366 %*****%%
1367 %** Macros for Logics *****%%
1368 %*****%%
1369 \iflog@
1370 %** Propositional Logics *****%%

```

```

\BF ...
\QBF 1371 % Boolean Formulae
... 1372 \cmdtxttoparname{BF}
1373
1374 % Quantified Boolean Formulae
1375 \DeclareRobustCommand{\QBF}
1376   {\txtname{Q}\BF}
1377 \DeclareRobustCommand{\EBF}
1378   {\ensuremath{\exists}\BF}
1379 \DeclareRobustCommand{\UBF}
1380   {\ensuremath{\forall}\BF}
1381 %** Syntax ****%/

\LogSig ...
... 1382 \newcommand{\logsig}{L}
1383 \usrmthlatupp{Log}{Sig}{sig}[\logsig]

\Tt ...
\Ff 1384 \newcommand{\ttsym}{\top}
1385 \usrmth{Tt}{\sym}[\ttsym]
1386 \newcommand{\ffsym}{\bot}
1387 \usrmth{Ff}{\sym}[\ffsym]

\LNeg ...
\LNot 1388 \newcommand{\lnegsym}{\neg}
1389 \usrmth{LNeg}{\luop}[\lnegsym]
1390 \newcommand{\lnotsym}{\sim}
1391 \usrmth{LNot}{\luop}[\lnotsym]

\LCon ...
\LDis 1392 \newcommand{\lconsym}{\land}
1393 \usrmth{LCon}{\lbop}[\lconsym]
1394 \newcommand{\ldissym}{\lor}
1395 \usrmth{LDis}{\lbop}[\ldissym]

\LImp ...
\LCoI 1396 \newcommand{\limpsym}{\rightarrow}
1397 \usrmth{LImp}{\lbop}[\limpsym]
1398 \newcommand{\lcoisym}{\leftrightarrow}
1399 \usrmth{LCoI}{\lbop}[\lcoisym]

\LExs ...
\LAll 1400 \newcommand{\lexssym}{\exists}
1401 \usrmth{LExs}{\luop}[\lexssym]
1402 \newcommand{\lallsym}{\forall}
1403 \usrmth{LAll}{\luop}[\lallsym]

\APSet ...
... 1404 \newcommand{\apsym}{p}
1405 \newcommand{\apset}{AP}
1406 \cmdmthsetext{AP}[\apset] [\apsym]
1407 \usrmth{ap}{\argfun}

\sub ...
1408 \usrmth{sub}{\argfun}

\Cnt ...
\Qnt 1409 \usrmth{Cnt}{\sym}[C]
\Sym 1410 \usrmth{Qnt}{\sym}[Q]
1411 \usrmth{Sym}{\sym}[\odot]

```

```

\QAE ...
\QEA 1412 \usrmth{QAE}{-}{sym}[\forall\exists]
      1413 \usrmth{QEA}{-}{sym}[\exists\forall]

\QntSet ...
... 1414 \newcommand{\qntsym}{\wp}
      1415 \newcommand{\qntset}{\Qn}
      1416 \cmdmthsetext{Qnt}[\qntset][\qntsym]

\free ...
\bound 1417 \usrmth{free}{-}{argfun}
        1418 \usrmth{bound}{-}{argfun}

\dep ...
\alt 1419 \usrmth{dep}{-}{argfun}
      1420 \usrmth{alt}{-}{argfun}

\cnf ...
\dnf 1421 \cmdtxtabr{cnf}
... 1422 \cmdtxtabr{dnf}
      1423 \cmdtxtabr{pnf}
      1424 \cmdtxtabr{nnf}
      1425 %** Semantics *****%

\LogStr ...
... 1426 \newcommand{\logstr}{L}
      1427 \usrmthlatupp{Log}{Str}{str}[\logstr]

\ValSet ...
... 1428 \newcommand{\valsym}{\xi}
      1429 \newcommand{\valset}{Val}
      1430 \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet ...
... 1431 \newcommand{\asgsym}{\chi}
      1432 \newcommand{\asgset}{Asg}
      1433 \cmdmthsetext{Asg}[\asgset][\asgsym]
      1434 %** First-Order Logics I *****%

\FOL ...
... 1435 % First-Order Logic
      1436 \cmdtxtoparname{FOL}[Fol]
      1437 \cmdtxtoparname{FO}[FO]
      1438
      1439 % Monadic First-Order Logic
      1440 \DeclareRobustCommand{\MFOL}
      1441   {\{\txtname{M}\}\FOL}
      1442 \DeclareRobustCommand{\MFO}
      1443   {\{\txtname{M}\}\FO}
      1444 %** Syntax *****%

\VarSig ...
... 1445 \newcommand{\varsig}{V}
      1446 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
      1447 \newcommand{\varsym}{x}
      1448 \newcommand{\varset}{Vr}
      1449 \cmdmthsetext{Var}[\varset][\varsym]
      1450 \usrmth{var}{-}{argfun}[vr]
      1451 \usrmth{dim}{-}{argfun}[dm]

```

```

\ConSig ...
... 1452 \newcommand{\consig}{C}
1453 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1454 \newcommand{\consym}{c}
1455 \newcommand{\conset}{Cn}
1456 \cmdmthsetext{Con}[\conset][\consym]
1457 \usrmth{con}{-}{argfun}[cn]

\FunSig ...
... 1458 \newcommand{\funsig}{F}
1459 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1460 \newcommand{\funsym}{f}
1461 \newcommand{\funset}{Fn}
1462 \cmdmthsetext{Fun}[\funset][\funsym]
1463 \usrmth{fun}{-}{argfun}[fn]
1464 \usrmth{art}{-}{argfun}[ar]

\TerSig ...
... 1465 \newcommand{\tersig}{T}
1466 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1467 \newcommand{\tersym}{t}
1468 \newcommand{\terset}{Tr}
1469 \cmdmthsetext{Ter}[\terset][\tersym]
1470 \usrmth{ter}{-}{argfun}

\RelSig ...
... 1471 \newcommand{\relsig}{R}
1472 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1473 \newcommand{\relsym}{r}
1474 \newcommand{\relset}{Rl}
1475 \cmdmthsetext{Rel}[\relset][\relsym]
1476 \usrmth{rel}{-}{argfun}[rl]

\skm ...
1477 \usrmth{skm}{-}{argfun}

1478 %** Semantics *****%

\ConStr ...
... 1479 \newcommand{\constr}{C}
1480 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr ...
... 1481 \newcommand{\funstr}{F}
1482 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr ...
... 1483 \newcommand{\terstr}{T}
1484 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr ...
... 1485 \newcommand{\relstr}{R}
1486 \usrmthlatupp{Rel}{Str}{str}[\relstr]

1487 %** First-Order Logics II *****%

\DF ...
\IF 1488 % Dependence-Friendly Logic
... 1489 \cmdtxtoparname{DF}
1490
1491 % Independence-Friendly Logic
1492 \cmdtxtoparname{IF}
1493

```

```

1494 % Dependence/Independence-Friendly Logic
1495 \cmdtxtoparname{DIF}
1496
1497 % Dependence Logic
1498 \cmdtxtoparname{DL}
1499
1500 % Team Logic
1501 \cmdtxtoparname{TL}
1502
1503 % Alternating Dependence-Friendly Logic
1504 \cmdtxtoparname{ADF}
1505
1506 % Alternating Independence-Friendly Logic
1507 \cmdtxtoparname{AIF}
1508
1509 % Alternating Dependence/Independence-Friendly Logic
1510 \cmdtxtoparname{ADIF}
1511
...
1511 %** Syntax *****%%

\LEExs ...
\LAAll 1512 \newcommand{\leexssym}{\Sigma}
1513 \usrmth{LEExs}{\luop}{\leexssym}
1514 \newcommand{\laallsym}{\Pi}
1515 \usrmth{LAAll}{\luop}{\laallsym}
1516
1516 %** Semantics *****%%
...

1517 %** Second-Order Logics I *****%%

\SOL ...
... 1518 % Second-Order Logic
1519 \cmdtxtoparname{SOL}[Sol]
1520 \cmdtxtoparname{SO}
1521
1522 % Weak Second-Order Logic
1523 \DeclareRobustCommand{\WSOL}
1524   {\{\txtrname{W}\}\SOL}
1525 \DeclareRobustCommand{\WSO}
1526   {\{\txtrname{W}\}\SO}
1527
1528 % coWeak Second-Order Logic
1529 \DeclareRobustCommand{\coWSOL}
1530   {\{\txtrname{coW}\}\SOL}
1531 \DeclareRobustCommand{\coWSO}
1532   {\{\txtrname{coW}\}\SO}
1533
1534 % Monadic Second-Order Logic
1535 \DeclareRobustCommand{\MSOL}
1536   {\{\txtrname{M}\}\SOL}
1537 \DeclareRobustCommand{\MSO}
1538   {\{\txtrname{M}\}\SO}
1539
1540 % Weak Monadic Second-Order Logic
1541 \DeclareRobustCommand{\WMSOL}
1542   {\{\txtrname{W}\}\MSOL}
1543 \DeclareRobustCommand{\WMSO}
1544   {\{\txtrname{W}\}\MSO}
1545
1546 % coWeak Monadic Second-Order Logic
1547 \DeclareRobustCommand{\coWMSOL}
1548   {\{\txtrname{coW}\}\MSOL}

```

```

1549 \DeclareRobustCommand{\coWMSO}
1550   {\txtname{coW}}\MSO}

1551 %** Syntax *****%

\FVarSet ...
... 1552 \newcommand{\fvarsym}{x}
1553 \newcommand{\fvarset}{FVr}
1554 \cmdmthsettext{FVar}[\fvarset][\fvarsym]

\SVarSet ...
... 1555 \newcommand{\svarsym}{X}
1556 \newcommand{\svarset}{SVr}
1557 \cmdmthsettext{SVar}[\svarset][\svarsym]

1558 %** Semantics *****%
...

1559 %** Second-Order Logics II *****%

\TL ...
\PL 1560 % Tree Logic
... 1561 \cmdtxttoparname{TL}
1562
1563 % Weak Tree Logic
1564 \DeclareRobustCommand{\WTL}
1565   {\txtname{W}}\TL}
1566
1567 % coWeak Tree Logic
1568 \DeclareRobustCommand{\coWTL}
1569   {\txtname{coW}}\TL}
1570
1571 % Monadic Tree Logic
1572 \DeclareRobustCommand{\MTL}
1573   {\txtname{M}}\TL}
1574
1575 % Weak Monadic Tree Logic
1576 \DeclareRobustCommand{\WMTL}
1577   {\txtname{W}}\MTL}
1578
1579 % coWeak Monadic Tree Logic
1580 \DeclareRobustCommand{\coWMTL}
1581   {\txtname{coW}}\MTL}
1582
1583 % Path Logic
1584 \cmdtxttoparname{PL}
1585
1586 % Weak Path Logic
1587 \DeclareRobustCommand{\WPL}
1588   {\txtname{W}}\PL}
1589
1590 % coWeak Path Logic
1591 \DeclareRobustCommand{\coWPL}
1592   {\txtname{coW}}\PL}
1593
1594 % Monadic Path Logic
1595 \DeclareRobustCommand{\MPL}
1596   {\txtname{M}}\PL}
1597
1598 % Weak Monadic Path Logic
1599 \DeclareRobustCommand{\WMPL}
1600   {\txtname{W}}\MPL}
1601
1602 % coWeak Monadic Path Logic

```

```

1603 \DeclareRobustCommand{\coWMPL}
1604   {\textname{coW}\MPL}

1605 %** Syntax *****%
...

1606 %** Semantics *****%
...

1607 %** Modal Logics I *****%

\ML ...
\GML 1608 % Modal Logic
... 1609 \cmdtxtopname{ML}
1610
1611 % Graded Modal Logic
1612 \DeclareRobustCommand{\GML}
1613   {\textname{G}\ML}
1614
1615 % Quantified Modal Logic
1616 \DeclareRobustCommand{\QML}
1617   {\textname{Q}\ML}
1618 \DeclareRobustCommand{\EML}
1619   {\ensuremath{\exists}\ML}
1620 \DeclareRobustCommand{\UML}
1621   {\ensuremath{\forall}\ML}

1622 %** Syntax *****%

\Opr ...
1623 \usrmth{Opr}{\sym}[Op]

\DMod ...
\BMod 1624 \usrmth{DMod}{\sym}[\Diamond]
1625 \usrmth{BMod}{\sym}[\Box]

\Exs ...
\All 1626 \DeclareRobustCommand{\Exs}
1627   {\@ifstar{\@sexs}{\@exs}}
1628 \DeclareRobustCommand{\@sexs}[1]
1629   {\mth{DMod}[#1]}
1630 \DeclareRobustCommand{\@exs}[1]
1631   {\mth{defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
1632 \DeclareRobustCommand{\All}
1633   {\@ifstar{\@sall}{\@all}}
1634 \DeclareRobustCommand{\@sall}[1]
1635   {\mth{BMod}[#1]}
1636 \DeclareRobustCommand{\@all}[1]
1637   {\mth{defval{\argmid{\left[]}{#1}{\right]}}{\BMod}}}

1638 %** Semantics *****%

\KrpStr ...
... 1639 \newcommand{\krpstr}{K}
1640 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

\WrlSet ...
... 1641 \newcommand{\wrlsym}{w}
1642 \newcommand{\wrlset}{W}
1643 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1644 \cmdmthsymelm{iwrl}[\wrlsym_I]

\AccRel ...
\TrnRel 1645 \newcommand{\accsym}{R}
1646 \cmdmthrel{Acc}[\accsym]
1647 \cmdmthrel{Trn}[\accsym]

```

```

\labFun ...
1648 \newcommand{\labsym}{\lambda}
1649 \cmdmthfun{lab}[\labsym]

\PthSet ...
... 1650 \providecommand{\pthsym}{\pi}
1651 \providecommand{\pthset}{Pth}
1652 \cmdmthsetext{Pth}[\pthset][\pthsym]
1653 \usrmth{path}{-}{argfun}
1654 %** Modal Logics II *****%

\MC ...
\GMC 1655 % Mu Calculus
... 1656 \cmdtxtoparname{MC}[\ensuremath{\mu}-Calculus]
1657
1658 % Graded Mu Calculus
1659 \DeclareRobustCommand{\GMC}
1660   {\{\textrm{G}\}\MC}
1661
1662 % Quantified Mu Calculus
1663 \DeclareRobustCommand{\QMC}
1664   {\{\textrm{Q}\}\MC}
1665 \DeclareRobustCommand{\EMC}
1666   {\ensuremath{\exists}\MC}
1667 \DeclareRobustCommand{\UMC}
1668   {\ensuremath{\forall}\MC}
1669
1670 % Alternation-Free Mu Calculus
1671 \DeclareRobustCommand{\AFMC}
1672   {\{\textrm{AF}\}\MC}
1673
1674 % Alternation-Free Graded Mu Calculus
1675 \DeclareRobustCommand{\AFGMC}
1676   {\{\textrm{AF}\}\GMC}
1677
1678 % Quantified Alternation-Free Mu Calculus
1679 \DeclareRobustCommand{\QAFMC}
1680   {\{\textrm{Q}\}\AFMC}
1681 \DeclareRobustCommand{\EAFMC}
1682   {\ensuremath{\exists}\AFMC}
1683 \DeclareRobustCommand{\UAFMC}
1684   {\ensuremath{\forall}\AFMC}
1685
1686 %** Syntax *****%
...
1687 %** Semantics *****%
...
1688 %** Temporal Logics I *****%

\PTL ...
\LTL 1689 % Propositional Temporal Logic
... 1690 \cmdtxtoparname{PTL}
1691
1692 % Quantified Propositional Temporal Logic
1693 \DeclareRobustCommand{\QPTL}
1694   {\{\textrm{Q}\}\PTL}
1695 \DeclareRobustCommand{\EPTL}
1696   {\ensuremath{\exists}\PTL}
1697 \DeclareRobustCommand{\UPTL}
1698   {\ensuremath{\forall}\PTL}

```



```

1699
1700 % Linear Temporal Logic
1701 \cmdtxttoparname{LTL}
1702
1703 % Quantified Linear Temporal Logic
1704 \DeclareRobustCommand{\QLTL}
1705   {\{\txtrname{Q}\}\LTL}
1706 \DeclareRobustCommand{\ELTL}
1707   {\ensuremath{\exists}\LTL}
1708 \DeclareRobustCommand{\ULTL}
1709   {\ensuremath{\forall}\LTL}
1710 %** Syntax *****%

\X ...
... 1711 \usrmth{X}{-}{sym}[X\,]
1712 \usrmth{F}{-}{sym}[F\,]
1713 \usrmth{G}{-}{sym}[G\,]
1714 \usrmth{U}{-}{sym}[\,U\,]
1715 \usrmth{R}{-}{sym}[\,R\,]

\Y ...
... 1716 \usrmth{Y}{-}{sym}[G\,]
1717 \usrmth{P}{-}{sym}[P\,]\let\SavePilcrow\P
1718 \usrmth{H}{-}{sym}[H\,]\let\SaveDoubleAcute\H
1719 \usrmth{S}{-}{sym}[\,S\,]\let\SaveSectionSymbol\S
1720 \usrmth{B}{-}{sym}[\,B\,]
1721 %** Semantics *****%

...

1722 %** Temporal Logics II *****%

\PDL ...
\CTL 1723 % Propositional Dynamic Logic
... 1724 \cmdtxttoparname{PDL}
1725
1726 % Computation Tree Logic
1727 \cmdtxttoparname{CTL}
1728
1729 % Weak Computation Tree Logic
1730 \DeclareRobustCommand{\WCTL}
1731   {\{\txtrname{W}\}\CTL}
1732
1733 % Quantified Computation Tree Logic
1734 \DeclareRobustCommand{\QCTL}
1735   {\{\txtrname{Q}\}\CTL}
1736 \DeclareRobustCommand{\ECTL}
1737   {\ensuremath{\exists}\CTL}
1738 \DeclareRobustCommand{\UCTL}
1739   {\ensuremath{\forall}\CTL}
1740
1741 % Improved Computation Tree Logic
1742 \cmdtxttoparname{CTLP}[CTL$^{+}$]
1743
1744 % Weak Improved Computation Tree Logic
1745 \DeclareRobustCommand{\WCTLP}
1746   {\{\txtrname{W}\}\CTLP}
1747
1748 % Quantified Improved Computation Tree Logic
1749 \DeclareRobustCommand{\QCTLP}
1750   {\{\txtrname{Q}\}\CTLP}
1751 \DeclareRobustCommand{\ECTLP}
1752   {\ensuremath{\exists}\CTLP}

```

```

1753 \DeclareRobustCommand{\UCTLP}
1754   {\ensuremath{\forall}\CTL*}
1755
1756 % Full Computation Tree Logic
1757 \cmdtxtopname{CTLS}[CTL*]
1758
1759 % Weak Full Computation Tree Logic
1760 \DeclareRobustCommand{\WCTLS}
1761   {\{\textname{W}\}\CTLS}
1762
1763 % Quantified Full Computation Tree Logic
1764 \DeclareRobustCommand{\QCTLS}
1765   {\{\textname{Q}\}\CTLS}
1766 \DeclareRobustCommand{\ECTLS}
1767   {\ensuremath{\exists}\CTLS}
1768 \DeclareRobustCommand{\UCTLS}
1769   {\ensuremath{\forall}\CTLS}
1770 %** Syntax *****%
\E ...
\A 1771 \usrmth{E}{\}{sym}
    1772 \usrmth{A}{\}{sym}
1773 %** Semantics *****%
...
1774 %** Game Logics I *****%
\ATL ...
... 1775 % Alternating Temporal Logic
    1776 \cmdtxtopname{ATL}
    1777
    1778 % Weak Alternating Tree Logic
    1779 \DeclareRobustCommand{\WATL}
    1780   {\{\textname{W}\}\ATL}
    1781
    1782 % Quantified Alternating Temporal Logic
    1783 \DeclareRobustCommand{\QATL}
    1784   {\{\textname{Q}\}\ATL}
    1785 \DeclareRobustCommand{\EATL}
    1786   {\ensuremath{\exists}\ATL}
    1787 \DeclareRobustCommand{\UATL}
    1788   {\ensuremath{\forall}\ATL}
    1789
    1790 % Improved Alternating Temporal Logic
    1791 \cmdtxtopname{ATLP}[ATL$^{+}$]
    1792
    1793 % Weak Improved Alternating Tree Logic
    1794 \DeclareRobustCommand{\WATLP}
    1795   {\{\textname{W}\}\ATLP}
    1796
    1797 % Quantified Improved Alternating Temporal Logic
    1798 \DeclareRobustCommand{\QATLP}
    1799   {\{\textname{Q}\}\ATLP}
    1800 \DeclareRobustCommand{\EATLP}
    1801   {\ensuremath{\exists}\ATLP}
    1802 \DeclareRobustCommand{\UATLP}
    1803   {\ensuremath{\forall}\ATLP}
    1804
    1805 % Full Alternating Temporal Logic
    1806 \cmdtxtopname{ATLS}[ATL*]
    1807
    1808 % Weak Full Alternating Tree Logic
    1809 \DeclareRobustCommand{\WATLS}

```

```

1810   {{\txtname{W}}\ATLS}
1811
1812 % Quantified Full Alternating Temporal Logic
1813 \DeclareRobustCommand{\QATLS}
1814   {{\txtname{Q}}\ATLS}
1815 \DeclareRobustCommand{\EATLS}
1816   {\ensuremath{\exists}\ATLS}
1817 \DeclareRobustCommand{\UATLS}
1818   {\ensuremath{\forall}\ATLS}
1819 %** Syntax *****%

\EEs ...
\AAll 1820 \DeclareRobustCommand{\EEs}[1]
      1821   {\mth{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}
      1822 \DeclareRobustCommand{\AAll}[1]
      1823   {\mth{\argmid{\left[\left[\defval{#1}{\emptyset}]{\right]\right}}}}
      1824 %** Semantics *****%

\CGS ...
      1825 \cmdtxtname{CGS}

\CGSstr ...
... 1826 \newcommand{\cgsstr}{G}
      1827 \usrmthlatupp{CGS}{Str}{str}{\cgsstr}

\AgnSet ...
... 1828 \newcommand{\agnsym}{a}
      1829 \newcommand{\agnset}{Ag}
      1830 \cmdmthsetext{Agn}{\agnset}{\agnsym}

\ActSet ...
... 1831 \newcommand{\actsym}{c}
      1832 \newcommand{\actset}{Ac}
      1833 \cmdmthsetext{Act}{\actset}{\actsym}

\PosSet ...
... 1834 \providecommand{\possym}{v}
      1835 \providecommand{\posset}{Ps}
      1836 \cmdmthsetext{Pos}{\posset}{\possym}
      1837 \cmdmthsymelm{ipos}{\possym_{I}}
      1838 \cmdmthsymelm{fpos}{\possym_{F}}
      1839 \cmdmthset{PPos}{\posset_{\PlrSym}}
      1840 \cmdmthsymelm{ppos}{\possym_{\PlrSym}}
      1841 \cmdmthset{OPos}{\posset_{\OppSym}}
      1842 \cmdmthsymelm{opos}{\possym_{\OppSym}}

\SttSet ...
... 1843 \newcommand{\sttsym}{s}
      1844 \newcommand{\sttset}{St}
      1845 \cmdmthsetext{Stt}{\sttset}{\sttsym}
      1846 \cmdmthset{IStt}{\sttset_{I}}
      1847 \cmdmthsymelm{istt}{\sttsym_{I}}
      1848 \cmdmthset{FStt}{\sttset_{F}}
      1849 \cmdmthsymelm{fstt}{\sttsym_{F}}

\DecSet ...
... 1850 \newcommand{\decsym}{d}
      1851 \newcommand{\decset}{Dc}
      1852 \cmdmthsetext{Dec}{\decset}{\decsym}

```

```

\movFun ...
\movRel 1853 \newcommand{\movsym}{\tau}
        1854 \cmdmthfun{mov}[\movsym]
        1855 \cmdmthrel{mov}[\movsym]

\trnFun ...
\trnRel 1856 \newcommand{\trnsym}{\delta}
        1857 \cmdmthfun{trn}[\trnsym]
        1858 \cmdmthrel{trn}[\trnsym]

\PrfSet ...
        1859 \providecommand{\prfsym}{\xi}
        1860 \providecommand{\prfset}{Prf}
        1861 \cmdmthsetext{Prf}[\prfset][\prfsym]

\HstSet ...
    ... 1862 \providecommand{\hstsym}{\varpi}
        1863 \providecommand{\hstset}{Hst}
        1864 \cmdmthsetext{Hst}[\hstset][\hstsym]
        1865 \cmdmthset{PHst}[\hstset_{\PlrSym}]
        1866 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
        1867 \cmdmthset{OHst}[\hstset_{\OppSym}]
        1868 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
        1869 \usrmth{hst}{\}{argfun}

\PlaySet ...
    ... 1870 \providecommand{\playsym}{\pi}
        1871 \providecommand{\playset}{Play}
        1872 \cmdmthsetext{Play}[\playset][\playsym]
        1873 \usrmth{play}{\}{argfun}

\PlnSet ...
    ... 1874 \providecommand{\plnsym}{\rho}
        1875 \providecommand{\plnset}{Pln}
        1876 \cmdmthsetext{Pln}[\plnset][\plnsym]
        1877 \cmdmthset{PPln}[\plnset_{\PlrSym}]
        1878 \cmdmthsymelm{pPln}[\plnsym_{\PlrSym}]
        1879 \cmdmthset{OPln}[\plnset_{\OppSym}]
        1880 \cmdmthsymelm{oPln}[\plnsym_{\OppSym}]

\StrSet ...
    ... 1881 \providecommand{\strsym}{\sigma}
        1882 \providecommand{\strset}{Str}
        1883 \cmdmthsetext{Str}[\strset][\strsym]
        1884 \cmdmthset{PStr}[\strset_{\PlrSym}]
        1885 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
        1886 \cmdmthset{OStr}[\strset_{\OppSym}]
        1887 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

        1888 %** Game Logics II *****%

\PL ...
    ... 1889 % Plan Logic
        1890 \cmdtxttoparname{PL}
        1891
        1892 \DeclareRobustCommand{\EPL}
        1893   {\ensuremath{\exists}\PL}
        1894 \DeclareRobustCommand{\UPL}
        1895   {\ensuremath{\forall}\PL}
        1896
        1897 \DeclareRobustCommand{\FPL}
        1898   {\{\txtname{F}\}\PL}
        1899

```

```

1900 \DeclareRobustCommand{\EFPL}
1901   {\ensuremath{\exists}\FPL}
1902 \DeclareRobustCommand{\UFPL}
1903   {\ensuremath{\forall}\FPL}
1904
1905 % One-Goal Plan Logic
1906 \DeclareRobustCommandx{\OGPL}[3][1=, 2=, 3=]
1907   {\PL[#1][#2][1g\arglef{,}{#3}]}
1908
1909 \DeclareRobustCommand{\EOGPL}
1910   {\ensuremath{\exists}\OGPL}
1911 \DeclareRobustCommand{\UOGPL}
1912   {\ensuremath{\forall}\OGPL}
1913
1914 \DeclareRobustCommand{\FOGPL}
1915   {\{\textrm{F}\}\OGPL}
1916
1917 \DeclareRobustCommand{\EFOGPL}
1918   {\ensuremath{\exists}\FOGPL}
1919 \DeclareRobustCommand{\UFOGPL}
1920   {\ensuremath{\forall}\FOGPL}
1921
1922 % Conjunctive-Goal Plan Logic
1923 \DeclareRobustCommandx{\CGPL}[3][1=, 2=, 3=]
1924   {\PL[#1][#2][cg\arglef{,}{#3}]}
1925
1926 \DeclareRobustCommand{\ECGPL}
1927   {\ensuremath{\exists}\CGPL}
1928 \DeclareRobustCommand{\UCGPL}
1929   {\ensuremath{\forall}\CGPL}
1930
1931 \DeclareRobustCommand{\FCGPL}
1932   {\{\textrm{F}\}\CGPL}
1933
1934 \DeclareRobustCommand{\EFCGPL}
1935   {\ensuremath{\exists}\FCGPL}
1936 \DeclareRobustCommand{\UFCGPL}
1937   {\ensuremath{\forall}\FCGPL}
1938
1939 % Disjunctive-Goal Plan Logic
1940 \DeclareRobustCommandx{\DGPL}[3][1=, 2=, 3=]
1941   {\PL[#1][#2][dg\arglef{,}{#3}]}
1942
1943 \DeclareRobustCommand{\EDGPL}
1944   {\ensuremath{\exists}\DGPL}
1945 \DeclareRobustCommand{\UDGPL}
1946   {\ensuremath{\forall}\DGPL}
1947
1948 \DeclareRobustCommand{\FDGPL}
1949   {\{\textrm{F}\}\DGPL}
1950
1951 \DeclareRobustCommand{\EFDGPL}
1952   {\ensuremath{\exists}\FDGPL}
1953 \DeclareRobustCommand{\UFDGPL}
1954   {\ensuremath{\forall}\FDGPL}
1955
1956 % Alternating-Goal Plan Logic
1957 \DeclareRobustCommandx{\AGPL}[3][1=, 2=, 3=]
1958   {\PL[#1][#2][ag\arglef{,}{#3}]}
1959
1960 \DeclareRobustCommand{\EAGPL}
1961   {\ensuremath{\exists}\AGPL}
1962 \DeclareRobustCommand{\UAGPL}

```

```

1963   {\ensuremath{\forall}\text{forall}}\AGPL}
1964
1965 \DeclareRobustCommand{\FAGPL}
1966   {\{\textname{F}\}\AGPL}
1967
1968 \DeclareRobustCommand{\EFAGPL}
1969   {\ensuremath{\exists}\FAGPL}
1970 \DeclareRobustCommand{\UFAGPL}
1971   {\ensuremath{\forall}\FAGPL}
1972
1973 % Extended-Goal Plan Logic
1974 \DeclareRobustCommandx{\EGPL}[3][1=, 2=, 3=]
1975   {\PL[#1][#2][eg\arglef{,}\{#3\}]}
1976
1977 \DeclareRobustCommand{\EEGPL}
1978   {\ensuremath{\exists}\EGPL}
1979 \DeclareRobustCommand{\UEGPL}
1980   {\ensuremath{\forall}\EGPL}
1981
1982 \DeclareRobustCommand{\FEGPL}
1983   {\{\textname{F}\}\EGPL}
1984
1985 \DeclareRobustCommand{\EFEGPL}
1986   {\ensuremath{\exists}\FEGPL}
1987 \DeclareRobustCommand{\UFEGPL}
1988   {\ensuremath{\forall}\FEGPL}
1989
1990 % Boolean-Goal Plan Logic
1991 \DeclareRobustCommandx{\BGPL}[3][1=, 2=, 3=]
1992   {\PL[#1][#2][bg\arglef{,}\{#3\}]}
1993
1994 \DeclareRobustCommand{\EBGPL}
1995   {\ensuremath{\exists}\BGPL}
1996 \DeclareRobustCommand{\UBGPL}
1997   {\ensuremath{\forall}\BGPL}
1998
1999 \DeclareRobustCommand{\FBGPL}
2000   {\{\textname{F}\}\BGPL}
2001
2002 \DeclareRobustCommand{\EFBGPL}
2003   {\ensuremath{\exists}\FBGPL}
2004 \DeclareRobustCommand{\UFBGPL}
2005   {\ensuremath{\forall}\FBGPL}
2006
2007 % Undefined-Goal Plan Logic
2008 \DeclareRobustCommandx{\XGPL}[3][1=, 2=, 3=]
2009   {\PL[#1][#2][xg\arglef{,}\{#3\}]}
2010
2011 \DeclareRobustCommand{\EXGPL}
2012   {\ensuremath{\exists}\XGPL}
2013 \DeclareRobustCommand{\UXGPL}
2014   {\ensuremath{\forall}\XGPL}
2015
2016 \DeclareRobustCommand{\FXGPL}
2017   {\{\textname{F}\}\XGPL}
2018
2019 \DeclareRobustCommand{\EFXGPL}
2020   {\ensuremath{\exists}\FXGPL}
2021 \DeclareRobustCommand{\UFXGPL}
2022   {\ensuremath{\forall}\FXGPL}

\SL ...
... 2023 % Strategy Logic
2024 \cmdtxttoparname{SL}

```

```

2025
2026 \DeclareRobustCommand{\ESL}
2027   {\ensuremath{\exists}\SL}
2028 \DeclareRobustCommand{\USL}
2029   {\ensuremath{\forall}\SL}
2030
2031 \DeclareRobustCommand{\FSL}
2032   {\{\textname{F}\}\SL}
2033
2034 \DeclareRobustCommand{\EFSL}
2035   {\ensuremath{\exists}\FSL}
2036 \DeclareRobustCommand{\UFSL}
2037   {\ensuremath{\forall}\FSL}
2038
2039 % One-Goal Strategy Logic
2040 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
2041   {\SL[#1][#2][lg\arglef{,}{#3}]}
2042
2043 \DeclareRobustCommand{\EOGSL}
2044   {\ensuremath{\exists}\OGSL}
2045 \DeclareRobustCommand{\UOGSL}
2046   {\ensuremath{\forall}\OGSL}
2047
2048 \DeclareRobustCommand{\FOGSL}
2049   {\{\textname{F}\}\OGSL}
2050
2051 \DeclareRobustCommand{\EFOGSL}
2052   {\ensuremath{\exists}\FOGSL}
2053 \DeclareRobustCommand{\UFOGSL}
2054   {\ensuremath{\forall}\FOGSL}
2055
2056 % Conjunctive-Goal Strategy Logic
2057 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
2058   {\SL[#1][#2][cg\arglef{,}{#3}]}
2059
2060 \DeclareRobustCommand{\ECGSL}
2061   {\ensuremath{\exists}\CGSL}
2062 \DeclareRobustCommand{\UCGSL}
2063   {\ensuremath{\forall}\CGSL}
2064
2065 \DeclareRobustCommand{\FCGSL}
2066   {\{\textname{F}\}\CGSL}
2067
2068 \DeclareRobustCommand{\EFCGSL}
2069   {\ensuremath{\exists}\FCGSL}
2070 \DeclareRobustCommand{\UFCGSL}
2071   {\ensuremath{\forall}\FCGSL}
2072
2073 % Disjunctive-Goal Strategy Logic
2074 \DeclareRobustCommandx{\DGSL}[3][1=, 2=, 3=]
2075   {\SL[#1][#2][dg\arglef{,}{#3}]}
2076
2077 \DeclareRobustCommand{\EDGSL}
2078   {\ensuremath{\exists}\DGSL}
2079 \DeclareRobustCommand{\UDGSL}
2080   {\ensuremath{\forall}\DGSL}
2081
2082 \DeclareRobustCommand{\FDGSL}
2083   {\{\textname{F}\}\DGSL}
2084
2085 \DeclareRobustCommand{\EFDGSL}
2086   {\ensuremath{\exists}\FDGSL}
2087 \DeclareRobustCommand{\UFDGSL}

```

```

2088 {\ensuremath{\forall}\text{forall}}\FDGSL}
2089
2090 % Alternating-Goal Strategy Logic
2091 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
2092 {\SL[#1][#2][ag\arglef{,}{#3}]}
2093
2094 \DeclareRobustCommand{\EAGSL}
2095 {\ensuremath{\exists}\text{exists}}\AGSL}
2096 \DeclareRobustCommand{\UAGSL}
2097 {\ensuremath{\forall}\text{forall}}\AGSL}
2098
2099 \DeclareRobustCommand{\FAGSL}
2100 {\{\textname{F}\}}\AGSL}
2101
2102 \DeclareRobustCommand{\EFAGSL}
2103 {\ensuremath{\exists}\text{exists}}\FAGSL}
2104 \DeclareRobustCommand{\UFAGSL}
2105 {\ensuremath{\forall}\text{forall}}\FAGSL}
2106
2107 % Extended-Goal Strategy Logic
2108 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
2109 {\SL[#1][#2][eg\arglef{,}{#3}]}
2110
2111 \DeclareRobustCommand{\EEGSL}
2112 {\ensuremath{\exists}\text{exists}}\EGSL}
2113 \DeclareRobustCommand{\UEGSL}
2114 {\ensuremath{\forall}\text{forall}}\EGSL}
2115
2116 \DeclareRobustCommand{\FEGSL}
2117 {\{\textname{F}\}}\EGSL}
2118
2119 \DeclareRobustCommand{\EFEGSL}
2120 {\ensuremath{\exists}\text{exists}}\FEGSL}
2121 \DeclareRobustCommand{\UFEGSL}
2122 {\ensuremath{\forall}\text{forall}}\FEGSL}
2123
2124 % Boolean-Goal Strategy Logic
2125 \DeclareRobustCommandx{\BGS�}[3][1=, 2=, 3=]
2126 {\SL[#1][#2][bg\arglef{,}{#3}]}
2127
2128 \DeclareRobustCommand{\EBGS�}
2129 {\ensuremath{\exists}\text{exists}}\BGS�}
2130 \DeclareRobustCommand{\UBGS�}
2131 {\ensuremath{\forall}\text{forall}}\BGS�}
2132
2133 \DeclareRobustCommand{\FBGS�}
2134 {\{\textname{F}\}}\BGS�}
2135
2136 \DeclareRobustCommand{\EFBGS�}
2137 {\ensuremath{\exists}\text{exists}}\FBGS�}
2138 \DeclareRobustCommand{\UFBGS�}
2139 {\ensuremath{\forall}\text{forall}}\FBGS�}
2140
2141 % Nested-Goal Strategy Logic
2142 \DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
2143 {\SL[#1][#2][ng\arglef{,}{#3}]}
2144
2145 \DeclareRobustCommand{\ENGSL}
2146 {\ensuremath{\exists}\text{exists}}\NGSL}
2147 \DeclareRobustCommand{\UNGS�}
2148 {\ensuremath{\forall}\text{forall}}\NGSL}
2149
2150 \DeclareRobustCommand{\FNGSL}

```



```

2151  {\txtname{F}}\NGSL}
2152
2153 \DeclareRobustCommand{\EFNGSL}
2154  {\ensuremath{\exists}\FNGSL}
2155 \DeclareRobustCommand{\UFNGSL}
2156  {\ensuremath{\forall}\FNGSL}
2157
2158 % Undefined-Goal Strategy Logic
2159 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
2160  {\SL[#1][#2][xg\argleft,]{#3}}
2161
2162 \DeclareRobustCommand{\EXGSL}
2163  {\ensuremath{\exists}\XGSL}
2164 \DeclareRobustCommand{\UXGSL}
2165  {\ensuremath{\forall}\XGSL}
2166
2167 \DeclareRobustCommand{\FXGSL}
2168  {\{\txtname{F}\}\XGSL}
2169
2170 \DeclareRobustCommand{\EFXGSL}
2171  {\ensuremath{\exists}\FXGSL}
2172 \DeclareRobustCommand{\UFXGSL}
2173  {\ensuremath{\forall}\FXGSL}
2174 %** Syntax *****%

```

\BndSet ...

```

... 2175 \newcommand{\bndsym}{\flat}
2176 \newcommand{\bndset}{Bn}
2177 \cmdmthsetext{Bnd}[\bndset][\bndsym]
2178 \cmdmthsymelm{idbnd}[\bndsym_{\text{id}}]
2179 \usrmth{bnd}{\}{argfun}

```

\psn ...

```

2180 \usrmth{psn}{\}{argfun}

2181 %** Semantics *****%

```

\nxt ...

```

2182 \usrmth{nxt}{\}{argfun}

2183 \fi
2184 %*****%

2185 %*****%
2186 %** Macros for Automata *****%
2187 %*****%
2188 \ifaut@

2189 %** Finite Word Automata *****%

```

\DFA ...

```

... 2190 \cmdtxtoparname{DFA}\cmdtxtoparname{NFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}
2191
2192 \cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}
2193
2194 \cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
2195 \cmdtxtoparname{DWW}\cmdtxtoparname{NWW}\cmdtxtoparname{UWW}\cmdtxtoparname{AWW}
2196 \cmdtxtoparname{DBW}\cmdtxtoparname{NBW}\cmdtxtoparname{UBW}\cmdtxtoparname{ABW}
2197 \cmdtxtoparname{DCW}\cmdtxtoparname{NCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}
2198 \cmdtxtoparname{DPW}\cmdtxtoparname{NPW}\cmdtxtoparname{UPW}\cmdtxtoparname{APW}
2199 \cmdtxtoparname{DRW}\cmdtxtoparname{NRW}\cmdtxtoparname{URW}\cmdtxtoparname{ARW}
2200 \cmdtxtoparname{DSW}\cmdtxtoparname{NSW}\cmdtxtoparname{USW}\cmdtxtoparname{ASW}
2201 \cmdtxtoparname{DMW}\cmdtxtoparname{NMW}\cmdtxtoparname{UMW}\cmdtxtoparname{AMW}

```

```

\GFG ...
... 2202 \cmdtxtopname{GFG}
2203
2204 \cmdtxtopname{PD}
2205 \cmdtxtopname{PN}
2206
2207 \cmdtxtopname{LD}
2208 \cmdtxtopname{LN}
2209 %** Syntax *****%

\AutName ...
... 2210 \newcommand{\autname}{A}
2211 \usrmthlatupp{Aut}{Name}{name}[\autname]
2212 \newcommand{\autset}{Aut}
2213 \cmdmthset{Aut}[\autset]

\WAutSet ...
2214 \newcommand{\wautset}{WAut}
2215 \cmdmthset{WAut}[\wautset]

\SymSet ...
... 2216 \newcommand{\symsym}{\sigma}
2217 \newcommand{\symset}{\Sigma}
2218 \cmdmthsetext{Sym}{\symset}[\symsym]

\SttSet ...
... 2219 \providecommand{\sttsym}{q}
2220 \providecommand{\sttset}{Q}
2221 \cmdmthsetext{Stt}{\sttset}[\sttsym]
2222 \cmdmthset{IStt}[\sttset_I]
2223 \cmdmthsymelm{istt}[\sttsym_I]
2224 \cmdmthset{FStt}[\sttset_F]
2225 \cmdmthsymelm{fstt}[\sttsym_F]

\trnFun ...
\trnRel 2226 \providecommand{\trnsym}{\delta}
2227 \cmdmthfun{trn}[\trnsym]
2228 \cmdmthrel{trn}[\trnsym]
2229 %** Semantics *****%

\WrdSet ...
... 2230 \newcommand{\wrdsym}{w}
2231 \newcommand{\wrddset}{Wr}
2232 \cmdmthsetext{Wrd}[\wrddset][\wrdsym]

\Lang ...
2233 \usrmth{Lang}{-}{argfun}[L]
2234 %** Finite Tree Automata *****%

\DTA ...
... 2235 \cmdtxtopname{DTA}\cmdtxtopname{NTA}\cmdtxtopname{UTA}\cmdtxtopname{ATA}
2236
2237 \cmdtxtopname{DFT}\cmdtxtopname{NFT}\cmdtxtopname{UFT}\cmdtxtopname{AFT}
2238 \cmdtxtopname{DWT}\cmdtxtopname{NWT}\cmdtxtopname{UWT}\cmdtxtopname{AWT}
2239 \cmdtxtopname{DBT}\cmdtxtopname{NBT}\cmdtxtopname{UBT}\cmdtxtopname{ABT}
2240 \cmdtxtopname{DCT}\cmdtxtopname{NCT}\cmdtxtopname{UCT}\cmdtxtopname{ACT}
2241 \cmdtxtopname{DPT}\cmdtxtopname{NPT}\cmdtxtopname{UPT}\cmdtxtopname{APT}
2242 \cmdtxtopname{DRT}\cmdtxtopname{NRT}\cmdtxtopname{URT}\cmdtxtopname{ART}
2243 \cmdtxtopname{DST}\cmdtxtopname{NST}\cmdtxtopname{UST}\cmdtxtopname{AST}
2244 \cmdtxtopname{DMT}\cmdtxtopname{NMT}\cmdtxtopname{UMT}\cmdtxtopname{AMT}

```

```

2245 %** Syntax *****%%

\TautSet ...
2246 \newcommand{\tautset}{TAut}
2247 \cmdmthset{TAut}[\tautset]

\DirSet ...
... 2248 \newcommand{\dirsym}{d}
2249 \newcommand{\dirset}{\Lambda}
2250 \cmdmthsetext{Dir}[\dirset][\dirsym]
2251 %** Semantics *****%%

\TreeSet ...
... 2252 \newcommand{\treesym}{T}
2253 \newcommand{\treeset}{Tr}
2254 \cmdmthsetext{Tree}[\treeset][\treesym]

\wot ...
2255 \usrmth{wot}{-}{argfun}

2256 \fi
2257 %*****%%

2258 %*****%%
2259 %** Format Tricks *****%%
2260 %*****%%
2261 \iffm@

... ..
2262 %...

2263 \fi
2264 %*****%%

2265 %*****%%
2266 %** Figure Tricks *****%%
2267 %*****%%
2268 \iffig@

2269 \RequirePackage{tikz}
2270 \usetikzlibrary{arrows,shapes,patterns,graphs,matrix}

2271 \tikzstyle{every node} =
2272   [draw = none, fill = none, black, thin]
2273 \tikzstyle{every edge} +=
2274   [black, thick]

2275 \tikzstyle{noall} =
2276   [draw = none, fill = none]
2277 \tikzstyle{nodraw} =
2278   [draw = none, fill = white]
2279 \tikzstyle{nofill} =
2280   [draw = black, fill = none]

2281 \ifwrpfig@
2282   % Wrapfig Package
2283   \RequirePackage{wrapfig}
2284 \fi

2285 \fi
2286 %*****%%

2287 %*****%%
2288 %** Table Tricks *****%%
2289 %*****%%
2290 \iftab@

```

```

... ..
2291 %%.
2292 \fi
2293 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2294 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2295 %** Algorithm Tricks %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2296 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2297 \ifalg@
2298 \RequirePackage[ruled,vlined]{algorithm2e}
2299 \DontPrintSemicolon
2300 \SetInd{0.25em}{0.5em}
2301 \setlength{\algomargin}{1.25em}

\Signature ...
2302 \SetKw{Signature}{signature}

\Macro ...
... 2303 \SetKwFor{Macro}{macro}{}{}
2304 \SetKwFor{Function}{function}{}{}
2305 \SetKwFor{Procedure}{procedure}{}{}

\Let ...
2306 \SetKwFor{Let}{let}{in}{}

\True ...
\False 2307 \SetKw{True}{true}
2308 \SetKw{False}{false}

\From ...
... 2309 \SetKw{From}{from}
2310 \SetKw{To}{to}
2311 \SetKw{DownTo}{downto}

\GoTo ...
... 2312 \SetKw{GoTo}{goto}
2313 \SetKw{Break}{break}
2314 \SetKw{Continue}{continue}

\MIf ...
... 2315 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

\nlr ...
2316 \DeclareRobustCommand{\nlr}[1]
2317 {\addtocounter{AlgoLine}{1}%
2318 \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

2319 \fi
2320 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
2321 \endinput
2322 \</package>

```

## 2 Change History

|       |                                                  |       |                                                                  |
|-------|--------------------------------------------------|-------|------------------------------------------------------------------|
| v0.0  | General: First public release . . . . . 1        | v0.21 | General: Refactoring of function macros . . . . 1                |
| v0.1  | General: Algorithm tricks . . . . . 1            | v0.22 | General: Few additions . . . . . 1                               |
| v0.10 | General: Small refinements . . . . . 1           | v0.23 | General: New ‘Graphs’ section and small improvements . . . . . 1 |
| v0.11 | General: Few additions and corrections . . . . 1 | v0.24 | General: Correction of fragile macros . . . . . 1                |
| v0.12 | General: New starred variants . . . . . 1        | v0.25 | General: Few additions and corrections . . . . 1                 |
| v0.13 | General: Further starred variants . . . . . 1    | v0.26 | General: Few additions . . . . . 1                               |
| v0.14 | General: Few additions and corrections . . . . 1 | v0.3  | General: Few problems solved . . . . . 1                         |
| v0.15 | General: Refactoring of dtx sources . . . . . 1  | v0.4  | General: Refactoring, corrections, and extensions . . . . . 1    |
| v0.16 | General: Small refinements and few additions 1   | v0.5  | General: Figure tricks . . . . . 1                               |
| v0.17 | General: Few additions . . . . . 1               | v0.6  | General: Small refinements . . . . . 1                           |
| v0.18 | General: Few new starred variants . . . . . 1    | v0.7  | General: Refinements, corrections, and extensions . . . . . 1    |
| v0.19 | General: Additional starred variants . . . . . 1 | v0.8  | General: Few refinements and corrections . . . 1                 |
| v0.2  | General: Changes in ‘Auxiliary tricks’ . . . . 1 | v0.9  | General: Small addition to ‘Algorithm tricks’ 1                  |
| v0.20 | General: New binary operators . . . . . 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 |                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \!      | 427, 451, 905, 992, 1000, 1002, 1004, 1821                                                                                                                                                                                                                                                                                                             | 1197, 1198, 1199, 1200, 1201, 1219, 1221, 1242, 1264, 1266, 1279, 1287, 1299, 1318, 1346, 1371, 1382, 1404, 1414, 1421, 1426, 1428, 1431, 1435, 1445, 1452, 1458, 1465, 1471, 1479, 1481, 1483, 1485, 1488, 1518, 1552, 1555, 1560, 1608, 1639, 1641, 1650, 1655, 1689, 1711, 1716, 1723, 1775, 1826, 1828, 1831, 1834, 1843, 1850, 1862, 1870, 1874, 1881, 1889, 2023, 2175, 2190, 2202, 2210, 2216, 2219, 2230, 2235, 2248, 2252, 2262, 2291, 2303, 2309, 2312, 2315                                                                                                                                                                |
| \"      | 858, 859                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| \#      | 2315                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| \,      | 994, 996, 1002, 1004, 1136, 1139, 1140, 1711, 1712, 1713, 1714, 1715, 1716, 1717, 1718, 1719, 1720                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| \...    | 144, 535, 547, 560, 572, 590, 592, 603, 605, 616, 618, 629, 631, 642, 644, 655, 657, 674, 676, 687, 689, 700, 702, 713, 715, 743, 746, 755, 757, 768, 770, 782, 784, 795, 797, 889, 891, 894, 898, 902, 907, 911, 923, 938, 940, 964, 989, 1025, 1047, 1056, 1063, 1067, 1075, 1083, 1091, 1096, 1135, 1137, 1183, 1187, 1192, 1193, 1194, 1195, 1196, | \@abs . . . . . 1108, 1109<br>\@all . . . . . 1633, 1636<br>\@card . . . . . 1014, 1015<br>\@ceil . . . . . 1126, 1127<br>\@denot . . . . . 917, 918<br>\@exs . . . . . 1627, 1630<br>\@floor . . . . . 1120, 1121<br>\@for . . . . . 176, 180<br>\@ifnextchar . . . . . 815<br>\@ifstar . . . . . 300, 306, 312, 318, 324, 330, 336, 342, 348, 354, 363, 365, 367, 369, 371, 377, 382, 387, 392, 397, 405, 413, 419, 425, 431, 437, 443, 449, 455, 461, 467, 476, 478, 480, 482, 484, 490, 493, 496, 499, 502, 508, 883, 887, 917, 932, 941, 945, 949, 953, 957, 961, 965, 969, 973, 977, 981, 985, 990, 992, 998, 1000, 1006, 1008, |
| \@      | 815, 821, 826, 830, 831, 832, 837, 838, 847, 864, 865, 867, 868, 869, 870, 871, 873, 874                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



|                  |                              |                   |                         |                 |                             |
|------------------|------------------------------|-------------------|-------------------------|-----------------|-----------------------------|
| \BndSet          | 2175                         | \cmdmthoargmat    | 789                     | \cmdmthsig      | 632                         |
| \bndset          | 2176, 2177                   | \cmdmthoargname   | 597                     | \cmdmthstnt     | 758                         |
| \bndsym          | 2175, 2177, 2178             | \cmdmthoargrel    | 681                     | \cmdmthstr      | 645                         |
| \boldsymbol      | 783, 796                     | \cmdmthoargset    | 662                     | \cmdmthsym      |                             |
| \bot             | 1386                         | \cmdmthoargsig    | 636                     |                 | 703, 728, 1261, 1263,       |
| \bound           | 1417                         | \cmdmthoargsnt    | 762                     |                 | 1337, 1339, 1356, 1358      |
| \Box             | 1625                         | \cmdmthoargstr    | 649                     | \cmdmthsymelm   |                             |
| \boxminus        | 1357                         | \cmdmthoargsym    | 707, 734                |                 | 727, 1224, 1225,            |
| \bst             | 1135                         | \cmdmthoargsymelm | 733                     |                 | 1269, 1270, 1272, 1274,     |
|                  |                              | \cmdmthoargvec    | 802                     |                 | 1291, 1293, 1303, 1305,     |
|                  |                              | \cmdmthopar       | 500, 504                |                 | 1644, 1837, 1838, 1840,     |
|                  |                              | \cmdmthoparcls    | 627                     |                 | 1842, 1847, 1849, 1866,     |
|                  |                              | \cmdmthoparelm    | 724, 741                |                 | 1868, 1878, 1880, 1885,     |
|                  |                              | \cmdmthoparfam    | 614                     |                 | 1887, 2178, 2223, 2225      |
|                  |                              | \cmdmthoparfrm    | 779                     | \cmdmthvec      | 798                         |
|                  |                              | \cmdmthoparfun    | 698                     | \cmdtxt         | 375, 401                    |
|                  |                              | \cmdmthoparmat    | 793                     | \cmdtxtabr      | 549,                        |
|                  |                              | \cmdmthoparname   | 601                     |                 | 817, 818, 819, 820, 821,    |
|                  |                              | \cmdmthoparrel    | 685                     |                 | 822, 823, 824, 825, 826,    |
|                  |                              | \cmdmthoparset    | 666                     |                 | 827, 828, 829, 830, 831,    |
|                  |                              | \cmdmthoparsig    | 640                     |                 | 832, 833, 834, 835, 836,    |
|                  |                              | \cmdmthoparsnt    | 766                     |                 | 837, 838, 840, 841, 842,    |
|                  |                              | \cmdmthoparstr    | 653                     |                 | 843, 844, 845, 846, 847,    |
|                  |                              | \cmdmthoparsym    | 711, 740                |                 | 848, 849, 850, 851, 852,    |
|                  |                              | \cmdmthoparsymelm | 739                     |                 | 853, 857, 858, 859, 860,    |
|                  |                              | \cmdmthoparvec    | 806                     |                 | 862, 864, 865, 866, 867,    |
|                  |                              | \cmdmthpar        | 497, 504                |                 | 868, 869, 870, 871, 873,    |
|                  |                              | \cmdmthparcls     | 625                     |                 | 874, 1421, 1422, 1423, 1424 |
|                  |                              | \cmdmthparelm     | 722, 738                | \cmdtxtall      | 400, 536, 548, 561, 573     |
|                  |                              | \cmdmthparfam     | 612                     | \cmdtxtarg      | 380, 401                    |
|                  |                              | \cmdmthparfrm     | 777                     | \cmdtxtargabr   | 551                         |
|                  |                              | \cmdmthparfun     | 696                     | \cmdtxtargcom   | 576                         |
|                  |                              | \cmdmthparmat     | 791                     | \cmdtxtargdef   | 539                         |
|                  |                              | \cmdmthparname    | 599                     | \cmdtxtargname  | 564                         |
|                  |                              | \cmdmthparrel     | 683                     | \cmdtxtcom      | 574, 1183, 1184, 1185       |
|                  |                              | \cmdmthparset     | 664                     | \cmdtxtdef      | 537                         |
|                  |                              | \cmdmthparsig     | 638                     | \cmdtxtname     | 562, 1825                   |
|                  |                              | \cmdmthparsnt     | 764                     | \cmdtxtoarg     | 385, 401                    |
|                  |                              | \cmdmthparstr     | 651                     | \cmdtxtoargabr  | 553                         |
|                  |                              | \cmdmthparsym     | 709, 737                | \cmdtxtoargcom  | 578                         |
|                  |                              | \cmdmthparsymelm  | 736                     | \cmdtxtoargdef  | 541                         |
|                  |                              | \cmdmthparvec     | 804                     | \cmdtxtoargname | 566                         |
|                  |                              | \cmdmthrel        |                         | \cmdtxtopar     | 395, 401                    |
|                  |                              |                   | 677, 1227, 1278, 1646,  | \cmdtxtoparabr  | 557                         |
|                  |                              |                   | 1647, 1855, 1858, 2228  | \cmdtxtoparcom  | 582                         |
|                  |                              | \cmdmthset        | 658,                    | \cmdtxtopardef  | 545                         |
|                  |                              |                   | 669, 1271, 1273, 1282,  | \cmdtxtoparname |                             |
|                  |                              |                   | 1284, 1290, 1292, 1302, |                 | 570, 1243, 1246, 1249,      |
|                  |                              |                   | 1304, 1839, 1841, 1846, |                 | 1252, 1255, 1258, 1319,     |
|                  |                              |                   | 1848, 1865, 1867, 1877, |                 | 1322, 1325, 1328, 1331,     |
|                  |                              |                   | 1879, 1884, 1886, 2213, |                 | 1334, 1347, 1350, 1353,     |
|                  |                              |                   | 2215, 2222, 2224, 2247  |                 | 1372, 1436, 1437, 1489,     |
|                  |                              | \cmdmthsetext     |                         |                 | 1492, 1495, 1498, 1501,     |
|                  |                              |                   | 668, 1223, 1231,        |                 | 1504, 1507, 1510, 1519,     |
|                  |                              |                   | 1268, 1289, 1297, 1301, |                 | 1520, 1561, 1584, 1609,     |
|                  |                              |                   | 1308, 1342, 1361, 1406, |                 | 1656, 1690, 1701, 1724,     |
|                  |                              |                   | 1416, 1430, 1433, 1449, |                 | 1727, 1742, 1757, 1776,     |
|                  |                              |                   | 1456, 1462, 1469, 1475, |                 | 1791, 1806, 1890, 2024,     |
|                  |                              |                   | 1554, 1557, 1643, 1652, |                 | 2190, 2192, 2194, 2195,     |
|                  |                              |                   | 1830, 1833, 1836, 1845, |                 | 2196, 2197, 2198, 2199,     |
|                  |                              |                   | 1852, 1861, 1864, 1872, |                 | 2200, 2201, 2202, 2204,     |
|                  |                              |                   | 1876, 1883, 2177, 2218, |                 | 2205, 2207, 2208, 2235,     |
|                  |                              |                   | 2221, 2232, 2250, 2254  |                 |                             |
| \card            | 1013                         |                   |                         |                 |                             |
| \caselower       | 669                          |                   |                         |                 |                             |
| \cdot            | 1020                         |                   |                         |                 |                             |
| \ceil            | 1119                         |                   |                         |                 |                             |
| \cequiv          | 911                          |                   |                         |                 |                             |
| \cf              | 821                          |                   |                         |                 |                             |
| \CGPL            | 1923, 1927, 1929, 1932       |                   |                         |                 |                             |
| \CGS             | 1825                         |                   |                         |                 |                             |
| \CGSL            | 2057, 2061, 2063, 2066       |                   |                         |                 |                             |
| \CGSStr          | 1826                         |                   |                         |                 |                             |
| \cgsstr          | 1826, 1827                   |                   |                         |                 |                             |
| \chgbar@false    | 44                           |                   |                         |                 |                             |
| \chgbar@true     | 45                           |                   |                         |                 |                             |
| \chi             | 1431                         |                   |                         |                 |                             |
| \circ            | 1036                         |                   |                         |                 |                             |
| \cmdmth          | 488, 504, 744, 745, 751      |                   |                         |                 |                             |
| \cmdmthall       | 503, 591, 604, 617,          |                   |                         |                 |                             |
|                  | 630, 643, 656, 675, 688,     |                   |                         |                 |                             |
|                  | 701, 714, 756, 769, 783, 796 |                   |                         |                 |                             |
| \cmdmtharg       | 491, 504                     |                   |                         |                 |                             |
| \cmdmthargcls    | 621                          |                   |                         |                 |                             |
| \cmdmthargelm    | 718, 732                     |                   |                         |                 |                             |
| \cmdmthargfam    | 608                          |                   |                         |                 |                             |
| \cmdmthargfrm    | 773                          |                   |                         |                 |                             |
| \cmdmthargfun    | 692                          |                   |                         |                 |                             |
| \cmdmthargmat    | 787                          |                   |                         |                 |                             |
| \cmdmthargname   | 595                          |                   |                         |                 |                             |
| \cmdmthargrel    | 679                          |                   |                         |                 |                             |
| \cmdmthargset    | 660                          |                   |                         |                 |                             |
| \cmdmthargsig    | 634                          |                   |                         |                 |                             |
| \cmdmthargsnt    | 760                          |                   |                         |                 |                             |
| \cmdmthargstr    | 647                          |                   |                         |                 |                             |
| \cmdmthargsym    | 705, 731                     |                   |                         |                 |                             |
| \cmdmthargsymelm | 730                          |                   |                         |                 |                             |
| \cmdmthargvec    | 800                          |                   |                         |                 |                             |
| \cmdmthcls       | 619                          |                   |                         |                 |                             |
| \cmdmthelm       | 716, 729                     |                   |                         |                 |                             |
| \cmdmthfam       | 606                          |                   |                         |                 |                             |
| \cmdmthfrm       | 771                          |                   |                         |                 |                             |
| \cmdmthfun       | 690,                         |                   |                         |                 |                             |
|                  | 1276, 1285, 1343, 1362,      |                   |                         |                 |                             |
|                  | 1649, 1854, 1857, 2227       |                   |                         |                 |                             |
| \cmdmthlbop      | 748                          |                   |                         |                 |                             |
| \cmdmthlrel      | 752                          |                   |                         |                 |                             |
| \cmdmthluop      | 746                          |                   |                         |                 |                             |
| \cmdmthmat       | 785                          |                   |                         |                 |                             |
| \cmdmthname      | 593                          |                   |                         |                 |                             |
| \cmdmthoarg      | 494, 504                     |                   |                         |                 |                             |
| \cmdmthoargcls   | 623                          |                   |                         |                 |                             |
| \cmdmthoargelm   | 720, 735                     |                   |                         |                 |                             |
| \cmdmthoargfam   | 610                          |                   |                         |                 |                             |
| \cmdmthoargfrm   | 775                          |                   |                         |                 |                             |
| \cmdmthoargfun   | 694                          |                   |                         |                 |                             |

2237, 2238, 2239, 2240,  
 2241, 2242, 2243, 2244  
 \cmdtxtpar ..... 390, 401  
 \cmdtxtparabr ..... 555  
 \cmdtxtparcom ..... 580  
 \cmdtxtpardef ..... 543  
 \cmdtxtparname ..... 568  
 \cmodels ..... 907  
 \cmp ..... 1035  
 \cnf ..... 1421  
 \Cnt ..... 1409  
 \cod ..... 1025  
 \coimplies ..... 902  
 \Coloneqq ..... 887  
 \coloneqq ..... 887  
 \com@false ..... 56, 77, 79  
 \com@true ..... 78  
 \conset ..... 1455, 1456  
 \ConSig ..... 1452  
 \consig ..... 1452, 1453  
 \ConStr ..... 1479  
 \constr ..... 1479, 1480  
 \consym ..... 1454, 1456  
 \Contd ..... 873  
 \contd ..... 865  
 \coWMPL ..... 1603  
 \coWMSO ..... 1549  
 \coWMSOL ..... 1547  
 \coWMTL ..... 1580  
 \coWPL ..... 1591  
 \coWSO ..... 1531  
 \coWSOL ..... 1529  
 \coWTL ..... 1568  
 \crv@false ..... 40  
 \crv@true ..... 41  
 \csdef 143, 144, 145, 146, 147,  
 376, 381, 386, 391, 396,  
 404, 489, 492, 495, 498,  
 501, 507, 1163, 1179, 1181  
 \csedef ..... 177, 181  
 \csname . 167, 168, 169, 170,  
 171, 172, 173, 178, 182,  
 378, 379, 383, 384, 388,  
 389, 393, 394, 398, 399,  
 406, 407, 415, 417, 509, 510  
 \CTL ..... 1723  
 \CTLP ... 1746, 1750, 1752, 1754  
 \CTLS ... 1761, 1765, 1767, 1769  
 \CurrentOption ..... 131

## D

\DBH ..... 1206  
 \DeclareMathAlphabet ....  
 ..... 291, 292, 293, 294  
 \DeclareMathOperator 1041, 1043  
 \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, 99,  
 100, 105, 106, 111, 112,  
 116, 121, 122, 127, 128, 131  
 \DeclareRobustCommand ...  
 .. 152, 157, 159, 161,

163, 166, 175, 179, 184,  
 186, 188, 191, 195, 199,  
 202, 204, 206, 299, 305,  
 311, 317, 323, 329, 335,  
 341, 347, 353, 359, 362,  
 364, 366, 368, 370, 375,  
 380, 385, 390, 395, 400,  
 412, 418, 424, 430, 436,  
 442, 448, 454, 460, 466,  
 472, 475, 477, 479, 481,  
 483, 488, 491, 494, 497,  
 500, 503, 814, 882, 886,  
 889, 891, 894, 896, 898,  
 900, 902, 904, 907, 909,  
 911, 913, 916, 918, 920,  
 923, 925, 927, 929, 931,  
 933, 935, 940, 944, 948,  
 952, 956, 960, 964, 968,  
 972, 976, 980, 984, 989,  
 991, 993, 995, 997, 999,  
 1001, 1003, 1005, 1007,  
 1009, 1011, 1013, 1015,  
 1017, 1019, 1022, 1031,  
 1033, 1035, 1038, 1059,  
 1061, 1063, 1065, 1067,  
 1069, 1071, 1073, 1075,  
 1077, 1079, 1081, 1083,  
 1085, 1087, 1089, 1091,  
 1093, 1096, 1098, 1100,  
 1102, 1104, 1107, 1109,  
 1111, 1113, 1115, 1117,  
 1119, 1121, 1123, 1125,  
 1127, 1129, 1146, 1148,  
 1150, 1152, 1375, 1377,  
 1379, 1440, 1442, 1523,  
 1525, 1529, 1531, 1535,  
 1537, 1541, 1543, 1547,  
 1549, 1564, 1568, 1572,  
 1576, 1580, 1587, 1591,  
 1595, 1599, 1603, 1612,  
 1616, 1618, 1620, 1626,  
 1628, 1630, 1632, 1634,  
 1636, 1659, 1663, 1665,  
 1667, 1671, 1675, 1679,  
 1681, 1683, 1693, 1695,  
 1697, 1704, 1706, 1708,  
 1730, 1734, 1736, 1738,  
 1745, 1749, 1751, 1753,  
 1760, 1764, 1766, 1768,  
 1779, 1783, 1785, 1787,  
 1794, 1798, 1800, 1802,  
 1809, 1813, 1815, 1817,  
 1820, 1822, 1892, 1894,  
 1897, 1900, 1902, 1909,  
 1911, 1914, 1917, 1919,  
 1926, 1928, 1931, 1934,  
 1936, 1943, 1945, 1948,  
 1951, 1953, 1960, 1962,  
 1965, 1968, 1970, 1977,  
 1979, 1982, 1985, 1987,  
 1994, 1996, 1999, 2002,  
 2004, 2011, 2013, 2016,  
 2019, 2021, 2026, 2028,

2031, 2034, 2036, 2043,  
 2045, 2048, 2051, 2053,  
 2060, 2062, 2065, 2068,  
 2070, 2077, 2079, 2082,  
 2085, 2087, 2094, 2096,  
 2099, 2102, 2104, 2111,  
 2113, 2116, 2119, 2121,  
 2128, 2130, 2133, 2136,  
 2138, 2145, 2147, 2150,  
 2153, 2155, 2162, 2164,  
 2167, 2170, 2172, 2316  
 \DeclareRobustCommandx ..  
 .. 301, 303, 307, 309,  
 313, 315, 319, 321, 325,  
 327, 331, 333, 337, 339,  
 343, 345, 349, 351, 355,  
 357, 403, 414, 416, 420,  
 422, 426, 428, 432, 434,  
 438, 440, 444, 446, 450,  
 452, 456, 458, 462, 464,  
 468, 470, 506, 512, 514,  
 516, 518, 520, 522, 524,  
 526, 528, 537, 539, 541,  
 543, 545, 549, 551, 553,  
 555, 557, 562, 564, 566,  
 568, 570, 574, 576, 578,  
 580, 582, 593, 595, 597,  
 599, 601, 606, 608, 610,  
 612, 614, 619, 621, 623,  
 625, 627, 632, 634, 636,  
 638, 640, 645, 647, 649,  
 651, 653, 658, 660, 662,  
 664, 666, 668, 677, 679,  
 681, 683, 685, 690, 692,  
 694, 696, 698, 703, 705,  
 707, 709, 711, 716, 718,  
 720, 722, 724, 727, 730,  
 733, 736, 739, 746, 748,  
 752, 758, 760, 762, 764,  
 766, 771, 773, 775, 777,  
 779, 785, 787, 789, 791,  
 793, 798, 800, 802, 804,  
 806, 1906, 1923, 1940,  
 1957, 1974, 1991, 2008,  
 2040, 2057, 2074, 2091,  
 2108, 2125, 2142, 2159  
 \DecSet ..... 1850  
 \decset ..... 1851, 1852  
 \decsym ..... 1850, 1852  
 \Dedicto ..... 843  
 \dedicto ..... 822  
 \Defacto ..... 844  
 \defacto ..... 823  
 \defcomcls ..... 1162,  
 1187, 1188, 1189, 1190  
 \defcomclsgrp .....  
 .... 1164, 1192, 1193,  
 1194, 1195, 1196, 1197,  
 1198, 1199, 1200, 1201  
 \defcomclsgrpcmd .... 1174,  
 1175, 1176, 1177, 1178  
 \defcomclsgrpred 1168, 1169,  
 1170, 1171, 1172, 1173



|                                                     |                                                      |      |                                                |
|-----------------------------------------------------|------------------------------------------------------|------|------------------------------------------------|
| <code>\defcomclsgprsem</code> . . . . .             | <code>\EDGSL</code> . . . . .                        | 2077 | 2027, 2029, 2035, 2037,                        |
| . . . . . 1165, 1166, 1167                          | <code>\EEGPL</code> . . . . .                        | 1977 | 2044, 2046, 2052, 2054,                        |
| <code>\defcomhrc</code> . . . . . 1180, 1203,       | <code>\EEGSL</code> . . . . .                        | 2111 | 2061, 2063, 2069, 2071,                        |
| 1204, 1205, 1206, 1207,                             | <code>\EExs</code> . . . . .                         | 1820 | 2078, 2080, 2086, 2088,                        |
| 1208, 1209, 1210, 1211                              | <code>\EFAGPL</code> . . . . .                       | 1968 | 2095, 2097, 2103, 2105,                        |
| <code>\defeq</code> . . . . . 882                   | <code>\EFAGSL</code> . . . . .                       | 2102 | 2112, 2114, 2120, 2122,                        |
| <code>\defval</code> . . . . . 154, 308, 310,       | <code>\EFBGPL</code> . . . . .                       | 2002 | 2129, 2131, 2137, 2139,                        |
| 320, 322, 332, 334, 344,                            | <code>\EFBGSL</code> . . . . .                       | 2136 | 2146, 2148, 2154, 2156,                        |
| 346, 356, 358, 406, 407,                            | <code>\EFCGPL</code> . . . . .                       | 1934 | 2163, 2165, 2171, 2173                         |
| 421, 423, 433, 435, 445,                            | <code>\EFCGSL</code> . . . . .                       | 2068 | <code>\ent</code> . . . . . 1309               |
| 447, 457, 459, 469, 471,                            | <code>\EFDGPL</code> . . . . .                       | 1951 | <code>\enumeration</code> . . . . . 938        |
| 509, 510, 671, 673, 1020,                           | <code>\EFDGSL</code> . . . . .                       | 2085 | <code>\EOGPL</code> . . . . . 1909             |
| 1163, 1165, 1166, 1181,                             | <code>\EFEGPL</code> . . . . .                       | 1985 | <code>\EOGSL</code> . . . . . 2043             |
| 1631, 1637, 1821, 1823                              | <code>\EFEGSL</code> . . . . .                       | 2119 | <code>\EPL</code> . . . . . 1892               |
| <code>\deg</code> . . . . . 1029                    | <code>\EFNGSL</code> . . . . .                       | 2153 | <code>\EPTL</code> . . . . . 1695              |
| <code>\Delta</code> . . . . . 1206, 1207            | <code>\EFOGPL</code> . . . . .                       | 1917 | <code>\equiv</code> . . . . . 912, 914         |
| <code>\delta</code> . . . . . 1856, 2226            | <code>\EFOGSL</code> . . . . .                       | 2051 | <code>\ergo</code> . . . . . 827               |
| <code>\denot</code> . . . . . 916                   | <code>\EFPL</code> . . . . .                         | 1900 | <code>\Errata</code> . . . . . 848             |
| <code>\dep</code> . . . . . 1419                    | <code>\EFSL</code> . . . . .                         | 2034 | <code>\errata</code> . . . . . 828             |
| <code>\der</code> . . . . . 927                     | <code>\EFXGPL</code> . . . . .                       | 2019 | <code>\Erratum</code> . . . . . 849            |
| <code>\Dere</code> . . . . . 845                    | <code>\EFXGSL</code> . . . . .                       | 2170 | <code>\erratum</code> . . . . . 829            |
| <code>\dere</code> . . . . . 824                    | <code>\EG</code> . . . . .                           | 1346 | <code>\esc</code> . . . . . 1309               |
| <code>\DF</code> . . . . . 1488                     | <code>\Eg</code> . . . . .                           | 847  | <code>\ESL</code> . . . . . 2026               |
| <code>\DFA</code> . . . . . 2190                    | <code>\eg</code> . . . . .                           | 826  | <code>\etal</code> . . . . . 830               |
| <code>\DGPL</code> . . . . . 1940, 1944, 1946, 1949 | <code>\EGPL</code> . . . . . 1974, 1978, 1980, 1983  |      | <code>\etc</code> . . . . . 831                |
| <code>\DGSL</code> . . . . . 2074, 2078, 2080, 2083 | <code>\EGSL</code> . . . . . 2108, 2112, 2114, 2117  |      | <code>\evn</code> . . . . . 1133               |
| <code>\Diamond</code> . . . . . 1624                | <code>\ELH</code> . . . . .                          | 1208 | <code>\EvnSym</code> . . . . . 1336            |
| <code>\DirSet</code> . . . . . 2248                 | <code>\else</code> . . . . . 153, 155, 164, 263, 277 |      | <code>\evnsym</code> . . . . . 1336, 1337      |
| <code>\dirset</code> . . . . . 2249, 2250           | <code>\ELTL</code> . . . . .                         | 1706 | <code>\ExecuteOptions</code> . . . . . 133     |
| <code>\dirsym</code> . . . . . 2248, 2250           | <code>\em</code> . . . . . 536, 548                  |      | <code>\EXGPL</code> . . . . . 2011             |
| <code>\Divideetimpera</code> . . . . . 846          | <code>\EMC</code> . . . . .                          | 1665 | <code>\EXGSL</code> . . . . . 2162             |
| <code>\divideetimpera</code> . . . . . 825          | <code>\EML</code> . . . . .                          | 1618 | <code>\exists</code> . . . . . 1378,           |
| <code>\DLH</code> . . . . . 1206                    | <code>\empchk</code> . . . . . 152, 158, 160,        |      | 1400, 1412, 1413, 1619,                        |
| <code>\DMod</code> . . . . . 1624, 1629, 1631       | 162, 168, 360, 473, 671, 673                         |      | 1666, 1682, 1696, 1707,                        |
| <code>\dnf</code> . . . . . 1421                    | <code>\emptyfun</code> . . . . .                     | 1038 | 1737, 1752, 1767, 1786,                        |
| <code>\do</code> . . . . . 176, 180                 | <code>\emptyrel</code> . . . . .                     | 1022 | 1801, 1816, 1893, 1901,                        |
| <code>\dom</code> . . . . . 1025                    | <code>\emptyseq</code> . . . . .                     | 1146 | 1910, 1918, 1927, 1935,                        |
| <code>\DontPrintSemicolon</code> . . . . . 2299     | <code>\emptyset</code> . . . . . 1821, 1823          |      | 1944, 1952, 1961, 1969,                        |
| <code>\dotcheck</code> . . . . . 814                | <code>\endcsname</code> 167, 168, 169, 170,          |      | 1978, 1986, 1995, 2003,                        |
| <code>\downarrow</code> . . . . . 1032              | 171, 172, 173, 178, 182,                             |      | 2012, 2020, 2027, 2035,                        |
| <code>\DTA</code> . . . . . 2235                    | 378, 379, 383, 384, 388,                             |      | 2044, 2052, 2061, 2069,                        |
| <code>\dual</code> . . . . . 923                    | 389, 393, 394, 398, 399,                             |      | 2078, 2086, 2095, 2103,                        |
|                                                     | 406, 407, 415, 417, 509, 510                         |      | 2112, 2120, 2129, 2137,                        |
|                                                     |                                                      |      | 2146, 2154, 2163, 2171                         |
| <b>E</b>                                            | <code>\endinput</code> . . . . .                     | 2321 | <code>\expandafter</code> . . . . .            |
| <code>\E</code> . . . . . 1771                      | <code>\ENGSL</code> . . . . .                        | 2145 | . . . . . 167, 169, 172, 177, 181              |
| <code>\EAFMC</code> . . . . . 1681                  | <code>\enmtls@false</code> . . . . .                 | 29   | <code>\ExpSpace</code> . . . . . 1201          |
| <code>\EAGPL</code> . . . . . 1960                  | <code>\enmtls@true</code> . . . . .                  | 28   | <code>\ExpTime</code> . . . . . 1200           |
| <code>\EAGSL</code> . . . . . 2094                  | <code>\ensuremath</code> . . . . . 360, 415,         |      | <code>\Exs</code> . . . . . 1626               |
| <code>\Easy</code> . . . . . 1183                   | 417, 1042, 1044, 1378,                               |      |                                                |
| <code>\EATL</code> . . . . . 1785                   | 1380, 1619, 1621, 1656,                              |      | <b>F</b>                                       |
| <code>\EATLP</code> . . . . . 1800                  | 1666, 1668, 1682, 1684,                              |      | <code>\FAGPL</code> . . . . . 1965, 1969, 1971 |
| <code>\EATLS</code> . . . . . 1815                  | 1696, 1698, 1707, 1709,                              |      | <code>\FAGSL</code> . . . . . 2099, 2103, 2105 |
| <code>\EBF</code> . . . . . 1377                    | 1737, 1739, 1752, 1754,                              |      | <code>\False</code> . . . . . 2307             |
| <code>\EBGPL</code> . . . . . 1994                  | 1767, 1769, 1786, 1788,                              |      | <code>\FBGPL</code> . . . . . 1999, 2003, 2005 |
| <code>\EBGSL</code> . . . . . 2128                  | 1801, 1803, 1816, 1818,                              |      | <code>\FBGSL</code> . . . . . 2133, 2137, 2139 |
| <code>\EBH</code> . . . . . 1208                    | 1893, 1895, 1901, 1903,                              |      | <code>\FCGPL</code> . . . . . 1931, 1935, 1937 |
| <code>\ECGPL</code> . . . . . 1926                  | 1910, 1912, 1918, 1920,                              |      | <code>\FCGSL</code> . . . . . 2065, 2069, 2071 |
| <code>\ECGSL</code> . . . . . 2060                  | 1927, 1929, 1935, 1937,                              |      | <code>\FDGPL</code> . . . . . 1948, 1952, 1954 |
| <code>\ECTL</code> . . . . . 1736                   | 1944, 1946, 1952, 1954,                              |      | <code>\FDGSL</code> . . . . . 2082, 2086, 2088 |
| <code>\ECTLP</code> . . . . . 1751                  | 1961, 1963, 1969, 1971,                              |      | <code>\FEGPL</code> . . . . . 1982, 1986, 1988 |
| <code>\ECTLS</code> . . . . . 1766                  | 1978, 1980, 1986, 1988,                              |      | <code>\FEGSL</code> . . . . . 2116, 2120, 2122 |
| <code>\EDGPL</code> . . . . . 1943                  | 1995, 1997, 2003, 2005,                              |      | <code>\Ff</code> . . . . . 1384                |
| <code>\EdgRel</code> . . . . . 1226                 | 2012, 2014, 2020, 2022,                              |      | <code>\ffsym</code> . . . . . 1386, 1387       |
| <code>\edgrel</code> . . . . . 1226, 1227           |                                                      |      |                                                |

|                                     |                                                                                                                                                                                                                                                                                                                                          |                                          |                                                                        |                                              |                                                                                                                                                           |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>\fi</code> .....              | 153,<br>155, 164, 220, 225, 231,<br>236, 251, 256, 271, 279,<br>280, 284, 286, 584, 808,<br>875, 1156, 1212, 1235,<br>1364, 2183, 2256, 2263,<br>2284, 2285, 2292, 2319                                                                                                                                                                  | <code>\grp&gt;false</code> .....         | 83, 85                                                                 | <b>K</b>                                     |                                                                                                                                                           |
| <code>\fig&gt;false</code> .....    | 110, 112                                                                                                                                                                                                                                                                                                                                 | <code>\grp&gt;true</code> .....          | 84                                                                     | <code>\kern</code> .....                     | 1045                                                                                                                                                      |
| <code>\fig&gt;true</code> .....     | 111                                                                                                                                                                                                                                                                                                                                      | <code>\GrpName</code> .....              | 1219                                                                   | <code>\KrpStr</code> .....                   | 1639                                                                                                                                                      |
| <code>\fix</code> .....             | 1047                                                                                                                                                                                                                                                                                                                                     | <code>\grpname</code> .....              | 1219, 1220                                                             | <code>\krpstr</code> .....                   | 1639, 1640                                                                                                                                                |
| <code>\flat</code> .....            | 2175                                                                                                                                                                                                                                                                                                                                     | <b>H</b>                                 |                                                                        | <b>L</b>                                     |                                                                                                                                                           |
| <code>\floor</code> .....           | 1119                                                                                                                                                                                                                                                                                                                                     | <code>\H</code> .....                    | 1718                                                                   | <code>\LAA11</code> .....                    | 1512                                                                                                                                                      |
| <code>\FNGSL</code> .....           | 2150, 2154, 2156                                                                                                                                                                                                                                                                                                                         | <code>\Hard</code> .....                 | 1183                                                                   | <code>\laallsym</code> .....                 | 1514, 1515                                                                                                                                                |
| <code>\fnttts&gt;false</code> ..... | 37                                                                                                                                                                                                                                                                                                                                       | <code>\HstSet</code> .....               | 1287, 1862                                                             | <code>\labFun</code> .....                   | 1648                                                                                                                                                      |
| <code>\fnttts&gt;true</code> .....  | 36                                                                                                                                                                                                                                                                                                                                       | <code>\hstset</code> .....               | 1288, 1289, 1290, 1292,<br>1863, 1864, 1865, 1867                      | <code>\labsym</code> .....                   | 1648, 1649                                                                                                                                                |
| <code>\FO</code> .....              | 1443                                                                                                                                                                                                                                                                                                                                     | <code>\hstsym</code> .....               | 1287, 1289, 1291, 1293,<br>1862, 1864, 1866, 1868                      | <code>\LAll</code> .....                     | 1400                                                                                                                                                      |
| <code>\FOGPL</code> .....           | 1914, 1918, 1920                                                                                                                                                                                                                                                                                                                         | <code>\hypersetup</code> .....           | 241                                                                    | <code>\lallsym</code> .....                  | 1402, 1403                                                                                                                                                |
| <code>\FOGSL</code> .....           | 2048, 2052, 2054                                                                                                                                                                                                                                                                                                                         | <code>\hypref&gt;false</code> .....      | 33                                                                     | <code>\Lambda</code> .....                   | 2249                                                                                                                                                      |
| <code>\FOL</code> .....             | 1435                                                                                                                                                                                                                                                                                                                                     | <code>\hypref&gt;true</code> .....       | 32                                                                     | <code>\lambda</code> .....                   | 1648                                                                                                                                                      |
| <code>\footnotesize</code> .....    | 1044                                                                                                                                                                                                                                                                                                                                     | <b>I</b>                                 |                                                                        | <code>\land</code> .....                     | 1392                                                                                                                                                      |
| <code>\forall</code> .....          | 1380,<br>1402, 1412, 1413, 1621,<br>1668, 1684, 1698, 1709,<br>1739, 1754, 1769, 1788,<br>1803, 1818, 1895, 1903,<br>1912, 1920, 1929, 1937,<br>1946, 1954, 1963, 1971,<br>1980, 1988, 1997, 2005,<br>2014, 2022, 2029, 2037,<br>2046, 2054, 2063, 2071,<br>2080, 2088, 2097, 2105,<br>2114, 2122, 2131, 2139,<br>2148, 2156, 2165, 2173 | <code>\ie</code> .....                   | 832                                                                    | <code>\Lang</code> .....                     | 2233                                                                                                                                                      |
| <code>\FPL</code> .....             | 1897, 1901, 1903                                                                                                                                                                                                                                                                                                                         | <code>\IF</code> .....                   | 1488                                                                   | <code>\langle</code> .....                   | 966, 967, 970, 971, 978,<br>979, 982, 983, 1631, 1821                                                                                                     |
| <code>\FPT</code> .....             | 1187                                                                                                                                                                                                                                                                                                                                     | <code>\if</code> .....                   | 153, 155, 164                                                          | <code>\LaTeX</code> .....                    | 743, 750                                                                                                                                                  |
| <code>\free</code> .....            | 1417                                                                                                                                                                                                                                                                                                                                     | <code>\if@twocolumn</code> .....         | 137, 275                                                               | <code>\lbrace</code> ..                      | 994, 996, 1002, 1004                                                                                                                                      |
| <code>\frm&gt;false</code> .....    | 104, 106                                                                                                                                                                                                                                                                                                                                 | <code>\ifalg@</code> .....               | 126, 2297                                                              | <code>\lceil</code> .....                    | 1128, 1130                                                                                                                                                |
| <code>\frm&gt;true</code> .....     | 105                                                                                                                                                                                                                                                                                                                                      | <code>\ifamsdef@</code> .....            | 16, 214                                                                | <code>\lcm</code> .....                      | 1143                                                                                                                                                      |
| <code>\From</code> .....            | 2309                                                                                                                                                                                                                                                                                                                                     | <code>\ifamsthm@</code> .....            | 20, 222                                                                | <code>\LCoi</code> .....                     | 1396                                                                                                                                                      |
| <code>\FSL</code> .....             | 2031, 2035, 2037                                                                                                                                                                                                                                                                                                                         | <code>\ifaut@</code> .....               | 98, 2188                                                               | <code>\lcoimp</code> .....                   | 891                                                                                                                                                       |
| <code>\fst</code> .....             | 1154                                                                                                                                                                                                                                                                                                                                     | <code>\ifaux@</code> .....               | 11, 212                                                                | <code>\lcoisym</code> .....                  | 1398, 1399                                                                                                                                                |
| <code>\funset</code> .....          | 1461, 1462                                                                                                                                                                                                                                                                                                                               | <code>\ifchgbar@</code> .....            | 44, 268                                                                | <code>\LCon</code> .....                     | 1392                                                                                                                                                      |
| <code>\FunSig</code> .....          | 1458                                                                                                                                                                                                                                                                                                                                     | <code>\ifcom@</code> .....               | 77, 1161                                                               | <code>\lconsym</code> .....                  | 1392, 1393                                                                                                                                                |
| <code>\funsig</code> .....          | 1458, 1459                                                                                                                                                                                                                                                                                                                               | <code>\ifcrv@</code> .....               | 40, 258                                                                | <code>\LDis</code> .....                     | 1392                                                                                                                                                      |
| <code>\FunStr</code> .....          | 1481                                                                                                                                                                                                                                                                                                                                     | <code>\ifcsdef</code> .....              | 137                                                                    | <code>\ldissym</code> .....                  | 1394, 1395                                                                                                                                                |
| <code>\funstr</code> .....          | 1481, 1482                                                                                                                                                                                                                                                                                                                               | <code>\ifdef</code> .....                | 291, 292, 293, 294                                                     | <code>\LEExs</code> .....                    | 1512                                                                                                                                                      |
| <code>\funsym</code> .....          | 1460, 1462                                                                                                                                                                                                                                                                                                                               | <code>\ifendmtls@</code> .....           | 28, 233                                                                | <code>\leexssym</code> .....                 | 1512, 1513                                                                                                                                                |
| <code>\FVarSet</code> .....         | 1552                                                                                                                                                                                                                                                                                                                                     | <code>\iff</code> .....                  | 866                                                                    | <code>\left</code> ...                       | 427, 451, 919, 942,<br>946, 950, 954, 958, 962,<br>966, 970, 974, 978, 982,<br>986, 994, 1002, 1010,<br>1016, 1110, 1116, 1122,<br>1128, 1151, 1637, 1823 |
| <code>\fvarset</code> .....         | 1553, 1554                                                                                                                                                                                                                                                                                                                               | <code>\iffig@</code> .....               | 110, 2268                                                              | <code>\Leftarrow</code> .....                | 899, 901                                                                                                                                                  |
| <code>\fvarsym</code> .....         | 1552, 1554                                                                                                                                                                                                                                                                                                                               | <code>\iffnttts@</code> .....            | 36, 253                                                                | <code>\Leftrightarrow</code> ...             | 903, 905                                                                                                                                                  |
| <code>\FXGPL</code> .....           | 2016, 2020, 2022                                                                                                                                                                                                                                                                                                                         | <code>\iffirm@</code> .....              | 104, 2261                                                              | <code>\leftrightharpoonrightarrow</code> ... | 892, 1398                                                                                                                                                 |
| <code>\FXGSL</code> .....           | 2167, 2171, 2173                                                                                                                                                                                                                                                                                                                         | <code>\ifgam@</code> .....               | 88, 1240                                                               | <code>\len</code> .....                      | 1148                                                                                                                                                      |
| <b>G</b>                            |                                                                                                                                                                                                                                                                                                                                          | <code>\ifgrp@</code> .....               | 83, 1217                                                               | <code>\let</code> .....                      | 2306                                                                                                                                                      |
| <code>\gam&gt;false</code> .....    | 56, 62, 88, 90                                                                                                                                                                                                                                                                                                                           | <code>\ifhypref@</code> .....            | 32, 238                                                                | <code>\let</code> .....                      | 1717, 1718, 1719                                                                                                                                          |
| <code>\gam&gt;true</code> .....     | 89                                                                                                                                                                                                                                                                                                                                       | <code>\iflinnum@</code> .....            | 48, 273                                                                | <code>\LEExs</code> .....                    | 1400                                                                                                                                                      |
| <code>\Game</code> .....            | 1279                                                                                                                                                                                                                                                                                                                                     | <code>\iflog@</code> .....               | 93, 1369                                                               | <code>\lexssym</code> .....                  | 1400, 1401                                                                                                                                                |
| <code>\GameName</code> .....        | 1279                                                                                                                                                                                                                                                                                                                                     | <code>\ifmth@</code> .....               | 71, 880                                                                | <code>\lfloor</code> .....                   | 1122, 1124                                                                                                                                                |
| <code>\gameName</code> .....        | 1279, 1280                                                                                                                                                                                                                                                                                                                               | <code>\ifmthgen@</code> .....            | 59, 589                                                                | <code>\lift</code> .....                     | 1315                                                                                                                                                      |
| <code>\gcd</code> .....             | 1143                                                                                                                                                                                                                                                                                                                                     | <code>\ifp</code> .....                  | 1047                                                                   | <code>\LImp</code> .....                     | 1396                                                                                                                                                      |
| <code>\GFG</code> .....             | 2202                                                                                                                                                                                                                                                                                                                                     | <code>\iftab@</code> .....               | 120, 2290                                                              | <code>\limp</code> .....                     | 889                                                                                                                                                       |
| <code>\GMC</code> .....             | 1655                                                                                                                                                                                                                                                                                                                                     | <code>\ifthmtls@</code> .....            | 24, 227                                                                | <code>\limpsym</code> .....                  | 1396, 1397                                                                                                                                                |
| <code>\GML</code> .....             | 1608                                                                                                                                                                                                                                                                                                                                     | <code>\iftxt@</code> .....               | 66, 813                                                                | <code>\linenumbers</code> .....              | 276, 278                                                                                                                                                  |
| <code>\GoTo</code> .....            | 2312                                                                                                                                                                                                                                                                                                                                     | <code>\iftxtgen@</code> .....            | 53, 534                                                                | <code>\linnum&gt;false</code> .....          | 48                                                                                                                                                        |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\ifwrpfig@</code> .....            | 115, 2281                                                              | <code>\linnum&gt;true</code> .....           | 49                                                                                                                                                        |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\iht</code> .....                  | 867                                                                    | <code>\llbracket</code> .....                | 919, 921                                                                                                                                                  |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\implied</code> .....              | 898                                                                    | <code>\llcorner</code> .....                 | 1044                                                                                                                                                      |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\implies</code> .....              | 894                                                                    | <code>\LNeg</code> .....                     | 1388                                                                                                                                                      |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\inf</code> .....                  | 1141                                                                   | <code>\lnegsym</code> .....                  | 1388, 1389                                                                                                                                                |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\infty</code> ...                  | 1066, 1070, 1072,<br>1074, 1078, 1080, 1082,<br>1086, 1088, 1090, 1094 | <code>\LNot</code> .....                     | 1388                                                                                                                                                      |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\int</code> .....                  | 1311                                                                   | <code>\lnotsym</code> .....                  | 1390, 1391                                                                                                                                                |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\interdisplaylinepenalty</code> .. | 219                                                                    | <code>\log&gt;false</code> .....             | 56, 62, 93, 95                                                                                                                                            |
|                                     |                                                                                                                                                                                                                                                                                                                                          | <code>\itr</code> .....                  | 176, 177, 178, 180, 181, 182                                           | <code>\log&gt;true</code> .....              | 94                                                                                                                                                        |
|                                     |                                                                                                                                                                                                                                                                                                                                          |                                          |                                                                        | <code>\LogSig</code> .....                   | 1382                                                                                                                                                      |
|                                     |                                                                                                                                                                                                                                                                                                                                          |                                          |                                                                        | <code>\logsig</code> .....                   | 1382, 1383                                                                                                                                                |

|                                |                                           |                                                             |                                                                 |                                              |                           |
|--------------------------------|-------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------|---------------------------|
| <code>\LogSpace</code> .....   | <a href="#">1195</a>                      | <a href="#">1118, 1122, 1124, 1128,</a>                     | <code>\newcommandx</code> ..                                    | <a href="#">1162, 1164,</a>                  |                           |
| <code>\LogStr</code> .....     | <a href="#">1426</a>                      | <a href="#">1130, 1147, 1151, 1153,</a>                     |                                                                 | <a href="#">1167, 1173, 1178, 1180</a>       |                           |
| <code>\logstr</code> .....     | <a href="#">1426, 1427</a>                | <a href="#">1206, 1207, 1208, 1209,</a>                     | <code>\newif</code> .....                                       | <a href="#">11,</a>                          |                           |
| <code>\LogTime</code> .....    | <a href="#">1194</a>                      | <a href="#">1210, 1211, 1629, 1631,</a>                     |                                                                 | <a href="#">16, 20, 24, 28, 32, 36,</a>      |                           |
| <code>\lor</code> .....        | <a href="#">1394</a>                      | <a href="#">1635, 1637, 1821, 1823</a>                      |                                                                 | <a href="#">40, 44, 48, 53, 59, 66,</a>      |                           |
| <code>\lowercase</code> .....  | <a href="#">671, 673</a>                  | <code>\mth@false</code> .....                               |                                                                 | <a href="#">71, 77, 83, 88, 93, 98,</a>      |                           |
| <code>\lst</code> .....        | <a href="#">1154</a>                      | <code>\mth@true</code> .....                                |                                                                 | <a href="#">104, 110, 115, 120, 126, 137</a> |                           |
| <code>\LTL</code> .....        | <a href="#">1689</a>                      | <code>\mtharg</code> .....                                  | <code>\newmth</code> .....                                      | <a href="#">412,</a>                         |                           |
| <code>\lVert</code> .....      | <a href="#">1116, 1118</a>                | <code>\mthcls</code> .....                                  |                                                                 | <a href="#">421, 423, 427, 429, 451, 453</a> |                           |
| <code>\lvert</code> .....      | <a href="#">1016, 1018,</a>               | <code>\mthelm</code> .....                                  | <code>\newmtharg</code> <a href="#">424, 433, 435, 439, 441</a> |                                              |                           |
|                                | <a href="#">1110, 1112, 1151, 1153</a>    | <code>\mthfam</code> .....                                  | <code>\newmthargsty</code> ..                                   | <a href="#">430, 478, 493</a>                |                           |
| <b>M</b>                       |                                           |                                                             |                                                                 |                                              |                           |
| <code>\Macro</code> .....      | <a href="#">2303</a>                      | <code>\mthfrm</code> .....                                  | <code>\newmthoarg</code> ....                                   | <a href="#">436, 445, 447</a>                |                           |
| <code>\mathaccent</code> ..... | <a href="#">934</a>                       | <code>\mthfun</code> .....                                  | <code>\newmthoargsty</code> .                                   | <a href="#">442, 480, 496</a>                |                           |
| <code>\mathbbo</code> .....    | <a href="#">291</a>                       | <code>\mthgen@false</code> .....                            | <code>\newmthopar</code> .....                                  | <a href="#">460, 469, 471</a>                |                           |
| <code>\mathbin</code> .....    | <a href="#">745</a>                       | <code>\mthgen@true</code> .....                             | <code>\newmthoparsty</code> .                                   | <a href="#">466, 484, 502</a>                |                           |
| <code>\mathcal</code> .....    | <a href="#">591</a>                       |                                                             | <code>\newmthpar</code> <a href="#">448, 457, 459, 463, 465</a> |                                              |                           |
| <code>\matheus</code> .....    | <a href="#">292, 617</a>                  | <code>\mthlbp</code> ...                                    | <code>\newmthparsty</code> ..                                   | <a href="#">454, 482, 499</a>                |                           |
| <code>\mathfrak</code> .....   | <a href="#">643</a>                       |                                                             | <code>\newmthsty</code> .....                                   | <a href="#">418, 476, 490</a>                |                           |
| <code>\mathit</code> .....     | <a href="#">675, 769, 796</a>             | <code>\mthlrel</code> .....                                 | <code>\newtxt</code> .....                                      | <a href="#">299,</a>                         |                           |
| <code>\mathnormal</code> ..... | <a href="#">714</a>                       |                                                             |                                                                 | <a href="#">308, 310, 314, 316, 338, 340</a> |                           |
| <code>\mathop</code> .....     | <a href="#">744</a>                       | <code>\mthluop</code> .....                                 | <code>\newtxtarg</code> <a href="#">311, 320, 322, 326, 328</a> |                                              |                           |
| <code>\mathpzc</code> .....    | <a href="#">293, 630</a>                  | <code>\mthmat</code> .....                                  | <code>\newtxtargsty</code> <a href="#">317, 365, 383, 384</a>   |                                              |                           |
| <code>\mathrel</code> .....    | <a href="#">751, 1044</a>                 | <code>\mthname</code> .....                                 | <code>\newtxtoarg</code> ....                                   | <a href="#">323, 332, 334</a>                |                           |
| <code>\mathring</code> .....   | <a href="#">926</a>                       | <code>\mthoarg</code> .....                                 | <code>\newtxtoargsty</code> <a href="#">329, 367, 388, 389</a>  |                                              |                           |
| <code>\mathrm</code> .....     | <a href="#">656</a>                       | <code>\mthopar</code> .....                                 | <code>\newtxtopar</code> ....                                   | <a href="#">347, 356, 358</a>                |                           |
| <code>\mathscr</code> .....    | <a href="#">294, 604</a>                  | <code>\mthpar</code> .....                                  | <code>\newtxtoparsty</code> <a href="#">353, 371, 398, 399</a>  |                                              |                           |
| <code>\mathsf</code> .....     | <a href="#">688, 756, 783</a>             | <code>\mthrel</code> .....                                  | <code>\newtxtpar</code> <a href="#">335, 344, 346, 350, 352</a> |                                              |                           |
| <code>\mathtt</code> .....     | <a href="#">701</a>                       | <code>\mthset</code> <a href="#">655, 1060, 1062, 1064,</a> | <code>\newtxtparsty</code> <a href="#">341, 369, 393, 394</a>   |                                              |                           |
| <code>\max</code> .....        | <a href="#">1137</a>                      |                                                             | <code>\newtxtsty</code> ..                                      | <a href="#">305, 363, 378, 379</a>           |                           |
| <code>\MaxSym</code> .....     | <a href="#">1355</a>                      | <code>\mthsig</code> .....                                  | <code>\NGSL</code> ...                                          | <a href="#">2142, 2146, 2148, 2151</a>       |                           |
| <code>\maxsym</code> .....     | <a href="#">1355, 1356</a>                | <code>\mthstnt</code> .....                                 | <code>\nlr</code> .....                                         | <a href="#">2316</a>                         |                           |
| <code>\MC</code> .....         | <a href="#">1655</a>                      | <code>\mthstr</code> .....                                  | <code>\nlset</code> .....                                       | <a href="#">2318</a>                         |                           |
| <code>\mdseries</code> .....   | <a href="#">373, 561, 573</a>             | <code>\mthsty</code> .....                                  | <code>\noexpand</code> .....                                    | <a href="#">178, 182</a>                     |                           |
| <code>\MFO</code> .....        | <a href="#">1442</a>                      |                                                             | <code>\norm</code> .....                                        | <a href="#">1107</a>                         |                           |
| <code>\MFOl</code> .....       | <a href="#">1440</a>                      | <code>\mthstycls</code> .....                               | <code>\normalfont</code> .                                      | <a href="#">304, 536, 561, 573</a>           |                           |
| <code>\middle</code> .....     | <a href="#">994</a>                       | <code>\mthstyelm</code> .....                               | <code>\not</code> ...                                           | <a href="#">897, 901, 905, 910, 914</a>      |                           |
| <code>\Mif</code> .....        | <a href="#">2315</a>                      | <code>\mthstyfam</code> .....                               | <code>\notcequiv</code> .....                                   | <a href="#">913</a>                          |                           |
| <code>\min</code> .....        | <a href="#">1137</a>                      | <code>\mthstyfrm</code> .....                               | <code>\notcmmodels</code> .....                                 | <a href="#">909</a>                          |                           |
| <code>\MinSym</code> .....     | <a href="#">1355</a>                      | <code>\mthstyfun</code> .....                               | <code>\notcoimplies</code> .....                                | <a href="#">904</a>                          |                           |
| <code>\minsym</code> .....     | <a href="#">1357, 1358</a>                | <code>\mthstyhbop</code> .....                              | <code>\notimplied</code> .....                                  | <a href="#">900</a>                          |                           |
| <code>\ML</code> .....         | <a href="#">1608</a>                      | <code>\mthstylrel</code> .....                              | <code>\notimplies</code> .....                                  | <a href="#">896</a>                          |                           |
| <code>\models</code> .....     | <a href="#">908, 910</a>                  | <code>\mthstyluop</code> .....                              | <code>\num</code> .....                                         | <a href="#">1096</a>                         |                           |
| <code>\movFun</code> .....     | <a href="#">1853</a>                      | <code>\mthstymat</code> .....                               | <code>\numcc</code> .....                                       | <a href="#">1098</a>                         |                           |
| <code>\MovRel</code> .....     | <a href="#">1277</a>                      | <code>\mthstyname</code> .....                              | <code>\numco</code> .....                                       | <a href="#">1100</a>                         |                           |
| <code>\movRel</code> .....     | <a href="#">1853</a>                      | <code>\mthstyrel</code> .....                               | <code>\numoc</code> .....                                       | <a href="#">1102</a>                         |                           |
| <code>\movrel</code> .....     | <a href="#">1277, 1278</a>                | <code>\mthstyset</code> .....                               | <code>\numoo</code> .....                                       | <a href="#">1104</a>                         |                           |
| <code>\movsym</code> .....     | <a href="#">1853, 1854, 1855</a>          | <code>\mthstysig</code> .....                               | <code>\nxt</code> .....                                         | <a href="#">2182</a>                         |                           |
| <code>\MPL</code> .....        | <a href="#">1595, 1600, 1604</a>          | <code>\mthstysnt</code> .....                               | <b>O</b>                                                        |                                              |                           |
| <code>\MSO</code> .....        | <a href="#">1537, 1544, 1550</a>          | <code>\mthstyst</code> .....                                | <code>\obsFun</code> .....                                      | <a href="#">1283</a>                         |                           |
| <code>\MSOL</code> .....       | <a href="#">1535, 1542, 1548</a>          | <code>\mthstysr</code> .....                                | <code>\ObsSet</code> .....                                      | <a href="#">1283</a>                         |                           |
| <code>\mth</code> .....        | <a href="#">475, 919, 921,</a>            | <code>\mthstysym</code> .....                               | <code>\obsset</code> .....                                      | <a href="#">1283, 1284</a>                   |                           |
|                                | <a href="#">924, 926, 928, 930, 934,</a>  | <code>\mthstyvec</code> .....                               | <code>\odd</code> .....                                         | <a href="#">1133</a>                         |                           |
|                                | <a href="#">936, 938, 939, 942, 943,</a>  | <code>\mthsubsup</code> .....                               | <code>\OddSym</code> .....                                      | <a href="#">1336</a>                         |                           |
|                                | <a href="#">946, 947, 950, 951, 954,</a>  | <code>\mthsym</code> .....                                  | <code>\oddsym</code> .....                                      | <a href="#">1338, 1339</a>                   |                           |
|                                | <a href="#">955, 958, 959, 962, 963,</a>  | <code>\mthvec</code> .....                                  | <code>\odot</code> .....                                        | <a href="#">1411</a>                         |                           |
|                                | <a href="#">966, 967, 970, 971, 974,</a>  | <code>\MTL</code> .....                                     | <code>\OGPL</code> ...                                          | <a href="#">1906, 1910, 1912, 1915</a>       |                           |
|                                | <a href="#">975, 978, 979, 982, 983,</a>  | <code>\mu</code> .....                                      | <code>\OGSL</code> ...                                          | <a href="#">2040, 2044, 2046, 2049</a>       |                           |
|                                | <a href="#">986, 987, 994, 996, 1002,</a> | <code>\Mutatismutandis</code> .....                         | <code>\Omega</code> .....                                       | <a href="#">1053</a>                         |                           |
|                                | <a href="#">1004, 1010, 1012, 1016,</a>   | <code>\mutatismutandis</code> .....                         | <code>\omega</code> .....                                       | <a href="#">1052</a>                         |                           |
|                                | <a href="#">1018, 1020, 1023, 1039,</a>   |                                                             | <code>\Omicron</code> .....                                     | <a href="#">1057</a>                         |                           |
|                                | <a href="#">1097, 1099, 1101, 1103,</a>   | <b>N</b>                                                    |                                                                 | <code>\omicron</code> .....                  | <a href="#">143, 1056</a> |
|                                | <a href="#">1105, 1110, 1112, 1116,</a>   | <code>\naif</code> .....                                    |                                                                 | <code>\oplus</code> .....                    | <a href="#">1355</a>      |
|                                |                                           | <code>\naive</code> .....                                   |                                                                 |                                              |                           |
|                                |                                           | <code>\neg</code> .....                                     |                                                                 |                                              |                           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \OppSym .. <a href="#">1260</a> , <a href="#">1273</a> , <a href="#">1274</a> ,<br><a href="#">1292</a> , <a href="#">1293</a> , <a href="#">1304</a> , <a href="#">1305</a> ,<br><a href="#">1841</a> , <a href="#">1842</a> , <a href="#">1867</a> , <a href="#">1868</a> ,<br><a href="#">1879</a> , <a href="#">1880</a> , <a href="#">1886</a> , <a href="#">1887</a>                                                            | \pthFun ..... <a href="#">1229</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \rrbracket ..... <a href="#">919</a> , <a href="#">921</a>                                                                                                                                                                                                            |
| \oppsym ..... <a href="#">1262</a> , <a href="#">1263</a>                                                                                                                                                                                                                                                                                                                                                                             | \PthSet ..... <a href="#">1229</a> , <a href="#">1650</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \rst ..... <a href="#">1033</a>                                                                                                                                                                                                                                       |
| \Opr ..... <a href="#">1623</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \pthset . <a href="#">1230</a> , <a href="#">1231</a> , <a href="#">1651</a> , <a href="#">1652</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \rVert ..... <a href="#">1116</a> , <a href="#">1118</a>                                                                                                                                                                                                              |
| \out ..... <a href="#">1311</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \pthsym . <a href="#">1229</a> , <a href="#">1231</a> , <a href="#">1650</a> , <a href="#">1652</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \rvert ..... <a href="#">1016</a> , <a href="#">1018</a> ,<br><a href="#">1110</a> , <a href="#">1112</a> , <a href="#">1151</a> , <a href="#">1153</a>                                                                                                               |
| \overline ..... <a href="#">924</a> , <a href="#">936</a>                                                                                                                                                                                                                                                                                                                                                                             | \PTime ..... <a href="#">1196</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       | \PTL ..... <a href="#">1689</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       | \pto ..... <a href="#">1041</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>S</b>                                                                                                                                                                                                                                                              |
| <b>P</b>                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Q</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \S ..... <a href="#">1719</a>                                                                                                                                                                                                                                         |
| \P ..... <a href="#">1717</a>                                                                                                                                                                                                                                                                                                                                                                                                         | \QAE ..... <a href="#">1412</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SATG ..... <a href="#">1242</a>                                                                                                                                                                                                                                      |
| \PackageWarning ..... <a href="#">131</a>                                                                                                                                                                                                                                                                                                                                                                                             | \QAFMC ..... <a href="#">1679</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \SaveDoubleAcute ..... <a href="#">1718</a>                                                                                                                                                                                                                           |
| \PDL ..... <a href="#">1723</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \QATL ..... <a href="#">1783</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \SavePilcrow ..... <a href="#">1717</a>                                                                                                                                                                                                                               |
| \Percontra ..... <a href="#">851</a>                                                                                                                                                                                                                                                                                                                                                                                                  | \QATLP ..... <a href="#">1798</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \SaveSectionSymbol ..... <a href="#">1719</a>                                                                                                                                                                                                                         |
| \percontra ..... <a href="#">834</a>                                                                                                                                                                                                                                                                                                                                                                                                  | \QATLS ..... <a href="#">1813</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \scshape ..... <a href="#">561</a> , <a href="#">573</a>                                                                                                                                                                                                              |
| \PH ..... <a href="#">1203</a>                                                                                                                                                                                                                                                                                                                                                                                                        | \QBF ..... <a href="#">1371</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \seqofcmd ..... <a href="#">179</a> , <a href="#">192</a> , <a href="#">196</a>                                                                                                                                                                                       |
| \Pi ..... <a href="#">1210</a> , <a href="#">1211</a> , <a href="#">1514</a>                                                                                                                                                                                                                                                                                                                                                          | \QCTL ..... <a href="#">1734</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \seqofgrklet ..... <a href="#">199</a> , <a href="#">523</a>                                                                                                                                                                                                          |
| \pi ..... <a href="#">1229</a> , <a href="#">1295</a> , <a href="#">1650</a> , <a href="#">1870</a>                                                                                                                                                                                                                                                                                                                                   | \QCTLP ..... <a href="#">1749</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \seqofgrklow .....<br><a href="#">191</a> , <a href="#">200</a> , <a href="#">203</a> , <a href="#">519</a> , <a href="#">631</a> , <a href="#">644</a>                                                                                                               |
| \PL ..... <a href="#">1560</a> , <a href="#">1889</a>                                                                                                                                                                                                                                                                                                                                                                                 | \QCTLS ..... <a href="#">1764</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \seqofgrkupp <a href="#">195</a> , <a href="#">200</a> , <a href="#">205</a> , <a href="#">521</a>                                                                                                                                                                    |
| \playFun ..... <a href="#">1295</a>                                                                                                                                                                                                                                                                                                                                                                                                   | \QEA ..... <a href="#">1412</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \seqoflatlet <a href="#">188</a> , <a href="#">517</a> , <a href="#">631</a> , <a href="#">644</a>                                                                                                                                                                    |
| \PlaySet ..... <a href="#">1295</a> , <a href="#">1870</a>                                                                                                                                                                                                                                                                                                                                                                            | \QLTL ..... <a href="#">1704</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \seqoflatlow <a href="#">184</a> , <a href="#">189</a> , <a href="#">203</a> , <a href="#">513</a>                                                                                                                                                                    |
| \playset <a href="#">1296</a> , <a href="#">1297</a> , <a href="#">1871</a> , <a href="#">1872</a>                                                                                                                                                                                                                                                                                                                                    | \QMC ..... <a href="#">1663</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \seqoflatupp ..... <a href="#">186</a> ,<br><a href="#">189</a> , <a href="#">205</a> , <a href="#">515</a> , <a href="#">592</a> , <a href="#">605</a> , <a href="#">618</a>                                                                                         |
| \playsym <a href="#">1295</a> , <a href="#">1297</a> , <a href="#">1870</a> , <a href="#">1872</a>                                                                                                                                                                                                                                                                                                                                    | \QML ..... <a href="#">1616</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \seqoflet .....<br><a href="#">206</a> , <a href="#">529</a> , <a href="#">657</a> , <a href="#">676</a> , <a href="#">689</a> ,<br><a href="#">702</a> , <a href="#">715</a> , <a href="#">757</a> , <a href="#">770</a> , <a href="#">784</a> , <a href="#">797</a> |
| \PlnSet ..... <a href="#">1874</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \Qnt ..... <a href="#">1409</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \seqoflow ..... <a href="#">202</a> , <a href="#">207</a> , <a href="#">525</a>                                                                                                                                                                                       |
| \plnset . <a href="#">1875</a> , <a href="#">1876</a> , <a href="#">1877</a> , <a href="#">1879</a>                                                                                                                                                                                                                                                                                                                                   | \QntSet ..... <a href="#">1414</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \seqoftag ..... <a href="#">175</a> , <a href="#">185</a> , <a href="#">187</a>                                                                                                                                                                                       |
| \plnsym . <a href="#">1874</a> , <a href="#">1876</a> , <a href="#">1878</a> , <a href="#">1880</a>                                                                                                                                                                                                                                                                                                                                   | \qntset ..... <a href="#">1415</a> , <a href="#">1416</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \seqofupp ..... <a href="#">204</a> , <a href="#">207</a> , <a href="#">527</a>                                                                                                                                                                                       |
| \PlrFun ..... <a href="#">1275</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \qntsyt ..... <a href="#">1414</a> , <a href="#">1416</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \sequence ..... <a href="#">940</a>                                                                                                                                                                                                                                   |
| \plrfun ..... <a href="#">1275</a> , <a href="#">1276</a>                                                                                                                                                                                                                                                                                                                                                                             | \QPSpace ..... <a href="#">1199</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \sequencel ..... <a href="#">944</a>                                                                                                                                                                                                                                  |
| \PlrSym .. <a href="#">1260</a> , <a href="#">1271</a> , <a href="#">1272</a> ,<br><a href="#">1290</a> , <a href="#">1291</a> , <a href="#">1302</a> , <a href="#">1303</a> ,<br><a href="#">1839</a> , <a href="#">1840</a> , <a href="#">1865</a> , <a href="#">1866</a> ,<br><a href="#">1877</a> , <a href="#">1878</a> , <a href="#">1884</a> , <a href="#">1885</a>                                                            | \QPTL ..... <a href="#">1693</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \sequencer ..... <a href="#">948</a>                                                                                                                                                                                                                                  |
| \plrsym ..... <a href="#">1260</a> , <a href="#">1261</a>                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \sequencex ..... <a href="#">952</a>                                                                                                                                                                                                                                  |
| \pm ..... <a href="#">1070</a> , <a href="#">1078</a> , <a href="#">1086</a>                                                                                                                                                                                                                                                                                                                                                          | <b>R</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \sequencexl ..... <a href="#">956</a>                                                                                                                                                                                                                                 |
| \pmapsto ..... <a href="#">1041</a>                                                                                                                                                                                                                                                                                                                                                                                                   | \raisebox ..... <a href="#">1044</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | \sequencexr ..... <a href="#">960</a>                                                                                                                                                                                                                                 |
| \PosSet ..... <a href="#">1266</a> , <a href="#">1834</a>                                                                                                                                                                                                                                                                                                                                                                             | \rangle .....<br><a href="#">966</a> , <a href="#">967</a> , <a href="#">974</a> , <a href="#">975</a> , <a href="#">978</a> ,<br><a href="#">979</a> , <a href="#">986</a> , <a href="#">987</a> , <a href="#">1631</a> , <a href="#">1821</a>                                                                                                                                                                                                                                                                                                                                                                              | \set ..... <a href="#">989</a>                                                                                                                                                                                                                                        |
| \posset .....<br><a href="#">1267</a> , <a href="#">1268</a> , <a href="#">1271</a> , <a href="#">1273</a> ,<br><a href="#">1835</a> , <a href="#">1836</a> , <a href="#">1839</a> , <a href="#">1841</a>                                                                                                                                                                                                                             | \rbrace .. <a href="#">994</a> , <a href="#">996</a> , <a href="#">1010</a> , <a href="#">1012</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \SetB ..... <a href="#">1059</a>                                                                                                                                                                                                                                      |
| \possym .....<br><a href="#">1266</a> , <a href="#">1268</a> , <a href="#">1269</a> , <a href="#">1270</a> ,<br><a href="#">1272</a> , <a href="#">1274</a> , <a href="#">1834</a> , <a href="#">1836</a> ,<br><a href="#">1837</a> , <a href="#">1838</a> , <a href="#">1840</a> , <a href="#">1842</a>                                                                                                                              | \rceil ..... <a href="#">1128</a> , <a href="#">1130</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \SetC ..... <a href="#">1091</a>                                                                                                                                                                                                                                      |
| \pow ..... <a href="#">1019</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \rch ..... <a href="#">1313</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetCI ..... <a href="#">1093</a>                                                                                                                                                                                                                                     |
| \pre ..... <a href="#">1233</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \relax ..... <a href="#">135</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \seteq ..... <a href="#">882</a>                                                                                                                                                                                                                                      |
| \prfFun ..... <a href="#">1306</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \relset ..... <a href="#">1474</a> , <a href="#">1475</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \SetF ..... <a href="#">1061</a>                                                                                                                                                                                                                                      |
| \PrfSet ..... <a href="#">1306</a> , <a href="#">1859</a>                                                                                                                                                                                                                                                                                                                                                                             | \RelSig ..... <a href="#">1471</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \SetInd ..... <a href="#">2300</a>                                                                                                                                                                                                                                    |
| \prfset . <a href="#">1307</a> , <a href="#">1308</a> , <a href="#">1860</a> , <a href="#">1861</a>                                                                                                                                                                                                                                                                                                                                   | \relsig ..... <a href="#">1471</a> , <a href="#">1472</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \SetKw ..... <a href="#">2302</a> ,<br><a href="#">2307</a> , <a href="#">2308</a> , <a href="#">2309</a> , <a href="#">2310</a> ,<br><a href="#">2311</a> , <a href="#">2312</a> , <a href="#">2313</a> , <a href="#">2314</a>                                       |
| \prfsym . <a href="#">1306</a> , <a href="#">1308</a> , <a href="#">1859</a> , <a href="#">1861</a>                                                                                                                                                                                                                                                                                                                                   | \RelStr ..... <a href="#">1485</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \SetKwFor <a href="#">2303</a> , <a href="#">2304</a> , <a href="#">2305</a> , <a href="#">2306</a>                                                                                                                                                                   |
| \PrimaFacie ..... <a href="#">852</a>                                                                                                                                                                                                                                                                                                                                                                                                 | \relstr ..... <a href="#">1485</a> , <a href="#">1486</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \SetKwIF ..... <a href="#">2315</a>                                                                                                                                                                                                                                   |
| \primafacie ..... <a href="#">835</a>                                                                                                                                                                                                                                                                                                                                                                                                 | \relsym ..... <a href="#">1473</a> , <a href="#">1475</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \setl ..... <a href="#">997</a>                                                                                                                                                                                                                                       |
| \prj ..... <a href="#">1031</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \RequirePackage . <a href="#">3</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> ,<br><a href="#">216</a> , <a href="#">217</a> , <a href="#">218</a> , <a href="#">224</a> , <a href="#">229</a> ,<br><a href="#">230</a> , <a href="#">235</a> , <a href="#">240</a> , <a href="#">255</a> , <a href="#">270</a> ,<br><a href="#">276</a> , <a href="#">278</a> , <a href="#">2269</a> , <a href="#">2283</a> , <a href="#">2298</a>                                                                                                                                                                        | \setlength ..... <a href="#">2301</a>                                                                                                                                                                                                                                 |
| \ProcessOptions ..... <a href="#">135</a>                                                                                                                                                                                                                                                                                                                                                                                             | \resp ..... <a href="#">869</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \setlx ..... <a href="#">999</a>                                                                                                                                                                                                                                      |
| \providecommand .... <a href="#">1650</a> ,<br><a href="#">1651</a> , <a href="#">1834</a> , <a href="#">1835</a> , <a href="#">1859</a> ,<br><a href="#">1860</a> , <a href="#">1862</a> , <a href="#">1863</a> , <a href="#">1870</a> ,<br><a href="#">1871</a> , <a href="#">1874</a> , <a href="#">1875</a> , <a href="#">1881</a> ,<br><a href="#">1882</a> , <a href="#">2219</a> , <a href="#">2220</a> , <a href="#">2226</a> | \rfloor ..... <a href="#">1122</a> , <a href="#">1124</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \SetN ..... <a href="#">1063</a>                                                                                                                                                                                                                                      |
| \prtFun ..... <a href="#">1340</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \rho ..... <a href="#">1874</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetNI ..... <a href="#">1065</a>                                                                                                                                                                                                                                     |
| \PrtSet ..... <a href="#">1340</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \right .. <a href="#">427</a> , <a href="#">451</a> , <a href="#">919</a> , <a href="#">942</a> ,<br><a href="#">946</a> , <a href="#">950</a> , <a href="#">954</a> , <a href="#">958</a> , <a href="#">962</a> ,<br><a href="#">966</a> , <a href="#">970</a> , <a href="#">974</a> , <a href="#">978</a> , <a href="#">982</a> ,<br><a href="#">986</a> , <a href="#">994</a> , <a href="#">1002</a> , <a href="#">1010</a> ,<br><a href="#">1016</a> , <a href="#">1110</a> , <a href="#">1116</a> , <a href="#">1122</a> ,<br><a href="#">1128</a> , <a href="#">1151</a> , <a href="#">1637</a> , <a href="#">1823</a> | \SetQ ..... <a href="#">1075</a>                                                                                                                                                                                                                                      |
| \prtset ..... <a href="#">1341</a> , <a href="#">1342</a>                                                                                                                                                                                                                                                                                                                                                                             | \Rightarrow ..... <a href="#">895</a> , <a href="#">897</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \SetQI ..... <a href="#">1077</a>                                                                                                                                                                                                                                     |
| \prtsym ..... <a href="#">1340</a> , <a href="#">1342</a>                                                                                                                                                                                                                                                                                                                                                                             | \rightarrow ..... <a href="#">890</a> , <a href="#">1396</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | \SetQNI ..... <a href="#">1081</a>                                                                                                                                                                                                                                    |
| \psn ..... <a href="#">2180</a>                                                                                                                                                                                                                                                                                                                                                                                                       | \rightharpoonup .. <a href="#">1042</a> , <a href="#">1045</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | \SetQPI ..... <a href="#">1079</a>                                                                                                                                                                                                                                    |
| \PSpace ..... <a href="#">1197</a>                                                                                                                                                                                                                                                                                                                                                                                                    | \rmfamily ..... <a href="#">373</a> , <a href="#">573</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | \SetR ..... <a href="#">1083</a>                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       | \Role ..... <a href="#">862</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \setr ..... <a href="#">1005</a>                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       | \role ..... <a href="#">860</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetRI ..... <a href="#">1085</a>                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetRNI ..... <a href="#">1089</a>                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetRPI ..... <a href="#">1087</a>                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \setrx ..... <a href="#">1007</a>                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \setx ..... <a href="#">991</a>                                                                                                                                                                                                                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetZ ..... <a href="#">1067</a>                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | \SetZI ..... <a href="#">1069</a>                                                                                                                                                                                                                                     |

|                       |                                                |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \SetZNI               | 1073                                           | \top          | 1384                                                                                                                                                                                                                                                                                                                                                                              | \UATLP          | 1802                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SetZPI               | 1071                                           | \TreeSet      | 2252                                                                                                                                                                                                                                                                                                                                                                              | \UATLS          | 1817                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sffamily             | 561                                            | \treeset      | 2253, 2254                                                                                                                                                                                                                                                                                                                                                                        | \UBF            | 1379                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \Sigma                | 1208, 1209, 1512, 2217                         | \treesym      | 2252, 2254                                                                                                                                                                                                                                                                                                                                                                        | \UBGPL          | 1996                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sigma                | 1299, 1881, 2216                               | \triangleq    | 885                                                                                                                                                                                                                                                                                                                                                                               | \UBGSL          | 2130                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \Signature            | 2302                                           | \trn          | 929                                                                                                                                                                                                                                                                                                                                                                               | \UBH            | 1210                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sim                  | 1390                                           | \trnFun       | 1856, 2226                                                                                                                                                                                                                                                                                                                                                                        | \UCGPL          | 1928                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \skm                  | 1477                                           | \TrnRel       | 1645                                                                                                                                                                                                                                                                                                                                                                              | \UCGSL          | 2062                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SL                   | 2023                                           | \trnRel       | 1856, 2226                                                                                                                                                                                                                                                                                                                                                                        | \UCTL           | 1738                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SO                   | 1526, 1532, 1538                               | \trnsym       | 1856, 1857, 1858, 2226, 2227, 2228                                                                                                                                                                                                                                                                                                                                                | \UCTLP          | 1753                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SOL                  | 1518                                           | \True         | 2307                                                                                                                                                                                                                                                                                                                                                                              | \UCTLS          | 1768                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sol                  | 1316                                           | \Tt           | 1384                                                                                                                                                                                                                                                                                                                                                                              | \UDGPL          | 1945                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \Space                | 1193                                           | \ttsym        | 1384, 1385                                                                                                                                                                                                                                                                                                                                                                        | \UDGSL          | 2079                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \stackrel{\sim}{\sim} | 884                                            | \tuple        | 964                                                                                                                                                                                                                                                                                                                                                                               | \UEGPL          | 1979                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \StrSet               | 1299, 1881                                     | \tuplel       | 968                                                                                                                                                                                                                                                                                                                                                                               | \UEGSL          | 2113                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \strset               | 1300, 1301, 1302, 1304, 1882, 1883, 1884, 1886 | \tupler       | 972                                                                                                                                                                                                                                                                                                                                                                               | \UFAGPL         | 1970                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \strsym               | 1299, 1301, 1303, 1305, 1881, 1883, 1885, 1887 | \tuplex       | 976                                                                                                                                                                                                                                                                                                                                                                               | \UFAGSL         | 2104                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SttSet               | 1843, 2219                                     | \tuplexl      | 980                                                                                                                                                                                                                                                                                                                                                                               | \UFBGPL         | 2004                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sttset               | 1844, 1845, 1846, 1848, 2220, 2221, 2222, 2224 | \tuplexr      | 984                                                                                                                                                                                                                                                                                                                                                                               | \UFBGSL         | 2138                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sttsym               | 1843, 1845, 1847, 1849, 2219, 2221, 2223, 2225 | \txt          | 362                                                                                                                                                                                                                                                                                                                                                                               | \UFCGPL         | 1936                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \stx                  | 868                                            | \txt@false    | 56, 66, 68                                                                                                                                                                                                                                                                                                                                                                        | \UFCGSL         | 2070                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sub                  | 1408                                           | \txt@true     | 67                                                                                                                                                                                                                                                                                                                                                                                | \UFDGPL         | 1953                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \suc                  | 1233                                           | \txtabr       | 547                                                                                                                                                                                                                                                                                                                                                                               | \UFDGSL         | 2087                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \sup                  | 1141                                           | \txtarg       | 364                                                                                                                                                                                                                                                                                                                                                                               | \UFEGPL         | 1987                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SVarSet              | 1555                                           | \txtcom       | 572                                                                                                                                                                                                                                                                                                                                                                               | \UFEGSL         | 2121                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \svarset              | 1556, 1557                                     | \txtdef       | 535                                                                                                                                                                                                                                                                                                                                                                               | \UFNGSL         | 2155                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \svarsym              | 1555, 1557                                     | \txtgen@false | 53, 56                                                                                                                                                                                                                                                                                                                                                                            | \UFOGPL         | 1919                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \Sym                  | 1409                                           | \txtgen@true  | 54, 67, 78, 84, 89, 94, 99                                                                                                                                                                                                                                                                                                                                                        | \UFOGSL         | 2053                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \SymSet               | 2216                                           | \txtname      | 560, 1376, 1441, 1443, 1524, 1526, 1530, 1532, 1536, 1538, 1542, 1544, 1548, 1550, 1565, 1569, 1573, 1577, 1581, 1588, 1592, 1596, 1600, 1604, 1613, 1617, 1660, 1664, 1672, 1676, 1680, 1694, 1705, 1731, 1735, 1746, 1750, 1761, 1765, 1780, 1784, 1795, 1799, 1810, 1814, 1898, 1915, 1932, 1949, 1966, 1983, 2000, 2017, 2032, 2049, 2066, 2083, 2100, 2117, 2134, 2151, 2168 | \UFGSL          | 2147                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \symset               | 2217, 2218                                     | \txttoarg     | 366                                                                                                                                                                                                                                                                                                                                                                               | \UOGPL          | 1911                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \symsym               | 2216, 2218                                     | \txttoargcom  | 1163, 1179                                                                                                                                                                                                                                                                                                                                                                        | \UOGSL          | 2045                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>T</b>              |                                                |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \tab@false            | 120, 122                                       | \txtopar      | 370                                                                                                                                                                                                                                                                                                                                                                               | \upharpoonright | 1034                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \tab@true             | 121                                            | \txtoparcom   | 1181                                                                                                                                                                                                                                                                                                                                                                              | \UPL            | 1894                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \tau                  | 1853                                           | \txtpar       | 368                                                                                                                                                                                                                                                                                                                                                                               | \upshape        | 373                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| \TAutSet              | 2246                                           | \txtsty       | 363, 365, 367, 369, 371, 372                                                                                                                                                                                                                                                                                                                                                      | \UPTL           | 1697                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \tautset              | 2246, 2247                                     | \txtstyabr    | 548                                                                                                                                                                                                                                                                                                                                                                               | \usetikzlibrary | 2270                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \terset               | 1468, 1469                                     | \txtstycom    | 573                                                                                                                                                                                                                                                                                                                                                                               | \USL            | 2028                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| \TerSig               | 1465                                           | \txtstydef    | 536                                                                                                                                                                                                                                                                                                                                                                               | \usrmth         | 506, 513, 515, 517, 519, 521, 523, 525, 527, 529, 594, 596, 598, 600, 602, 607, 609, 611, 613, 615, 620, 622, 624, 626, 628, 633, 635, 637, 639, 641, 646, 648, 650, 652, 654, 659, 661, 663, 665, 667, 678, 680, 682, 684, 686, 691, 693, 695, 697, 699, 704, 706, 708, 710, 712, 717, 719, 721, 723, 725, 747, 749, 753, 759, 761, 763, 765, 767, 772, 774, 776, 778, 780, 786, 788, 790, 792, 794, 799, 801, 803, 805, 807, 1025, 1026, 1027, 1028, 1029, |
| \tersig               | 1465, 1466                                     | \txtstyname   | 561                                                                                                                                                                                                                                                                                                                                                                               |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \TerStr               | 1483                                           | \txtsubsup    | 302, 304, 359                                                                                                                                                                                                                                                                                                                                                                     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \terstr               | 1483, 1484                                     | <b>U</b>      |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \tersym               | 1467, 1469                                     | \UAFMC        | 1683                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \text                 | 302, 360, 884, 2178                            | \UAGPL        | 1962                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \textstyle            | 744, 745                                       | \UAGSL        | 2096                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \textup               | 884                                            | \UATL         | 1787                                                                                                                                                                                                                                                                                                                                                                              |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \thestring            | 670, 671, 672, 673                             |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \Theta                | 1055                                           |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \theta                | 1054                                           |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \thmtls@false         | 25                                             |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \thmtls@true          | 24                                             |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \tikzstyle            | 2271, 2273, 2275, 2277, 2279                   |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \Time                 | 1192                                           |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| \TL                   | 1560                                           |               |                                                                                                                                                                                                                                                                                                                                                                                   |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| 1047, 1048, 1049, 1050,<br>1052, 1053, 1054, 1055,<br>1056, 1057, 1132, 1133,<br>1134, 1135, 1136, 1137,<br>1138, 1139, 1140, 1141,<br>1142, 1143, 1144, 1154,<br>1155, 1232, 1233, 1234,<br>1294, 1298, 1309, 1310,<br>1311, 1312, 1313, 1314,<br>1315, 1316, 1385, 1387,<br>1389, 1391, 1393, 1395,<br>1397, 1399, 1401, 1403,<br>1407, 1408, 1409, 1410,<br>1411, 1412, 1413, 1417,<br>1418, 1419, 1420, 1450,<br>1451, 1457, 1463, 1464,<br>1470, 1476, 1477, 1513,<br>1515, 1623, 1624, 1625,<br>1653, 1711, 1712, 1713,<br>1714, 1715, 1716, 1717,<br>1718, 1719, 1720, 1771,<br>1772, 1869, 1873, 2179,<br>2180, 2182, 2233, 2255 | 571, 575, 577, 579, 581, 583                                                                                                                                       | \wghFun ..... 1359               |
| \usrmthgrklet ..... 522                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \UXGPL ..... 2013                                                                                                                                                  | \WghSet ..... 1359               |
| \usrmthgrklow ..... 518                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \UXGSL ..... 2164                                                                                                                                                  | \wghset ..... 1360, 1361         |
| \usrmthgrkupp ..... 520                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                    | \wghsym ..... 1359, 1361         |
| \usrmthlatlet ..... 516                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | V                                                                                                                                                                  | \WH ..... 1204                   |
| \usrmthlatlow ..... 512                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | \ValSet ..... 1428                                                                                                                                                 | \widehat ..... 928               |
| \usrmthlatupp .. 514, 1220,<br>1265, 1280, 1383, 1427,<br>1446, 1453, 1459, 1466,<br>1472, 1480, 1482, 1484,<br>1486, 1640, 1827, 2211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \valset ..... 1429, 1430                                                                                                                                           | \widetilde ..... 930             |
| \usrmthlet ..... 528, 670, 672                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \valsym ..... 1428, 1430                                                                                                                                           | \WinSet ..... 1281               |
| \usrmthlow ..... 524                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \varcmd ..... 166,<br>938, 939, 942, 943, 946,<br>947, 950, 951, 954, 955,<br>958, 959, 962, 963, 966,<br>967, 970, 971, 974, 975,<br>978, 979, 982, 983, 986, 987 | \winset ..... 1281, 1282         |
| \usrmthupp ..... 526                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | \varepsilon ..... 1147                                                                                                                                             | \Wlogx ..... 874                 |
| \usrtxt ..... 403, 538, 540, 542, 544,<br>546, 550, 552, 554, 556,<br>558, 563, 565, 567, 569,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | \varnothing ..... 1023, 1039                                                                                                                                       | \Wlogx ..... 871                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \varpi ..... 1287, 1862                                                                                                                                            | \WMPL ..... 1599                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \varset ..... 1448, 1449                                                                                                                                           | \WMSO ..... 1543                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \VarSig ..... 1445                                                                                                                                                 | \WMSOL ..... 1541                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \varsig ..... 1445, 1446                                                                                                                                           | \WMTL ..... 1576                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \varsym ..... 1447, 1449                                                                                                                                           | \wot ..... 2255                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \vec ..... 931                                                                                                                                                     | \wp ..... 1414                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \VerSet ..... 1221                                                                                                                                                 | \WPL ..... 1587                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \verset ..... 1222, 1223                                                                                                                                           | \WrdSet ..... 2230               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \versym . 1221, 1223, 1224, 1225                                                                                                                                   | \wordset ..... 2231, 2232        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \vert ..... 990, 998                                                                                                                                               | \wrdsym ..... 2230, 2232         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \Viceversa ..... 853                                                                                                                                               | \WrlSet ..... 1641               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \viceversa ..... 836                                                                                                                                               | \wrlset ..... 1642, 1643         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \viz ..... 838                                                                                                                                                     | \wrlsym ..... 1641, 1643, 1644   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \vs ..... 837                                                                                                                                                      | \wrpfig@false ..... 116          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    | \wrpfig@true ..... 115           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | W                                                                                                                                                                  | \wrt ..... 870                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WATL ..... 1779                                                                                                                                                   | \WSO ..... 1525                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WATLP ..... 1794                                                                                                                                                  | \WSOL ..... 1523                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WATLS ..... 1809                                                                                                                                                  | \WTL ..... 1564                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WAutSet ..... 2214                                                                                                                                                |                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \wautset ..... 2214, 2215                                                                                                                                          | X                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WCTL ..... 1730                                                                                                                                                   | \X ..... 1711                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WCTLP ..... 1745                                                                                                                                                  | \XGPL ... 2008, 2012, 2014, 2017 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \WCTLS ..... 1760                                                                                                                                                  | \XGSL ... 2159, 2163, 2165, 2168 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    | \xi ..... 1306, 1428, 1859       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    | \xspace ..... 302, 304           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    | Y                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                    | \Y ..... 1716                    |