

fmocdmac — FM's OCD L^AT_EX Macro*

Fabio Mogavero
fm@fabiomogavero.com

Released 2023/01/23

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
35 %% Font tools
36 \newif\iffnttls@ \fnttls@true
```

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

```

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\text@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\math@false\gam@false\log@false\aut@false}
63
64
65 %% Elementary macros for text
66 \newif\iftext@ \text@false
67 \DeclareOption{text}{\text@true\txtgen@true}
68 \DeclareOption{notext}{\text@false}
69
70 %% Elementary macros for math
71 \newif\ifmath@ \math@false
72 \DeclareOption{math}{\math@true\mthgen@true}
73 \DeclareOption{nomath}{\math@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 games
83 \newif\ifgam@ \gam@false
84 \DeclareOption{gam}{\gam@true\txtgen@true\mthgen@true}
85 \DeclareOption{nogam}{\gam@false}
86
87 %% Macros for logics
88 \newif\iflog@ \log@false
89 \DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
90 \DeclareOption{nolog}{\log@false}
91
92 %% Macros for automata
93 \newif\ifaut@ \aut@false
94 \DeclareOption{aut}{\aut@true\txtgen@true\mthgen@true}
95 \DeclareOption{noaut}{\aut@false}
96
97
98 %% Format-related tricks
99 \newif\iffirm@ \firm@false

```

```

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

```

Option-processing code:

```

125
126 \DeclareOption*{\PackageWarning{fmodcmac}{Unknown~'\CurrentOption'}}%
127
128 \ExecuteOptions{aux,txtgen,mthgen,text,math,com,gam,log,aut}%
129
130 \ProcessOptions\relax%
131
132 \ifcsdef{if@twocolumn}{\newif\if@twocolumn}
133
134 %*****
135 %** Auxiliary Tricks *****
136 %*****
137 \ifaux@
138
139 \ifamsdef@
140   % AMS Packages
141   \RequirePackage{amsmath}
142   \RequirePackage{amssymb}
143   \RequirePackage{stmaryrd}
144   \interdisplaylinepenalty=2500
145 \fi
146
147 \ifamsthm@
148   % AMS Theorem Tools
149   \RequirePackage{amsthm}
150 \fi
151
152 \ifthmtls@
153   % Extended Theorem Tools
154   \RequirePackage{thmtools, thm-restate}
155 \fi
156
157 \ifenmtls@
158   % Enumeration Tools
159   \RequirePackage{paralist}
160 \fi
161

```

```

162 \ifhyref@
163   % Hyper References
164   \RequirePackage{hyperref}
165   \hypersetup {
166     pdfsubject      = {},
167     pdfkeywords     = {},
168     pdfproducer     = {},
169     pdfcreator      = {},
170     pdfpagemode     = {UseNone},
171     pdfstartview    = {FitH},
172     urlcolor        = {blue},
173     colorlinks
174   }
175 \fi
176
177 \iffnttts@
178   % Font Tools
179   \RequirePackage[final]{microtype}
180 \fi
181
182 \ifcrv@
183   % Camera-Ready Version
184
185   %%...
186
187 \else
188   % Draft Version
189
190   %%...
191
192   \ifchgbar@
193     % Change Bars
194     \RequirePackage{changebar}
195   \fi
196
197   \iflinnum@
198     % Line Numbers
199     \if@twocolumn
200       \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
201     \else
202       \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
203     \fi
204   \fi
205
206   %%...
207
208 \fi
209
210 \fi
211 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
212 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
213 %** Auxiliary Font Declarations %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
214 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

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

```
215 \ifdef{\mathbbo}{-}{\DeclareMathAlphabet{\mathbbo}{U}{bbold}{m}{n}}
```

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

```
216 \ifdef{\matheus}{-}{\DeclareMathAlphabet{\matheus}{U}{eus}{m}{n}}
```

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

```
217 \ifdef{\mathpzc}{-}{\DeclareMathAlphabet{\mathpzc}{T1}{pzc}{m}{it}}
```

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

```

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

219 %*****%
220 %*****%
221 %** Auxiliary Alphabet Letters *****%
222 %*****%

```

`\omicron` **Auxiliary Greek lowercase letter:** ... to do!

```

223 \csdef{omicron}{o}

```

`\Alpha`, ... **Auxiliary Greek uppercase letters:** ... to do!

```

224 \csdef{Alpha}{A} \csdef{Beta}{B} \csdef{Epsilon}{E} \csdef{varEpsilon}{E}
225 \csdef{Zeta}{Z} \csdef{Eta}{H} \csdef{Iota}{I} \csdef{Kappa}{K}
226 \csdef{varKappa}{K} \csdef{Mu}{M} \csdef{Nu}{N} \csdef{Omicron}{O}
227 \csdef{Rho}{P} \csdef{varRho}{P} \csdef{Tau}{T} \csdef{Chi}{X}

228 %*****%
229 %*****%
230 %** Tools *****%
231 %*****%

```

`\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”

```

232 \newcommand{\empchk}[2]
233   {\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”

```

234 \newcommand{\defval}[2]
235   {\if#1&#2\else#1\fi}

236 %*****%

```

`\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”

```

237 \newcommand{\arglef}[2]
238   {\empchk{#2}{#1\allowbreak#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”

```

239 \newcommand{\argrig}[2]
240   {\empchk{#1}{#1\allowbreak#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”

```

241 \newcommand{\argmid}[3]
242   {\empchk{#2}{#1\allowbreak#2\allowbreak#3}}

```

\argsep **Separators:** `\argsep{⟨A⟩}{⟨B⟩}{⟨C⟩}` evaluates to Argument $\langle A \rangle$, if Argument $\langle A \rangle$ is empty, to Argument $\langle A \rangle$, if Argument $\langle C \rangle$ is empty, and to the concatenation $\langle ABC \rangle$, otherwise.

- `\argsep{}{B}{C}` = “C”
- `\argsep{A}{B}{}` = “A”
- `\argsep{A}{}{C}` = “AC”
- `\argsep{A}{B}{C}` = “ABC”

```

243 \newcommand{\argsep}[3]
244   {\if&#1&#3\else#1\arglef{\allowbreak#2}{#3}\fi}

245 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

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

```

246 \newcommand{\varcmd}[6]
247   {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
248     {\csname check#1arg\endcsname{\argsep{##1}{#4}{##2}}}%
249     \expandafter\newcommand\csname check#1arg\endcsname[1]
250       {\csname @ifnextchar\endcsname%
251         \bgroup{\csname gobble#1arg\endcsname{##1}{#2{##1#5}#6}}}%
252     \expandafter\newcommand\csname#1\endcsname[1]
253       {\csname check#1arg\endcsname{#3##1}}}%

254 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

\seqoftag **Sequence of tags:** `\seqoftag{⟨A⟩}{⟨B⟩}{⟨C⟩} ...` to do!

```

255 \newcommand{\seqoftag}[3]
256   {\@for\itr:={#1}\do%
257     {\expandafter\csedef{\itr#2}%
258       {\noexpand\csname #3\endcsname{\itr}}}}

```

\seqofcmd **Sequence of commands:** `\seqofcmd{⟨A⟩}{⟨B⟩}{⟨C⟩} ...` to do!

```

259 \newcommand{\seqofcmd}[3]
260   {\@for\itr:={#1}\do%
261     {\expandafter\csedef{\itr#2}%
262       {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}

263 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

\seqoflatlow **Sequence of Latin lowercase letters:** `\seqoflatlow{⟨A⟩}{⟨B⟩} ...` to do!

```

264 \newcommand{\seqoflatlow}
265   {\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!

```

266 \newcommand{\seqoflatupp}
267   {\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!

```

268 \newcommand{\seqoflatlet}[2]
269   {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

270 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

\seqofgrklow **Sequence of Greek lowercase letters:** `\seqofgrklow{⟨A⟩}{⟨B⟩} ...` to do!

```

271 \newcommand{\seqofgrklow}
272   {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,zeta,eta,theta,vartheta,%
273     iota,kappa,varkappa,lambda,mu,nu,xi,omicron,pi,varpi,rho,varrho,sigma,%
274     varsigma,tau,upsilon,phi,varphi,chi,psi,omega}}

```

\seqofgrkupp **Sequence of Greek uppercase letters:** `\seqofgrkupp{⟨A⟩}{⟨B⟩} ...` to do!

```

275 \newcommand{\seqofgrkupp}
276   {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,Zeta,Eta,Theta,varTheta,%
277     Iota,Kappa,varKappa,Lambda,Mu,Nu,Xi,Omicron,Pi,varPi,Rho,varRho,Sigma,%
278     varSigma,Tau,Upsilon,Phi,varPhi,Chi,Psi,Omega}}

```

```

\seqofgrklet Sequence of Greek letters: \seqofgrklet{⟨A⟩}{⟨B⟩} ... to do!
279 \newcommand{\seqofgrklet}[2]
280   {\seqofgrklow{#1}{#2}\seqofgrkupp{#1}{#2}}

281 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\seqoflow Sequence of lowercase letters: \seqoflow{⟨A⟩}{⟨B⟩} ... to do!
282 \newcommand{\seqoflow}[2]
283   {\seqoflatlow{#1}{#2}\seqofgrklow{#1}{#2}}

\seqofupp Sequence of uppercase letters: \seqofupp{⟨A⟩}{⟨B⟩} ... to do!
284 \newcommand{\seqofupp}[2]
285   {\seqoflatupp{#1}{#2}\seqofgrkupp{#1}{#2}}

\seqoflet Sequence of all letters: \seqoflet{⟨A⟩}{⟨B⟩} ... to do!
286 \newcommand{\seqoflet}[2]
287   {\seqoflow{#1}{#2}\seqofupp{#1}{#2}}

288 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
289 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
290 %** Text Meta Commands %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
291 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\newtxt ... to do!
    • \newtxt[\rmfamily]{Name}[sub][sup][Ext] = “NamesubExt”
    • \newtxt[\sffamily]{Name}[sub][sup][Ext] = “NamesubExt”
    • \newtxt[\ttfamily]{Name}[sub][sup][Ext] = “NamesubExt”
292 \newcommandx{\newtxt}[5][1=, 3=, 4=, 5=]
293   {\text{#1#2\txsubsup{#1}{#3}{#4}{#5}\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”
294 \newcommandx{\newtxtsty}[2][2=]
295   {\newtxt[\defval{#2}{#1}]}

\newxtarg ... to do!
    • \newxtarg[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
    • \newxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
    • \newxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
296 \newcommandx{\newxtarg}[7][1=, 3=, 4=, 5=, 7=]
297   {\newtxt{#1}{#2}{#3}{#4}{#5\argmid{#6}{#7}}}

\newxtargsty ... to do!
    • \newxtargsty[\rmfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
    • \newxtargsty[\rmfamily][\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
    • \newxtargsty[\rmfamily][\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “NamesubExt1(Arg)Ext2”
298 \newcommandx{\newxtargsty}[2][2=]
299   {\newxtarg[\defval{#2}{#1}]}

\newtxtoarg ... to do!
    • \newtxtoarg[\rmfamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
    • \newtxtoarg[\sffamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
    • \newtxtoarg[\ttfamily]{Name}[sub][sup][Arg] = “Namesub(Arg)”
300 \newcommandx{\newtxtoarg}[5][1=, 3=, 4=, 5=]
301   {\newxtarg{#1}{#2}{#3}{#4}[]{}{#5}[]}}

```

```

\newtxtoargsty ... to do!
    • \newtxtoargsty{\rmfamily}{Name}[sub][sup][Arg] = "Namesub(Arg)"
    • \newtxtoargsty{\rmfamily}{\sffamily}{Name}[sub][sup][Arg] = "Namesub(Arg)"
    • \newtxtoargsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Arg] = "Namesub(Arg)"
302 \newcommandx{\newtxtoargsty}[2][2=]
303   {\newtxtoarg[\defval{#2}{#1}]}

\newtxtpar ... to do!
    • \newtxtpar[\rmfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \newtxtpar[\sffamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \newtxtpar[\ttfamily]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
304 \newcommandx{\newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
305   {\newtxt{#1}{#2}{#3}{#4}{#5}\argmid{[]}{#6}{[]}{#7}}

\newtxtparsty ... to do!
    • \newtxtparsty{\rmfamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \newtxtparsty{\rmfamily}{\sffamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \newtxtparsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
306 \newcommandx{\newtxtparsty}[2][2=]
307   {\newtxtpar[\defval{#2}{#1}]}

\newxttopar ... to do!
    • \newxttopar[\rmfamily]{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newxttopar[\sffamily]{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newxttopar[\ttfamily]{Name}[sub][sup][Par] = "Namesub[Par]"
308 \newcommandx{\newxttopar}[5][1=, 3=, 4=, 5=]
309   {\newxtpar{#1}{#2}{#3}{#4}[]{}{#5}[]}

\newxttoparsty ... to do!
    • \newxttoparsty{\rmfamily}{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newxttoparsty{\rmfamily}{\sffamily}{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newxttoparsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Par] = "Namesub[Par]"
310 \newcommandx{\newxttoparsty}[2][2=]
311   {\newxttopar[\defval{#2}{#1}]}

\txtsubsup ... to do!
    • \txtsubsup{sub}{} = "sub"; \txtsubsup{}{sup} = "sup"; \txtsubsup{sub}{sup} = "subsup"
    • \txtsubsup[\sffamily]{Aa}{Bb} = "AaBb"
    • \txtsubsup[\ttfamily]{Aa}{Bb} = "AaBb"
312 \newcommand{\txtsubsup}[3]{}
313   {\ensuremath{\empchk{#2}{_}{\text{#1#2}}}\empchk{#3}{^{\text{#1#3}}}}}

314 %%*****%

\txt ... to do!
    • \txt{Name}[sub][sup][Ext] = "NamesubExt"
    • \txt[\scshape]{Name}[sub][sup][Ext] = "NAMESUBEXT"
    • \txt[\bfseries]{Name}[sub][sup][Ext] = "NamesubExt"
315 \newcommand{\txt}
316   {\newtxtsty{\txtsty}}

\txtarget ... to do!
    • \txtarget{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \txtarget[\scshape]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NAMESUBEXT1(ARG)EXT2"

```



```

    • \txtarg[\bfseries]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
317 \newcommand{\txtarg}
318 {\newtxtargsty{\txtsty}}

\txtoarg ... to do!
    • \txtoarg{Name}[sub][sup][Arg] = "Namesub(Arg)"
    • \txtoarg[\scshape]{Name}[sub][sup][Arg] = "NAMESUB(ARG)"
    • \txtoarg[\bfseries]{Name}[sub][sup][Arg] = "Namesub(Arg)"
319 \newcommand{\txtoarg}
320 {\newtxtoargsty{\txtsty}}

\txtpar ... to do!
    • \txtpar{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
    • \txtpar[\scshape]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NAMESUBEXT1[PAR]EXT2"
    • \txtpar[\bfseries]{Name}[sub][sup][Ext1]{Par}[Ext2] = "NamesubExt1[Par]Ext2"
321 \newcommand{\txtpar}
322 {\newtxtparsty{\txtsty}}

\txtopar ... to do!
    • \txtopar{Name}[sub][sup][Par] = "Namesub[Par]"
    • \txtopar[\scshape]{Name}[sub][sup][Par] = "NAMESUB[PAR]"
    • \txtopar[\bfseries]{Name}[sub][sup][Par] = "Namesub[Par]"
323 \newcommand{\txtopar}
324 {\newtxtoparsty{\txtsty}}

\txtsty ... to do!
325 \newcommand{\txtsty}
326 {\mdseries\upshape\rmfamily}

327 %*****%

\cmdtxt ... to do!
    • \cmdtxt{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBEXT
328 \newcommand{\cmdtxt}[1]
329 {\csdef{txt#1}{\newtxtsty{\csname txtsty#1\endcsname}}}

\cmdtxtarg ... to do!
    • \cmdtxtarg{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
330 \newcommand{\cmdtxtarg}[1]
331 {\csdef{txtarg#1}{\newtxtargsty{\csname txtsty#1\endcsname}}}

\cmdtxtoarg ... to do!
    • \cmdtxtoarg{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(ARG)
332 \newcommand{\cmdtxtoarg}[1]
333 {\csdef{txtoarg#1}{\newtxtoargsty{\csname txtsty#1\endcsname}}}

\cmdtxtpar ... to do!
    • \cmdtxtpar{NewCmd}; \newcommand{\txtstyNewCmd}{\scshape\ttfamily};
    \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
334 \newcommand{\cmdtxtpar}[1]
335 {\csdef{txtpar#1}{\newtxtparsty{\csname txtsty#1\endcsname}}}

\cmdtxtopar ... to do!

```

```

    • \cmdttxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
      \ttxtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
336 \newcommand{\cmdttxtopar}[1]
337   {\csdef{ttxtopar#1}{\newttxtoparsty{\csname txtsty#1\endcsname}}}

\cmdttxall ... to do!
    • \cmdttxall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
      \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBEXT
      \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
      \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(ARG)
      \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
      \ttxtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
338 \newcommand{\cmdttxall}[1]
339   {\cmdttx{#1}\cmdttxarg{#1}\cmdttxoarg{#1}\cmdttxpar{#1}\cmdttxtopar{#1}}

340 %%*****%

\usrtxt ... to do!
    • \usrtxt{cmdName}{Suf}{}; \cmdNameSuf = cmdName
      \usrtxt{cmdName}{Suf}{arg}; \cmdNameSuf{Arg} = cmdName(Arg)
      \usrtxt{cmdName}{Suf}{par}; \cmdNameSuf{Par} = cmdName[Par]
    • \usrtxt{cmdName}{Suf}{newName}; \cmdNameSuf = newName
      \usrtxt{cmdName}{Suf}{arg}[newName]; \cmdNameSuf{Arg} = newName(Arg)
      \usrtxt{cmdName}{Suf}{par}[newName]; \cmdNameSuf{Par} = newName[Par]
341 \newcommandx{\usrtxt}[4][4=]
342   {\csdef{#1#2}{\csname txt#3\endcsname{\defval{#4}{#1}}}}

343 %%*****%
344 %%*****%
345 %** Math Meta Commands *****%
346 %%*****%

\newmth ... to do!
    • \newmth[mathrm]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmth[mathsf]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmth[mathtt]{Name}[sub][sup][Ext] = "NamesubExt"
347 \newcommandx{\newmth}[5][1=, 3=, 4=, 5=]
348   {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}{#5}}}

\newmthsty ... to do!
    • \newmthsty[mathrm]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmthsty[mathsf]{Name}[sub][sup][Ext] = "NamesubExt"
    • \newmthsty[mathtt]{Name}[sub][sup][Ext] = "NamesubExt"
349 \newcommandx{\newmthsty}[2][2=]
350   {\newmth[\defval{#2}{#1}]}

\newmtharg ... to do!
    • \newmtharg[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmtharg[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
351 \newcommandx{\newmtharg}[7][1=, 3=, 4=, 5=, 7=]
352   {\newmth{#1}{#2}{#3}{#4}{#5}\argmid{\!\left(\!{#6}{\right)}\arglef{\!}{#7}}}}

\newmthargsty ... to do!
    • \newmthargsty[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmthargsty[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"
    • \newmthargsty[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesubExt1(Arg)Ext2"

```

```

353 \newcommandx{\newmthargsty}[2][2=]
354   {\newmtharg[\defval{#2}{#1}]}

\newmthoarg ... to do!


- \newmthoarg{\mathrm}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
- \newmthoarg{\mathsf}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
- \newmthoarg{\mathtt}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”


355 \newcommandx{\newmthoarg}[5][1=, 3=, 4=, 5=]
356   {\newmtharg[#1]{#2}{#3}{#4}[] {#5}[] }

\newmthoargsty ... to do!


- \newmthoargsty{\mathrm}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
- \newmthoargsty{\mathrm}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”
- \newmthoargsty{\mathrm}{Name}[sub][sup][Arg] = “Namesupsub(Arg)”


357 \newcommandx{\newmthoargsty}[2][2=]
358   {\newmtharg[\defval{#2}{#1}]}

\newmthpar ... to do!


- \newmthpar{\mathrm}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
- \newmthpar{\mathsf}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
- \newmthpar{\mathtt}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”


359 \newcommandx{\newmthpar}[7][1=, 3=, 4=, 5=, 7=]
360   {\newmth[#1]{#2}{#3}{#4}{#5\argmid{!}\left[] {#6}{\right]}\arglef{!}{#7}}}]

\newmthparsty ... to do!


- \newmthparsty{\mathrm}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
- \newmthparsty{\mathrm}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”
- \newmthparsty{\mathrm}{Name}[sub][sup][Ext1]{Par}[Ext2] = “NamesupsubExt1[Par]Ext2”


361 \newcommandx{\newmthparsty}[2][2=]
362   {\newmthpar[\defval{#2}{#1}]}

\newmthopar ... to do!


- \newmthopar{\mathrm}{Name}[sub][sup][Par] = “Namesupsub[Par]”
- \newmthopar{\mathsf}{Name}[sub][sup][Par] = “Namesupsub[Par]”
- \newmthopar{\mathtt}{Name}[sub][sup][Par] = “Namesupsub[Par]”


363 \newcommandx{\newmthopar}[5][1=, 3=, 4=, 5=]
364   {\newmthpar[#1]{#2}{#3}{#4}[] {#5}[] }

\newmthoparsty ... to do!


- \newmthoparsty{\mathrm}{Name}[sub][sup][Par] = “Namesupsub[Par]”
- \newmthoparsty{\mathrm}{Name}[sub][sup][Par] = “Namesupsub[Par]”
- \newmthoparsty{\mathrm}{Name}[sub][sup][Par] = “Namesupsub[Par]”


365 \newcommandx{\newmthoparsty}[2][2=]
366   {\newmthopar[\defval{#2}{#1}]}

\mthsubsup ... to do!
367 \newcommand{\mthsubsup}[2]
368   {\empchk{#1}{_ {#1}}\empchk{#2}{^ {#2}}}

369 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\mth ... to do!


- \mth{Name}[sub][sup][Ext] = “NamesupsubExt”
- \mth{\mathbf}{Name}[sub][sup][Ext] = “NamesupsubExt”
- \mth{\mathtt}{Name}[sub][sup][Ext] = “NamesupsubExt”

```

```

370 \newcommand{\mth}
371 {\newmthsty{\mthsty}}

\mtharg ... to do!


- $\mtharg\{Name\}_{sub}^{sup}[Ext1]\{Arg\}[Ext2] = Name_{sub}^{sup}Ext1(Arg)Ext2$
- $\mtharg[\mathbf{f}]\{Name\}_{sub}^{sup}[Ext1]\{Arg\}[Ext2] = \mathbf{Name}_{sub}^{sup}Ext1(Arg)Ext2$
- $\mtharg[\mathtt{f}]\{Name\}_{sub}^{sup}[Ext1]\{Arg\}[Ext2] = \mathbf{Name}_{sub}^{sup}Ext1(Arg)Ext2$


372 \newcommand{\mtharg}
373 {\newmthargsty{\mthsty}}

\mthoarg ... to do!


- $\mthoarg\{Name\}_{sub}^{sup}[Arg] = Name_{sub}^{sup}(Arg)$
- $\mthoarg[\mathbf{f}]\{Name\}_{sub}^{sup}[Arg] = \mathbf{Name}_{sub}^{sup}(Arg)$
- $\mthoarg[\mathtt{f}]\{Name\}_{sub}^{sup}[Arg] = \mathbf{Name}_{sub}^{sup}(Arg)$


374 \newcommand{\mthoarg}
375 {\newmthoargsty{\mthsty}}

\mthpar ... to do!


- $\mthpar\{Name\}_{sub}^{sup}[Ext1]\{Par\}[Ext2] = Name_{sub}^{sup}Ext1[Par]Ext2$
- $\mthpar[\mathbf{f}]\{Name\}_{sub}^{sup}[Ext1]\{Par\}[Ext2] = \mathbf{Name}_{sub}^{sup}Ext1[Par]Ext2$
- $\mthpar[\mathtt{f}]\{Name\}_{sub}^{sup}[Ext1]\{Par\}[Ext2] = \mathbf{Name}_{sub}^{sup}Ext1[Par]Ext2$


376 \newcommand{\mthpar}
377 {\newmthparsty{\mthsty}}

\mthopar ... to do!


- $\mthopar\{Name\}_{sub}^{sup}[Par] = Name_{sub}^{sup}[Par]$
- $\mthopar[\mathbf{f}]\{Name\}_{sub}^{sup}[Par] = \mathbf{Name}_{sub}^{sup}[Par]$
- $\mthopar[\mathtt{f}]\{Name\}_{sub}^{sup}[Par] = \mathbf{Name}_{sub}^{sup}[Par]$


378 \newcommand{\mthopar}
379 {\newmthoparsty{\mthsty}}

\mthsty ... to do!
380 \newcommand{\mthsty}
381 {}

382 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\cmdmth ... to do!


- $\cmdmth\{NewCmd\}; \newcommand\{mthstyNewCmd\}\{\mathtt{f}\};$   

 $\mthNewCmd\{Name\}_{sub}^{sup}[Ext] = Name_{sub}^{sup}Ext$


383 \newcommand{\cmdmth}[1]
384 {\csdef{mth#1}\newmthsty{mthsty#1}}

\cmdmtharg ... to do!


- $\cmdmtharg\{NewCmd\}; \newcommand\{mthstyNewCmd\}\{\mathtt{f}\};$   

 $\mthargNewCmd\{Name\}_{sub}^{sup}[Ext1]\{Arg\}[Ext2] = Name_{sub}^{sup}Ext1(Arg)Ext2$


385 \newcommand{\cmdmtharg}[1]
386 {\csdef{mtharg#1}\newmthargsty{mthsty#1}}

\cmdmthoarg ... to do!


- $\cmdmthoarg\{NewCmd\}; \newcommand\{mthstyNewCmd\}\{\mathtt{f}\};$   

 $\mthoargNewCmd\{Name\}_{sub}^{sup}[Arg] = Name_{sub}^{sup}(Arg)$


387 \newcommand{\cmdmthoarg}[1]
388 {\csdef{mthoarg#1}\newmthoargsty{mthsty#1}}

\cmdmthpar ... to do!

```

```

    • \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesubExt1[Par]Ext2
389 \newcommand{\cmdmthpar}[1]
390   {\csdef{mthpar#1}{\newmthparsty{mthsty#1}}}

\cmdmthopar ... to do!
    • \cmdmthopar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthoparNewCmd{Name}[sub][sup][Par] = Namesub[Par]
391 \newcommand{\cmdmthopar}[1]
392   {\csdef{mthopar#1}{\newmthoparsty{mthsty#1}}}

\cmdmthall ... to do!
    • \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthNewCmd{Name}[sub][sup][Ext] = NamesubExt
      \mthargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesubExt1(Arg)Ext2
      \mthoargNewCmd{Name}[sub][sup][Arg] = Namesub(Arg)
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesubExt1[Par]Ext2
      \mthoparNewCmd{Name}[sub][sup][Par] = Namesub[Par]
393 \newcommand{\cmdmthall}[1]
394   {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

395 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\usrmth ... to do!
    • \usrmth{cmdName}{Suf}{}; \cmdNameSuf = cmdName
      \usrmth{cmdName}{Suf}{arg}; \cmdNameSuf{Arg} = cmdName(Arg)
      \usrmth{cmdName}{Suf}{par}; \cmdNameSuf{Par} = cmdName[Par]
    • \usrmth{cmdName}{Suf}{}[newName]; \cmdNameSuf = newName
      \usrmth{cmdName}{Suf}{arg}[newName]; \cmdNameSuf{Arg} = newName(Arg)
      \usrmth{cmdName}{Suf}{par}[newName]; \cmdNameSuf{Par} = newName[Par]
396 \newcommandx{\usrmth}[4][4=]
397   {\csdef{#1#2}{\csname mth#3\endcsname{\defval{#4}{#1}}}}

398 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\usrmthlatlow ... to do!
399 \newcommandx{\usrmthlatlow}[4][4=]
400   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}

\usrmthlatupp ... to do!
401 \newcommandx{\usrmthlatupp}[4][4=]
402   {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}

\usrmthlatlet ... to do!
403 \newcommandx{\usrmthlatlet}[4][4=]
404   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}

\usrmthgrklow ... to do!
405 \newcommandx{\usrmthgrklow}[4][4=]
406   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}

\usrmthgrkupp ... to do!
407 \newcommandx{\usrmthgrkupp}[4][4=]
408   {\usrmth{#1}{#2}{#3}[#4]\seqofgrkupp{#1#2}{mth#3}}

\usrmthgrklet ... to do!
409 \newcommandx{\usrmthgrklet}[4][4=]
410   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}

\usrmthlow ... to do!
411 \newcommandx{\usrmthlow}[4][4=]
412   {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}

```

```

\usrmthupp ... to do!
413 \newcommandx{\usrmthupp}[4][4=]
414   {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}

\usrmthlet ... to do!
415 \newcommandx{\usrmthlet}[4][4=]
416   {\usrmth{#1}{#2}{#3}[#4]\seqoflet{#1#2}{mth#3}}

417 %%*****%
418 %%*****%
419 %%** Text Macro Generators *****%
420 %%*****%
421 \iftxtgen@

\txtdef, ... ... to do!
    • \txtdef{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \txtargdef{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
422 %% Style for Definitions
423 \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] =  $newName_{sub}^{sub}ext$ 
424 \newcommandx{\cmdtxtdef}[2][2=]
425   {\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] =  $newName_{sub}^{sub}ext1(arg)ext2$ 
426 \newcommandx{\cmdtxtargdef}[2][2=]
427   {\usrtxt{#1}{}\{argdef\}[#2]}

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

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

\cmdtxtopardef ... to do!
    • \cmdtxtopardef{cmdName};
      \cmdName[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
    • \cmdtxtopardef{cmdName}[newName];
      \cmdName[sub][sub][par] =  $newName_{sub}^{sub}[par]$ 

```

```

432 \newcommandx{\cmdtxtopardef}[2][2=]
433   {\usrtxt{#1}{\opardef}[#2]}

\txtabr, ... ... to do!
  • \txtabr{Name}[sub][sup][Ext] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext}$ 
  • \txtargabr{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext1}(\text{Arg}) \text{Ext2}$ 
  • \txtparabr{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{\text{sub}}^{\text{sup}} \text{Ext1}[\text{Par}] \text{Ext2}$ 

434 %% Style for Abbreviations
435 \cmdtxtall{abr}\newcommand{\txtstyabr}{\em}

\cmdtxtabr ... to do!
  • \cmdtxtabr{cmdName};
    \cmdName[sub][sub][ext] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext}$ 
  • \cmdtxtabr{cmdName}[newName];
    \cmdName[sub][sub][ext] =  $newName_{\text{sub}}^{\text{sub}} \text{ext}$ 

436 \newcommandx{\cmdtxtabr}[2][2=]
437   {\usrtxt{#1}{\abr}[#2]}

\cmdtxtargabr ... to do!
  • \cmdtxtargabr{cmdName};
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg}) \text{ext2}$ 
  • \cmdtxtargabr{cmdName}[newName];
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $newName_{\text{sub}}^{\text{sub}} \text{ext1}(\text{arg}) \text{ext2}$ 

438 \newcommandx{\cmdtxtargabr}[2][2=]
439   {\usrtxt{#1}{\argabr}[#2]}

\cmdtxtoargabr ... to do!
  • \cmdtxtoargabr{cmdName};
    \cmdName[sub][sub][arg] =  $cmdName_{\text{sub}}^{\text{sub}}(\text{arg})$ 
  • \cmdtxtoargabr{cmdName}[newName];
    \cmdName[sub][sub][arg] =  $newName_{\text{sub}}^{\text{sub}}(\text{arg})$ 

440 \newcommandx{\cmdtxtoargabr}[2][2=]
441   {\usrtxt{#1}{\oargabr}[#2]}

\cmdtxtparabr ... to do!
  • \cmdtxtparabr{cmdName};
    \cmdName[sub][sub][ext1]{par}[ext2] =  $cmdName_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}] \text{ext2}$ 
  • \cmdtxtparabr{cmdName}[newName];
    \cmdName[sub][sub][ext1]{par}[ext2] =  $newName_{\text{sub}}^{\text{sub}} \text{ext1}[\text{par}] \text{ext2}$ 

442 \newcommandx{\cmdtxtparabr}[2][2=]
443   {\usrtxt{#1}{\parabr}[#2]}

\cmdtxtoparabr ... to do!
  • \cmdtxtoparabr{cmdName};
    \cmdName[sub][sub][par] =  $cmdName_{\text{sub}}^{\text{sub}}[\text{par}]$ 
  • \cmdtxtoparabr{cmdName}[newName];
    \cmdName[sub][sub][par] =  $newName_{\text{sub}}^{\text{sub}}[\text{par}]$ 

444 \newcommandx{\cmdtxtoparabr}[2][2=]
445   {\usrtxt{#1}{\oparabr}[#2]}

446 %%*****

\txtname, ... ... to do!
  • \txtname{Name}[sub][sup][Ext] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT}$ 
  • \txtargname{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT1}(\text{ARG}) \text{EXT2}$ 
  • \txtparname{Name}[sub][sup][Ext1]{Par}[Ext2] =  $NAME_{\text{SUB}}^{\text{SUP}} \text{EXT1}[\text{PAR}] \text{EXT2}$ 

```

```

447 %% Style for Names
448 \cmdtxtall{name}\newcommand{\txtstytname}{\normalfont\mdseries\scshape\sffamily}

```

```
\cmdtxtname ... to do!
```

- \cmdtxtname{cmdName};
 \cmdName[sub][sub][ext] = CMDNAME_{SUB}EXT
- \cmdtxtname{cmdName}[newName];
 \cmdName[sub][sub][ext] = NEWNAME_{SUB}EXT

```

449 \newcommandx{\cmdtxtname}[2][2=]
450 {\usrtxt{#1}{-}{name}[#2]}

```

```
\cmdtxtargname ... to do!
```

- \cmdtxtargname{cmdName};
 \cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAME_{SUB}EXT1(ARG)EXT2
- \cmdtxtargname{cmdName}[newName];
 \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAME_{SUB}EXT1(ARG)EXT2

```

451 \newcommandx{\cmdtxtargname}[2][2=]
452 {\usrtxt{#1}{-}{argname}[#2]}

```

```
\cmdtxtoargname ... to do!
```

- \cmdtxtoargname{cmdName};
 \cmdName[sub][sub][arg] = CMDNAME_{SUB}(ARG)
- \cmdtxtoargname{cmdName}[newName];
 \cmdName[sub][sub][arg] = NEWNAME_{SUB}(ARG)

```

453 \newcommandx{\cmdtxtoargname}[2][2=]
454 {\usrtxt{#1}{-}{oargname}[#2]}

```

```
\cmdtxtparname ... to do!
```

- \cmdtxtparname{cmdName};
 \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAME_{SUB}EXT1[PAR]EXT2
- \cmdtxtparname{cmdName}[newName];
 \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAME_{SUB}EXT1[PAR]EXT2

```

455 \newcommandx{\cmdtxtparname}[2][2=]
456 {\usrtxt{#1}{-}{parname}[#2]}

```

```
\cmdtxtoparname ... to do!
```

- \cmdtxtoparname{cmdName};
 \cmdName[sub][sub][par] = CMDNAME_{SUB}[PAR]
- \cmdtxtoparname{cmdName}[newName];
 \cmdName[sub][sub][par] = NEWNAME_{SUB}[PAR]

```

457 \newcommandx{\cmdtxtoparname}[2][2=]
458 {\usrtxt{#1}{-}{oparname}[#2]}

```

```
\txtcom, ... ... to do!
```

- \txtcom{Name}[sub][sup][Ext] = NAME_{SUB}^{SUP}EXT
- \txtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAME_{SUB}^{SUP}EXT1(ARG)EXT2
- \txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAME_{SUB}^{SUP}EXT1[PAR]EXT2

```

459 %% Style for Complexities
460 \cmdtxtall{com}\newcommand{\txtstytcom}{\normalfont\mdseries\scshape\rmfamily}

```

```
\cmdtxtcom ... to do!
```

- \cmdtxtcom{cmdName};
 \cmdName[sub][sub][ext] = CMDNAME_{SUB}EXT
- \cmdtxtcom{cmdName}[newName];
 \cmdName[sub][sub][ext] = NEWNAME_{SUB}EXT

```

461 \newcommandx{\cmdtxtcom}[2][2=]
462 {\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
463 \newcommandx{\cmdtxtargcom}[2][2=]
464   {\usrtxt{#1}{-}{argcom}[#2]}

\cmdtxtoargcom ... to do!
    • \cmdtxtoargcom{cmdName};
      \cmdName[sub][sub][arg] = CMDNAMESUBSUB(ARG)
    • \cmdtxtoargcom{cmdName}[newName];
      \cmdName[sub][sub][arg] = NEWNAMESUBSUB(ARG)
465 \newcommandx{\cmdtxtoargcom}[2][2=]
466   {\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
467 \newcommandx{\cmdtxtparcom}[2][2=]
468   {\usrtxt{#1}{-}{parcom}[#2]}

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

471 \fi
472 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
473 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
474 %** Math Macro Generators %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
475 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
476 \ifmthgen@

\mthname, ... ... to do!
    • \mthname{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargname{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparname{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Par)Ext2$ 
477 % Style for Names
478 \cmdmthall{name}\newcommand{\mthstname}{\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
479 \seqoflatupp{Name}{mthname}

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

```

```

\cmdmthargname ... to do!
    • \cmdmthargname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 
482 \newcommandx{\cmdmthargname}[2][2=]
483   {\usrmth{#1}{Name}{argname}[#2]}

\cmdmthoargname ... to do!
    • \cmdmthoargname{CMDNAME};
      \CMDNAMEName[sub][sub][arg] =  $\mathcal{CMDNAME}_{sub}^{sub}(arg)$ 
    • \cmdmthoargname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
484 \newcommandx{\cmdmthoargname}[2][2=]
485   {\usrmth{#1}{Name}{oargname}[#2]}

\cmdmthparname ... to do!
    • \cmdmthparname{CMDNAME};
      \CMDNAMEName[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
486 \newcommandx{\cmdmthparname}[2][2=]
487   {\usrmth{#1}{Name}{parname}[#2]}

\cmdmthoparname ... to do!
    • \cmdmthoparname{CMDNAME};
      \CMDNAMEName[sub][sub][par] =  $\mathcal{CMDNAME}_{sub}^{sub}[par]$ 
    • \cmdmthoparname{cmdName}{NEWNAME};
      \cmdNameName[sub][sub][par] =  $\mathcal{NEWNAME}_{sub}^{sub}[par]$ 
488 \newcommandx{\cmdmthoparname}[2][2=]
489   {\usrmth{#1}{Name}{oparname}[#2]}

\mthfam, ... ... to do!
    • \mthfam{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargfam{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfam{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2$ 
490 %% Style for Families
491 \cmdmthall{fam}\newcommand{\mthstyfam}{\mathscr}

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

\cmdmthfam ... to do!
    • \cmdmthfam{CMDNAME};
      \CMDNAMEFam[sub][sub][ext] =  $\mathcal{CMDNAME}_{sub}^{sub}ext$ 
    • \cmdmthfam{cmdName}{NEWNAME};
      \cmdNameFam[sub][sub][ext] =  $\mathcal{NEWNAME}_{sub}^{sub}ext$ 
493 \newcommandx{\cmdmthfam}[2][2=]
494   {\usrmth{#1}{Fam}{fam}[#2]}

\cmdmthargfam ... to do!
    • \cmdmthargfam{CMDNAME};
      \CMDNAMEFam[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargfam{cmdName}{NEWNAME};
      \cmdNameFam[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1(arg)ext2$ 

```

```

495 \newcommandx{\cmdmthargfam}[2][2=]
496   {\usrmth{#1}{Fam}{argfam}{#2}}

\cmdmthoargfam ... to do!
  • \cmdmthoargfam{CMDNAME};
    \CMDNAMEFam[sub][sub][arg] =  $\mathcal{CMDNAME}^{\text{sub}}(arg)$ 
  • \cmdmthoargfam{cmdFam}{NEWNAME};
    \cmdFamFam[sub][sub][arg] =  $\mathcal{NEWNAME}^{\text{sub}}(arg)$ 
497 \newcommandx{\cmdmthoargfam}[2][2=]
498   {\usrmth{#1}{Fam}{oargfam}{#2}}

\cmdmthparfam ... to do!
  • \cmdmthparfam{CMDNAME};
    \CMDNAMEFam[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDNAME}^{\text{sub}}_{\text{ext1}}[par]_{\text{ext2}}$ 
  • \cmdmthparfam{cmdName}{NEWNAME};
    \cmdNameFam[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEWNAME}^{\text{sub}}_{\text{ext1}}[par]_{\text{ext2}}$ 
499 \newcommandx{\cmdmthparfam}[2][2=]
500   {\usrmth{#1}{Fam}{parfam}{#2}}

\cmdmthoparfam ... to do!
  • \cmdmthoparfam{CMDNAME};
    \CMDNAMEFam[sub][sub][par] =  $\mathcal{CMDNAME}^{\text{sub}}[par]$ 
  • \cmdmthoparfam{cmdFam}{NEWNAME};
    \cmdFamFam[sub][sub][par] =  $\mathcal{NEWNAME}^{\text{sub}}[par]$ 
501 \newcommandx{\cmdmthoparfam}[2][2=]
502   {\usrmth{#1}{Fam}{oparfam}{#2}}

\mthcls, ... ... to do!
  • \mthcls{NAME}[sub][sup][Ext] =  $\mathcal{NAME}^{\text{sup}}_{\text{sub}}Ext$ 
  • \mthargcls{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}^{\text{sup}}_{\text{sub}}Ext1(Arg)Ext2$ 
  • \mthparcls{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}^{\text{sup}}_{\text{sub}}Ext1[Par]Ext2$ 
503 %% Style for Classes
504 \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
505 \seqoflatupp{Cls}{mthcls}

\cmdmthcls ... to do!
  • \cmdmthcls{CMDNAME};
    \CMDNAMECls[sub][sub][ext] =  $\mathcal{CMDNAME}^{\text{sub}}_{\text{ext}}$ 
  • \cmdmthcls{cmdName}{NEWNAME};
    \cmdNameCls[sub][sub][ext] =  $\mathcal{NEWNAME}^{\text{sub}}_{\text{ext}}$ 
506 \newcommandx{\cmdmthcls}[2][2=]
507   {\usrmth{#1}{Cls}{cls}{#2}}

\cmdmthargcls ... to do!
  • \cmdmthargcls{CMDNAME};
    \CMDNAMECls[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDNAME}^{\text{sub}}_{\text{ext1}}(arg)_{\text{ext2}}$ 
  • \cmdmthargcls{cmdName}{NEWNAME};
    \cmdNameCls[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEWNAME}^{\text{sub}}_{\text{ext1}}(arg)_{\text{ext2}}$ 
508 \newcommandx{\cmdmthargcls}[2][2=]
509   {\usrmth{#1}{Cls}{argcls}{#2}}

\cmdmthoargcls ... to do!
  • \cmdmthoargcls{CMDNAME};
    \CMDNAMECls[sub][sub][arg] =  $\mathcal{CMDNAME}^{\text{sub}}(arg)$ 

```

```

    • \cmdmthoargcls{cmdCls}[NEWNAME];
      \cmdClsCls[sub][sub][arg] =  $\mathcal{NEWNAME}_{sub}^{sub}(arg)$ 
510 \newcommandx{\cmdmthoargcls}[2][2=]
511   {\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] =  $\mathcal{NEWNAME}_{sub}^{sub}ext1[par]ext2$ 
512 \newcommandx{\cmdmthparcls}[2][2=]
513   {\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] =  $\mathcal{NEWNAME}_{sub}^{sub}[par]$ 
514 \newcommandx{\cmdmthoparcls}[2][2=]
515   {\usrmth{#1}{Cls}{oparcls}{#2}}

\mthsig, ... ... to do!
    • \mthsig{Name}[sub][sup][Ext] =  $\mathcal{ame}_{sub}^{sup}Ext$ 
    • \mthargsig{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparsig{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1[Par]Ext2$ 
516 %% Style for Signatures
517 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}

\asig, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, 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
518 \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] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext$ 
519 \newcommandx{\cmdmthsig}[2][2=]
520   {\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] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 
521 \newcommandx{\cmdmthargsig}[2][2=]
522   {\usrmth{#1}{Sig}{argsig}{#2}}

\cmdmthoargsig ... to do!
    • \cmdmthoargsig{cmdName};
      \cmdNameSig[sub][sub][arg] =  $cmd\mathcal{ame}_{sub}^{sub}(arg)$ 
    • \cmdmthoargsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][arg] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}(arg)$ 
523 \newcommandx{\cmdmthoargsig}[2][2=]
524   {\usrmth{#1}{Sig}{oargsig}{#2}}

```

```

\cmdmthparsig ... to do!
    • \cmdmthparsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = cmd\namesubext1[par]ext2
    • \cmdmthparsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = \new\namesubext1[par]ext2
525 \newcommandx{\cmdmthparsig}[2][2=]
526   {\usrmth{#1}{Sig}{parsig}{#2}}

\cmdmthoparsig ... to do!
    • \cmdmthoparsig{cmdName};
      \cmdNameSig[sub][sub][par] = cmd\namesub[par]
    • \cmdmthoparsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][par] = \new\namesub[par]
527 \newcommandx{\cmdmthoparsig}[2][2=]
528   {\usrmth{#1}{Sig}{oparsig}{#2}}

\mthstr, ... ... to do!
    • \mthstr{Name}[sub][sup][Ext] = \namesupsubExt
    • \mthargstr{Name}[sub][sup][Ext1]{Arg}[Ext2] = \namesupsubExt1(Arg)Ext2
    • \mthparstr{Name}[sub][sup][Ext1]{Par}[Ext2] = \namesupsubExt1[Par]Ext2
529 %% Style for Structures
530 \cmdmthall{str}\newcommand{\mthstyst}{\mathfrak}

\astr, ... ... 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, ι, κ, λ, μ, ν, ξ, ο, π, ρ, ς, σ, ϓ, τ, υ, φ, ϕ, χ, ψ, ω
531 \seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}

\cmdmthstr ... to do!
    • \cmdmthstr{cmdName};
      \cmdNameStr[sub][sub][ext] = cmd\namesubext
    • \cmdmthstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext] = \new\namesubext
532 \newcommandx{\cmdmthstr}[2][2=]
533   {\usrmth{#1}{Str}{str}{#2}}

\cmdmthargstr ... to do!
    • \cmdmthargstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = cmd\namesubext1(arg)ext2
    • \cmdmthargstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = \new\namesubext1(arg)ext2
534 \newcommandx{\cmdmthargstr}[2][2=]
535   {\usrmth{#1}{Str}{argstr}{#2}}

\cmdmthoargstr ... to do!
    • \cmdmthoargstr{cmdName};
      \cmdNameStr[sub][sub][arg] = cmd\namesub(arg)
    • \cmdmthoargstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][arg] = \new\namesub(arg)
536 \newcommandx{\cmdmthoargstr}[2][2=]
537   {\usrmth{#1}{Str}{oargstr}{#2}}

\cmdmthparstr ... to do!
    • \cmdmthparstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = cmd\namesubext1[par]ext2

```

```

    • \cmdmthparstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = \newNamesubsubext1[par]ext2
538 \newcommandx{\cmdmthparstr}[2][2=]
539   {\usrmth{#1}{Str}{parstr}[#2]}

\cmdmthoparstr ... to do!
    • \cmdmthoparstr{cmdName};
      \cmdNameStr[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][par] = \newNamesubsub[par]
540 \newcommandx{\cmdmthoparstr}[2][2=]
541   {\usrmth{#1}{Str}{oparstr}[#2]}

\mthset, ... ... to do!
    • \mthset{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargset{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparset{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
542 %% Style for Sets
543 \cmdmthall{set}\newcommand{\mthstyset}{\mathrm}

\aset, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \varTheta, I, K, \Lambda, M, N, \Xi, O, \Pi, \varPi, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
544 \seqoflet{Set}{mthset}

\cmdmthset ... to do!
    • \cmdmthset{cmdName};
      \cmdNameSet[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext] = NewNamesubsubext
545 \newcommandx{\cmdmthset}[2][2=]
546   {\usrmth{#1}{Set}{set}[#2]}

\cmdmthargset ... to do!
    • \cmdmthargset{cmdName};
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
547 \newcommandx{\cmdmthargset}[2][2=]
548   {\usrmth{#1}{Set}{argset}[#2]}

\cmdmthoargset ... to do!
    • \cmdmthoargset{cmdName};
      \cmdNameSet[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][arg] = NewNamesubsub(arg)
549 \newcommandx{\cmdmthoargset}[2][2=]
550   {\usrmth{#1}{Set}{oargset}[#2]}

\cmdmthparset ... to do!
    • \cmdmthparset{cmdName};
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparset{cmdName}[NewName];
      \cmdNameSet[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
551 \newcommandx{\cmdmthparset}[2][2=]
552   {\usrmth{#1}{Set}{parset}[#2]}

```

```

\cmdmthoparset ... to do!
    • \cmdmthoparset{cmdName};
      \cmdNameSet[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparset{cmdSet}[NewName];
      \cmdSetSet[sub][sub][par] = NewNamesubsub[par]
553 \newcommandx{\cmdmthoparset}[2][2=]
554   {\usrmth{#1}{Set}{oparset}{#2}}

\cmdmthsetext ... to do!
555 \newcommandx{\cmdmthsetext}[3][2=, 3=]
556   {\cmdmthset{#1}[#2]\caselower[q]{#1}%
557   \usrmthlet{\thestring}{Sym}{sym}
558   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}%
559   \usrmthlet{\thestring}{Elm}{elm}
560   [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}]

\mthrel, ... ... to do!
    • \mthrel{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargrel{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparrel{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
561 %% Style for Relations
562 \cmdmthall{rel}\newcommand{\mthstyrel}{\mathit}

\arel, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, T, U, V, W, X, Y, Z
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, Τ, Φ, Φ, X, Ψ, Ω
563 \seqoflet{Rel}{mthrel}

\cmdmthrel ... to do!
    • \cmdmthrel{cmdName};
      \cmdNameRel[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext] = NewNamesubsubext
564 \newcommandx{\cmdmthrel}[2][2=]
565   {\usrmth{#1}{Rel}{rel}{#2}}

\cmdmthargrel ... to do!
    • \cmdmthargrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
566 \newcommandx{\cmdmthargrel}[2][2=]
567   {\usrmth{#1}{Rel}{argrel}{#2}}

\cmdmthoargrel ... to do!
    • \cmdmthoargrel{cmdName};
      \cmdNameRel[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][arg] = NewNamesubsub(arg)
568 \newcommandx{\cmdmthoargrel}[2][2=]
569   {\usrmth{#1}{Rel}{oargrel}{#2}}

\cmdmthparrel ... to do!
    • \cmdmthparrel{cmdName};
      \cmdNameRel[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2

```

```

    • \cmdmthparrel{cmdName}[NewName];
      \cmdNameRel[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
570 \newcommandx{\cmdmthparrel}[2][2=]
571   {\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] =  $NewName_{sub}^{sub}[par]$ 
572 \newcommandx{\cmdmthoparrel}[2][2=]
573   {\usrmth{#1}{Rel}{oparrel}{#2}}

\mthfun, ... ... to do!
    • \mthfun{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargfun{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfun{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
574 %% Style for Functions
575 \cmdmthall{fun}\newcommand{\mthstyfun}{\mathsf}

\afun, ... ... 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,  $\Gamma, \Delta, E, Z, H, \Theta, \vartheta, I, K, \Lambda, M, N, \Xi, O, \Pi, \varPi, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
576 \seqoflet{Fun}{mthfun}

\cmdmthfun ... to do!
    • \cmdmthfun{cmdName};
      \cmdNameFun[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
    • \cmdmthfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
577 \newcommandx{\cmdmthfun}[2][2=]
578   {\usrmth{#1}{Fun}{fun}{#2}}

\cmdmthargfun ... to do!
    • \cmdmthargfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub}ext1(arg)ext2$ 
579 \newcommandx{\cmdmthargfun}[2][2=]
580   {\usrmth{#1}{Fun}{argfun}{#2}}

\cmdmthoargfun ... to do!
    • \cmdmthoargfun{cmdName};
      \cmdNameFun[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
    • \cmdmthoargfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][arg] =  $NewName_{sub}^{sub}(arg)$ 
581 \newcommandx{\cmdmthoargfun}[2][2=]
582   {\usrmth{#1}{Fun}{oargfun}{#2}}

\cmdmthparfun ... to do!
    • \cmdmthparfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
583 \newcommandx{\cmdmthparfun}[2][2=]
584   {\usrmth{#1}{Fun}{parfun}{#2}}

```



```

\cmdmthoparfun ... to do!
    • \cmdmthoparfun{cmdName};
      \cmdNameFun[sub][sub][par] = cmdNamesubsub[par]
    • \cmdmthoparfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][par] = NewNamesubsub[par]
585 \newcommandx{\cmdmthoparfun}[2][2=]
586   {\usrmth{#1}{Fun}{oparfun}{#2}}

\mthsym, ... ... to do!
    • \mthsym{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargsym{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparsym{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
587 %% Style for Symbols
588 \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
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, T, \Phi, \Phi, X, \Psi, \Omega$ 
589 \seqoflet{Sym}{mthsym}

\cmdmthsym ... to do!
    • \cmdmthsym{cmdName};
      \cmdNameSym[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext] = NewNamesubsubext
590 \newcommandx{\cmdmthsym}[2][2=]
591   {\usrmth{#1}{Sym}{sym}{#2}}

\cmdmthargsym ... to do!
    • \cmdmthargsym{cmdName};
      \cmdNameSym[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
592 \newcommandx{\cmdmthargsym}[2][2=]
593   {\usrmth{#1}{Sym}{argsym}{#2}}

\cmdmthoargsym ... to do!
    • \cmdmthoargsym{cmdName};
      \cmdNameSym[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargsym{cmdSym}[NewName];
      \cmdSymSym[sub][sub][arg] = NewNamesubsub(arg)
594 \newcommandx{\cmdmthoargsym}[2][2=]
595   {\usrmth{#1}{Sym}{oargsym}{#2}}

\cmdmthparsym ... to do!
    • \cmdmthparsym{cmdName};
      \cmdNameSym[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
596 \newcommandx{\cmdmthparsym}[2][2=]
597   {\usrmth{#1}{Sym}{parsym}{#2}}

\cmdmthoparsym ... to do!
    • \cmdmthoparsym{cmdName};
      \cmdNameSym[sub][sub][par] = cmdNamesubsub[par]

```

```

    • \cmdmthoparsym{cmdSym}[NewName];
      \cmdSymSym[sub][sub][par] =  $NewName_{sub}^{sub}[par]$ 
598 \newcommandx{\cmdmthoparsym}[2][2=]
599   {\usrmth{#1}{Sym}{oparsym}[#2]}

\mthelm, ... ... to do!
    • \mthelm{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargelm{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparelm{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
600 %% Style for Elements
601 \cmdmthall{elm}\newcommand{\mthstyelm}{\mathnormal}

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

\cmdmthelm ... to do!
    • \cmdmthelm{cmdName};
      \cmdNameElm[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
    • \cmdmthelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
603 \newcommandx{\cmdmthelm}[2][2=]
604   {\usrmth{#1}{Elm}{elm}[#2]}

\cmdmthargelm ... to do!
    • \cmdmthargelm{cmdName};
      \cmdNameElm[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub}ext1(arg)ext2$ 
605 \newcommandx{\cmdmthargelm}[2][2=]
606   {\usrmth{#1}{Elm}{argelm}[#2]}

\cmdmthoargelm ... to do!
    • \cmdmthoargelm{cmdName};
      \cmdNameElm[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
    • \cmdmthoargelm{cmdElm}[NewName];
      \cmdElmElm[sub][sub][arg] =  $NewName_{sub}^{sub}(arg)$ 
607 \newcommandx{\cmdmthoargelm}[2][2=]
608   {\usrmth{#1}{Elm}{oargelm}[#2]}

\cmdmthparelm ... to do!
    • \cmdmthparelm{cmdName};
      \cmdNameElm[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparelm{cmdName}[NewName];
      \cmdNameElm[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
609 \newcommandx{\cmdmthparelm}[2][2=]
610   {\usrmth{#1}{Elm}{parelm}[#2]}

\cmdmthoparelm ... to do!
    • \cmdmthoparelm{cmdName};
      \cmdNameElm[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
    • \cmdmthoparelm{cmdElm}[NewName];
      \cmdElmElm[sub][sub][par] =  $NewName_{sub}^{sub}[par]$ 
611 \newcommandx{\cmdmthoparelm}[2][2=]
612   {\usrmth{#1}{Elm}{oparelm}[#2]}

```

```

613 %%*****%

\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

614 \newcommandx{\cmdmthsymelm}[2][2=]
615   {\cmdmthsym{#1}[#2]}
616   \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

617 \newcommandx{\cmdmthargsymelm}[2][2=]
618   {\cmdmthargsym{#1}[#2]}
619   \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)

620 \newcommandx{\cmdmthoargsymelm}[2][2=]
621   {\cmdmthoargsym{#1}[#2]}
622   \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

623 \newcommandx{\cmdmthparsymelm}[2][2=]
624   {\cmdmthparsym{#1}[#2]}
625   \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]

626 \newcommandx{\cmdmthoparsymelm}[2][2=]
627   {\cmdmthoparsym{#1}[#2]}
628   \cmdmthoparelm{#1}[#2]}

629 %%*****%

\mthluop, ... ... to do!

```

- $\backslash\mathrm{mthluop}\{\backslash\mathrm{oplus}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \oplus_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext}$
- $\backslash\mathrm{mthlbop}\{\backslash\mathrm{oplus}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \oplus_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext}$

630 %% Style for \LaTeX Operators

631 $\backslash\mathrm{cmdmth}\{\mathrm{luop}\}\backslash\mathrm{newcommand}\{\mathrm{mthstyluop}\}[1]\{\textstyle\mathop{\mathrm{\#1}}\}$

632 $\backslash\mathrm{cmdmth}\{\mathrm{lbop}\}\backslash\mathrm{newcommand}\{\mathrm{mthstylbop}\}[1]\{\textstyle\mathbin{\mathrm{\#1}}\}$

$\backslash\mathrm{cmdmthluop}$, to do!

- $\backslash\mathrm{cmdmthluop}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameUOp}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$
- $\backslash\mathrm{cmdmthluop}\{\mathrm{cmdName}\}[\backslash\mathrm{oplus}];$
 $\backslash\mathrm{cmdNameUOp}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \oplus_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$
- $\backslash\mathrm{cmdmthlbop}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameBOp}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$
- $\backslash\mathrm{cmdmthlbop}\{\mathrm{cmdName}\}[\backslash\mathrm{oplus}];$
 $\backslash\mathrm{cmdNameBOp}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \oplus_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$

633 $\backslash\mathrm{newcommandx}\{\mathrm{cmdmthluop}\}[2][2=]$

634 $\{\backslash\mathrm{usrmth}\{\mathrm{\#1}\}\{\mathrm{UOp}\}\{\mathrm{luop}\}\{\mathrm{\#2}\}\}$

635 $\backslash\mathrm{newcommandx}\{\mathrm{cmdmthlbop}\}[2][2=]$

636 $\{\backslash\mathrm{usrmth}\{\mathrm{\#1}\}\{\mathrm{BOp}\}\{\mathrm{lbop}\}\{\mathrm{\#2}\}\}$

$\backslash\mathrm{mthlrel}$... to do!

- $\backslash\mathrm{mthlrel}\{\backslash\mathrm{preceq}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \preceq_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext}$

637 %% Style for \LaTeX Relations

638 $\backslash\mathrm{cmdmth}\{\mathrm{lrel}\}\backslash\mathrm{newcommand}\{\mathrm{mthstylrel}\}\{\mathrm{mathrel}\}$

$\backslash\mathrm{cmdmthlrel}$... to do!

- $\backslash\mathrm{cmdmthlrel}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameRel}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$
- $\backslash\mathrm{cmdmthlrel}\{\mathrm{cmdName}\}[\backslash\mathrm{preceq}];$
 $\backslash\mathrm{cmdNameRel}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \preceq_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$

639 $\backslash\mathrm{newcommandx}\{\mathrm{cmdmthlrel}\}[2][2=]$

640 $\{\backslash\mathrm{usrmth}\{\mathrm{\#1}\}\{\mathrm{Rel}\}\{\mathrm{lrel}\}\{\mathrm{\#2}\}\}$

641 %%

$\backslash\mathrm{mthsnt}$, to do!

- $\backslash\mathrm{mthsnt}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext}$
- $\backslash\mathrm{mthargsnt}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}][\mathrm{Arg}][\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext1}(\mathrm{Arg})\mathrm{Ext2}$
- $\backslash\mathrm{mthparsnt}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}][\mathrm{Par}][\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}} \mathrm{Ext1}[\mathrm{Par}]\mathrm{Ext2}$

642 %% Style for Sentences

643 $\backslash\mathrm{cmdmthall}\{\mathrm{snt}\}\backslash\mathrm{newcommand}\{\mathrm{mthstysnt}\}\{\mathrm{mathsf}\}$

$\backslash\mathrm{aSnt}$, 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, $\Gamma, \Delta, E, Z, H, \Theta, \varnothing, I, K, \Lambda, M, N, \Xi, O, \Pi, \textit{II}, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$

644 $\backslash\mathrm{seqoflet}\{\mathrm{Snt}\}\{\mathrm{mthsnt}\}$

$\backslash\mathrm{cmdmthsnt}$... to do!

- $\backslash\mathrm{cmdmthsnt}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSnt}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$
- $\backslash\mathrm{cmdmthsnt}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSnt}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}} \mathrm{ext}$

645 $\backslash\mathrm{newcommandx}\{\mathrm{cmdmthsnt}\}[2][2=]$

646 $\{\backslash\mathrm{usrmth}\{\mathrm{\#1}\}\{\mathrm{Snt}\}\{\mathrm{snt}\}\{\mathrm{\#2}\}\}$

$\backslash\mathrm{cmdmthargsnt}$... to do!

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

647 `\newcommandx{\cmdmthargsnt}[2][2=]`
648 `{\usrmth{#1}{Snt}{argsnt}{#2}}`

`\cmdmthoargsnt` ... to do!

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

649 `\newcommandx{\cmdmthoargsnt}[2][2=]`
650 `{\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`

651 `\newcommandx{\cmdmthparsnt}[2][2=]`
652 `{\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]`

653 `\newcommandx{\cmdmthoparsnt}[2][2=]`
654 `{\usrmth{#1}{Snt}{oparsnt}{#2}}`

`\mthfrm, ...` ... to do!

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

655 `%% Style for Formulae`
656 `\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, o, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, F, G, H, Θ, I, K, K, A, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω

657 `\seqoflet{Frm}{mthfrm}`

`\cmdmthfrm` ... to do!

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

658 `\newcommandx{\cmdmthfrm}[2][2=]`
659 `{\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`

```

660 \newcommandx{\cmdmthargfrm}[2][2=]
661   {\usrmth{#1}{Frm}{argfrm}{#2}}

\cmdmthoargfrm ... to do!
  • \cmdmthoargfrm{cmdName};
    \cmdNameFrm[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
  • \cmdmthoargfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][arg] =  $NewName_{sub}^{sub}(arg)$ 
662 \newcommandx{\cmdmthoargfrm}[2][2=]
663   {\usrmth{#1}{Frm}{oargfrm}{#2}}

\cmdmthparfrm ... to do!
  • \cmdmthparfrm{cmdName};
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
  • \cmdmthparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
664 \newcommandx{\cmdmthparfrm}[2][2=]
665   {\usrmth{#1}{Frm}{parfrm}{#2}}

\cmdmthoparfrm ... to do!
  • \cmdmthoparfrm{cmdName};
    \cmdNameFrm[sub][sub][par] =  $cmdName_{sub}^{sub}[par]$ 
  • \cmdmthoparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][par] =  $NewName_{sub}^{sub}[par]$ 
666 \newcommandx{\cmdmthoparfrm}[2][2=]
667   {\usrmth{#1}{Frm}{oparfrm}{#2}}

668 %%*****%

\mthmat, ... ... to do!
  • \mthmat{Name}[sub][sup][Ext] =  $\mathbf{Name}_{sub}^{sup}Ext$ 
  • \mthargmat{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mthparmat{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1[Par]Ext2$ 
669 %% Style for Matrices
670 \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
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, T, \Phi, \Phi, X, \Psi, \Omega$ 
671 \seqoflet{Mat}{mthmat}

\cmdmthmat ... to do!
  • \cmdmthmat{cmdName};
    \cmdNameMat[sub][sub][ext] =  $\mathbf{cmdName}_{sub}^{sub}ext$ 
  • \cmdmthmat{cmdName}[NewName];
    \cmdNameMat[sub][sub][ext] =  $\mathbf{NewName}_{sub}^{sub}ext$ 
672 \newcommandx{\cmdmthmat}[2][2=]
673   {\usrmth{#1}{Mat}{mat}{#2}}

\cmdmthargmat ... to do!
  • \cmdmthargmat{cmdName};
    \cmdNameMat[sub][sub][ext1]{arg}[ext2] =  $\mathbf{cmdName}_{sub}^{sub}ext1(arg)ext2$ 
  • \cmdmthargmat{cmdName}[NewName];
    \cmdNameMat[sub][sub][ext1]{arg}[ext2] =  $\mathbf{NewName}_{sub}^{sub}ext1(arg)ext2$ 
674 \newcommandx{\cmdmthargmat}[2][2=]
675   {\usrmth{#1}{Mat}{argmat}{#2}}

```

```

\cmdmthoargmat ... to do!
    • \cmdmthoargmat{cmdName};
      \cmdNameMat[sub][sub][arg] = cmdNamesub(arg)
    • \cmdmthoargmat{cmdName}[NewName];
      \cmdNameMat[sub][sub][arg] = NewNamesub(arg)
676 \newcommandx{\cmdmthoargmat}[2][2=]
677   {\usrmth{#1}{Mat}{oargmat}{#2}}

\cmdmthparmat ... to do!
    • \cmdmthparmat{cmdName};
      \cmdNameMat[sub][sub][ext1]{par}[ext2] = cmdNamesubext1[par]ext2
    • \cmdmthparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub][ext1]{par}[ext2] = NewNamesubext1[par]ext2
678 \newcommandx{\cmdmthparmat}[2][2=]
679   {\usrmth{#1}{Mat}{parmat}{#2}}

\cmdmthoparmat ... to do!
    • \cmdmthoparmat{cmdName};
      \cmdNameMat[sub][sub][par] = cmdNamesub[par]
    • \cmdmthoparmat{cmdName}[NewName];
      \cmdNameMat[sub][sub][par] = NewNamesub[par]
680 \newcommandx{\cmdmthoparmat}[2][2=]
681   {\usrmth{#1}{Mat}{oparmat}{#2}}

\mthvec, ... ... to do!
    • \mthvec{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargvec{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparvec{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
682 %% Style for Vectors
683 \cmdmthall{vec}\newcommand{\mthstyvec}[1]{\boldsymbol{\mathit{#1}}}

\avec, ... ... to do!
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, o, 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
684 \seqoflet{Vec}{mthvec}

\cmdmthvec ... to do!
    • \cmdmthvec{cmdName};
      \cmdNameVec[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthvec{cmdName}[NewName];
      \cmdNameVec[sub][sub][ext] = NewNamesubsubext
685 \newcommandx{\cmdmthvec}[2][2=]
686   {\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
687 \newcommandx{\cmdmthargvec}[2][2=]
688   {\usrmth{#1}{Vec}{argvec}{#2}}

\cmdmthoargvec ... to do!
    • \cmdmthoargvec{cmdName};
      \cmdNameVec[sub][sub][arg] = cmdNamesub(arg)

```

- $\backslash\text{cmdmthoargvec}\{\text{cmdName}\}[\text{NewName}]$;
 $\backslash\text{cmdNameVec}[\text{sub}][\text{sub}][\text{arg}] = \text{NewName}_{\text{sub}}^{\text{sub}}(\text{arg})$

689 $\backslash\text{newcommandx}\{\backslash\text{cmdmthoargvec}\}[2][2=]$
690 $\{\backslash\text{usrmth}\{\#1\}\{\text{Vec}\}\{\text{oargvec}\}\{\#2\}\}$

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

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

691 $\backslash\text{newcommandx}\{\backslash\text{cmdmthparvec}\}[2][2=]$
692 $\{\backslash\text{usrmth}\{\#1\}\{\text{Vec}\}\{\text{parvec}\}\{\#2\}\}$

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

- $\backslash\text{cmdmthoparvec}\{\text{cmdName}\}$;
 $\backslash\text{cmdNameVec}[\text{sub}][\text{sub}][\text{par}] = \text{cmdName}_{\text{sub}}^{\text{sub}}[\text{par}]$
- $\backslash\text{cmdmthoparvec}\{\text{cmdName}\}[\text{NewName}]$;
 $\backslash\text{cmdNameVec}[\text{sub}][\text{sub}][\text{par}] = \text{NewName}_{\text{sub}}^{\text{sub}}[\text{par}]$

693 $\backslash\text{newcommandx}\{\backslash\text{cmdmthoparvec}\}[2][2=]$
694 $\{\backslash\text{usrmth}\{\#1\}\{\text{Vec}\}\{\text{oparvec}\}\{\#2\}\}$

695 $\backslash\text{fi}$
696 $\%*****\%$
697 $\%*****\%$
698 $\%** \text{Elementary Macros for Text} *****\%$
699 $\%*****\%$
700 $\backslash\text{iftext@}$
701 $\%** \text{Latin Abbreviations} *****\%$

$\backslash\text{adhoc}$ • $\backslash\text{adhoc} = \text{ad hoc}$

702 $\backslash\text{cmdtxtabr}\{\text{adhoc}\}[\text{ad hoc}]$

$\backslash\text{afortiori}$ • $\backslash\text{afortiori} = \text{a fortiori}$

703 $\backslash\text{cmdtxtabr}\{\text{afortiori}\}[\text{a fortiori}]$

$\backslash\text{apriori}$ • $\backslash\text{apriori} = \text{a priori}$

704 $\backslash\text{cmdtxtabr}\{\text{apriori}\}[\text{a priori}]$

$\backslash\text{aposteriori}$ • $\backslash\text{aposteriori} = \text{a posteriori}$

705 $\backslash\text{cmdtxtabr}\{\text{aposteriori}\}[\text{a posteriori}]$

$\backslash\text{cf}$ • $\backslash\text{cf} = \text{cf.}$

706 $\backslash\text{cmdtxtabr}\{\text{cf}\}[\text{cf.}]$

$\backslash\text{dedicto}$ • $\backslash\text{dedicto} = \text{de dicto}$

707 $\backslash\text{cmdtxtabr}\{\text{dedicto}\}[\text{de dicto}]$

$\backslash\text{defacto}$ • $\backslash\text{defacto} = \text{de facto}$

708 $\backslash\text{cmdtxtabr}\{\text{defacto}\}[\text{de facto}]$

$\backslash\text{dere}$ • $\backslash\text{dere} = \text{de re}$

709 $\backslash\text{cmdtxtabr}\{\text{dere}\}[\text{de re}]$

$\backslash\text{divideetimpera}$ • $\backslash\text{divideetimpera} = \text{divide et impera}$

710 $\backslash\text{cmdtxtabr}\{\text{divideetimpera}\}[\text{divide et impera}]$

$\backslash\text{eg}$ • $\backslash\text{eg} = \text{e.g.}$

711 $\backslash\text{cmdtxtabr}\{\text{eg}\}[\text{e.g.}]$

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

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

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

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

`\etc` • `\etc = etc.`
716 `\cmdtxtabr{etc}[etc.]`

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

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

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

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

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

`\vs` • `\vs = vs.`
722 `\cmdtxtabr{vs}[vs.]`

`\viz` • `\viz = viz.`
723 `\cmdtxtabr{viz}[viz.]`
724 `%%*****%`

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

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

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

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

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

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

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

`\Eg` • `\Eg = E.g.`

732 `\cmdtxtabr{Eg}[E.g.]`

`\Errata` • `\Errata = Errata`

733 `\cmdtxtabr{Errata}`

`\Erratum` • `\Erratum = Erratum`

734 `\cmdtxtabr{Erratum}`

`\Mutatismutandis` • `\Mutatismutandis = Mutatis mutandis`

735 `\cmdtxtabr{Mutatismutandis}[Mutatis mutandis]`

`\Percontra` • `\Percontra = Per contra`

736 `\cmdtxtabr{Percontra}[Per contra]`

`\Primafacie` • `\Primafacie = Prima facie`

737 `\cmdtxtabr{Primafacie}[Prima facie]`

`\Viceversa` • `\Viceversa = Vice versa`

738 `\cmdtxtabr{Viceversa}[Vice versa]`

739 `%%** Italian Abbreviations *****%`

...

740 `%%*****%`

...

741 `%%** French Abbreviations *****%`

`\naif` • `\naif = naïf`

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

`\naive` • `\naive = naïve`

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

`\role` • `\role = rôle`

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

745 `%%*****%`

`\Role` • `\Role = Rôle`

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

747 `%%** English Abbreviations *****%`

`\aka` • `\aka = a.k.a.`

748 `\cmdtxtabr{aka}[a.k.a.]`

`\contd` • `\contd = contd.`

749 `\cmdtxtabr{contd}[contd.]`

`\iff` • `\iff = iff`

750 `\cmdtxtabr{iff}`

`\stx` • `\stx = s.t.`

751 `\cmdtxtabr{stx}[s.t.]`

`\resp` • `\resp = resp.`

752 `\cmdtxtabr{resp}[resp.]`

```

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

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

755 %%*****

\Contd    • \Contd = Contd.
756 \cmdtxtabr{Contd}[Contd.]

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

758 \fi
759 %%*****

760 %%*****
761 %%** Elementary Macros for Math *****
762 %%*****
763 \ifmath@
764 %%** General Notation *****

```

```

\defeq, \seteq ...
765 \DeclareRobustCommand{\defeq}
766   {\@ifstar%
767     {\mthlbop{\stackrel{\text{\textup{def}}}{=}}}%
768     {\mthlbop{\triangleq}}}
769 \DeclareRobustCommand{\seteq}
770   {\@ifstar{\mthlbop{:=}}{\mthlbop{=:}}}
771 %%*****

```

```

\implies, ... ...
772 \DeclareRobustCommand{\implies}
773   {\mthlrel{\rightarrow}}
774 \DeclareRobustCommand{\notimplies}
775   {\mthlrel{\not\rightarrow}}

```

```

\implied, ... ...
776 \DeclareRobustCommand{\implied}
777   {\mthlrel{\leftarrow}}
778 \DeclareRobustCommand{\notimplied}
779   {\mthlrel{\not\leftarrow}}

```

```

\coimplies, ... ...
780 \DeclareRobustCommand{\coimplies}
781   {\mthlrel{\Leftrightarrow}}
782 \DeclareRobustCommand{\notcoimplies}
783   {\mthlrel{\not\Leftrightarrow}}
784 %%*****

```

```

\cmodels, ... ...
785 \DeclareRobustCommand{\cmodels}
786   {\mthlrel{\models}}
787 \DeclareRobustCommand{\notcmodels}
788   {\mthlrel{\not\models}}

```

```

\cequiv, ... ...
789 \DeclareRobustCommand{\cequiv}
790   {\mthlrel{\equiv}}
791 \DeclareRobustCommand{\notcequiv}
792   {\mthlrel{\not\equiv}}

```

```

793 %%*****%

\denot ...
794 \DeclareRobustCommand{\denot}
795   {\@ifstar{\@denot}{\@denot[\left][\right]}}
796 \DeclareRobustCommandx{\@denot}[3][1=, 2=]
797   {\mth{\argmid{#1\lbracket}{#3}{#2\rrbracket}}}

798 %%*****%

\dual, \adj, ... ...
799 \DeclareRobustCommand{\dual}[1]
800   {\mth{\overline{#1}}}
801 \DeclareRobustCommand{\adj}[1]
802   {\mth{\mathring{#1}}}
803 \DeclareRobustCommand{\der}[1]
804   {\mth{\widehat{#1}}}
805 \DeclareRobustCommand{\trn}[1]
806   {\mth{\widetilde{#1}}}

\vec ...
807 \DeclareRobustCommand{\vec}
808   {\@ifstar{\@svec}{\@vec}}
809 \DeclareRobustCommand{\@vec}[1]
810   {\mth{\mathaccent"017E{#1}}}
811 \DeclareRobustCommand{\@svec}[1]
812   {\mth{\overline{#1}}}

813 %%*****%

\enumeration, ... ...
814 \varcmd{enumeration}{\mth}{\{,\}{}}
815 \varcmd{enumerationx}{\mth}{\{;\}{}}

\sequence, ... ...
816 \varcmd{sequence}{\mth}{\left[\{,\}{\right]}\{ }
817 \varcmd{sequence1}{\mth}{\left[\{,\}{\right.}\{ }
818 \varcmd{sequencer}{\mth}{\left.\{,\}{\right]}\{ }
819 \varcmd{sequencex}{\mth}{\left[\{;\}{\right]}\{ }
820 \varcmd{sequencexl}{\mth}{\left[\{;\}{\right.}\{ }
821 \varcmd{sequencexr}{\mth}{\left.\{;\}{\right]}\{ }

\tuple, ... ...
822 \varcmd{tuple}{\mth}{\left\langle\{,\}{\right\rangle}\{ }
823 \varcmd{tuple1}{\mth}{\left\langle\{,\}{\right.}\{ }
824 \varcmd{tupler}{\mth}{\left.\{,\}{\right\rangle}\{ }
825 \varcmd{tuplex}{\mth}{\left\langle\{;\}{\right\rangle}\{ }
826 \varcmd{tuplexl}{\mth}{\left\langle\{;\}{\right.}\{ }
827 \varcmd{tuplexr}{\mth}{\left.\{;\}{\right\rangle}\{ }

828 %%** Sets *****%

\set, ... ...
829 \DeclareRobustCommand{\set}
830   {\@ifstar{\@set}{\@set[\left][\middle][\right]}}
831 \DeclareRobustCommandx{\@set}[5][1=, 2=, 3=]
832   {\mth{\argmid{#1\lbrace}{\argsep{#4}{\,,#2\vert\,}{#5}}{#3\rbrace}}}
833 \DeclareRobustCommand{\set1}
834   {\@ifstar{\@set1}{\@set1[\left][\right]}}
835 \DeclareRobustCommandx{\@set1}[3][1=, 2=]
836   {\mth{\argmid{#1\lbrace}{#3}{\,,#2\vert\!}}\{ }
837 \DeclareRobustCommand{\setr}
838   {\@ifstar{\@setr}{\@setr[\left.][\right]}}
839 \DeclareRobustCommandx{\@setr}[3][1=, 2=]
840   {\mth{\argmid{#1}{#3}{#2\rbrace}}}

```

```

\card ...
841 \DeclareRobustCommand{\card}
842   {\@ifstar{\@card}{\@card[\left][\right]}}
843 \DeclareRobustCommandx{\@card}[3][1=, 2=]
844   {\mth{\argmid{#1\lvert}{#3}{#2\rvert}}}

\pow ...
845 \DeclareRobustCommand{\pow}[1]
846   {\mth{2^{\defval{#1}{\cdot}}}}

847 %%** Relations *****%%

\emptyrel ...
848 \DeclareRobustCommand{\emptyrel}
849   {\mth{\varnothing}}

850 %%*****%%

\dom, \cod, ... ...
851 \DeclareRobustCommand{\dom}
852   {\mthargfun{dom}}
853 \DeclareRobustCommand{\cod}
854   {\mthargfun{cod}}
855 \DeclareRobustCommand{\rng}
856   {\mthargfun{rng}}
857 \DeclareRobustCommand{\img}
858   {\mthargfun{img}}

859 %%*****%%

\prj ...
860 \DeclareRobustCommand{\prj}
861   {\mthargfun{prj}}

\rst ...
862 \DeclareRobustCommand{\rst}
863   {\mthlbop{\upharpoonright}}

\cmp ...
864 \DeclareRobustCommand{\cmp}
865   {\mthlbop{\circ}}

866 %%** Functions *****%%

\emptyfun ...
867 \DeclareRobustCommand{\emptyfun}
868   {\mth{\varnothing}}

869 %%*****%%

\pto, \pmapsto ...
870 \DeclareMathOperator{\pto}
871   {\ensuremath{\rightharpoonup}}
872 \DeclareMathOperator{\pmapsto}
873   {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize$\llcorner$}}}%
874     \kern-1.5ex\rightharpoonup}}

875 %%*****%%

```

```

\fix, \ifp, ... ...
876 \DeclareRobustCommand{\fix}
877   {\mthfun{fix}}
878 \DeclareRobustCommand{\ifp}
879   {\mthfun{ifp}}
880 \DeclareRobustCommand{\lfp}
881   {\mthfun{lfp}}
882 \DeclareRobustCommand{\gfp}
883   {\mthfun{gfp}}
884 %%*****%

\Aomega, \AOmega ...
885 \DeclareRobustCommand{\Aomega}
886   {\mthargset{\omega}}
887 \DeclareRobustCommand{\AOmega}
888   {\mthargset{\Omega}}

\Atheta, \ATheta ...
889 \DeclareRobustCommand{\Atheta}
890   {\mthargset{\theta}}
891 \DeclareRobustCommand{\ATheta}
892   {\mthargset{\Theta}}

\Aomicron, ... ...
893 \DeclareRobustCommand{\Aomicron}
894   {\mthargset{\omicron}}
895 \DeclareRobustCommand{\AOmicron}
896   {\mthargset{\Omicron}}
897 %%** Numbers *****%

\SetB ...
898 \DeclareRobustCommand{\SetB}
899   {\mthset[mathbb]{B}}

\SetF ...
900 \DeclareRobustCommand{\SetF}
901   {\mthset[mathbb]{F}}

\SetN, ... ...
902 \DeclareRobustCommand{\SetN}
903   {\mthset[mathbb]{N}}
904 \DeclareRobustCommand{\SetNI}[1] []
905   {\SetN[\infty #1]}

\SetZ, ... ...
906 \DeclareRobustCommand{\SetZ}
907   {\mthset[mathbb]{Z}}
908 \DeclareRobustCommand{\SetZI}[1] []
909   {\SetZ[\pm\infty #1]}
910 \DeclareRobustCommand{\SetZPI}[1] []
911   {\SetZ[+\infty #1]}
912 \DeclareRobustCommand{\SetZNI}[1] []
913   {\SetZ[-\infty #1]}

\SetQ, ... ...
914 \DeclareRobustCommand{\SetQ}
915   {\mthset[mathbb]{Q}}
916 \DeclareRobustCommand{\SetQI}[1] []
917   {\SetQ[\pm\infty #1]}
918 \DeclareRobustCommand{\SetQPI}[1] []
919   {\SetQ[+\infty #1]}
920 \DeclareRobustCommand{\SetQNI}[1] []
921   {\SetQ[-\infty #1]}

```

```

\SetR, ... ...
922 \DeclareRobustCommand{\SetR}
923   {\mthset[\mathbb]{R}}
924 \DeclareRobustCommand{\SetRI}[1] []
925   {\SetR[\pm\infty #1]}
926 \DeclareRobustCommand{\SetRPI}[1] []
927   {\SetR[+\infty #1]}
928 \DeclareRobustCommand{\SetRNI}[1] []
929   {\SetR[-\infty #1]}

\SetC, ... ...
930 \DeclareRobustCommand{\SetC}
931   {\mthset[\mathbb]{C}}
932 \DeclareRobustCommand{\SetCI}[1] []
933   {\SetC[\infty #1]}

934 %%*****%

\num, ... ...
935 \DeclareRobustCommand{\num}[1]
936   {\mth{[#1]}}
937 \DeclareRobustCommand{\numcc}[2]
938   {\mth{[\argsep{#1}{,}{#2}]}}
939 \DeclareRobustCommand{\numco}[2]
940   {\mth{[\argsep{#1}{,}{#2})}}
941 \DeclareRobustCommand{\numoc}[2]
942   {\mth{(\argsep{#1}{,}{#2}]}}
943 \DeclareRobustCommand{\numoo}[2]
944   {\mth{(\argsep{#1}{,}{#2})}}

945 %%*****%

\abs ...
946 \DeclareRobustCommand{\abs}
947   {\@ifstar{\@abs}{\@abs[\left][\right]}}
948 \DeclareRobustCommandx{\@abs}[3][1=, 2=]
949   {\mth{\argmid{#1\lvert}{#3}{#2\rvert}}}

\floor, \ceil ...
950 \DeclareRobustCommand{\floor}
951   {\@ifstar{\@floor}{\@floor[\left][\right]}}
952 \DeclareRobustCommandx{\@floor}[3][1=, 2=]
953   {\mth{\argmid{#1\lfloor}{#3}{#2\rfloor}}}
954 \DeclareRobustCommand{\ceil}
955   {\@ifstar{\@ceil}{\@ceil[\left][\right]}}
956 \DeclareRobustCommandx{\@ceil}[3][1=, 2=]
957   {\mth{\argmid{#1\lceil}{#3}{#2\rceil}}}

958 %%*****%

\arg ...
959 \DeclareRobustCommand{\arg}
960   {\mthfun{arg}}

\evn, \odd ...
961 \DeclareRobustCommand{\evn}
962   {\mthfun{evn}}
963 \DeclareRobustCommand{\odd}
964   {\mthfun{odd}}

\bst, ... ...
965 \DeclareRobustCommand{\bst}
966   {\mthfun{bst}}
967 \DeclareRobustCommand{\argbst}
968   {\mthfun{arg bst}}

```

```

\min, \max, ... ...
969 \DeclareRobustCommand{\min}
970   {\mthfun{min}}
971 \DeclareRobustCommand{\max}
972   {\mthfun{max}}
973 \DeclareRobustCommand{\argmin}
974   {\mthfun{arg min}}
975 \DeclareRobustCommand{\argmax}
976   {\mthfun{arg max}}

\inf, \sup ...
977 \DeclareRobustCommand{\inf}
978   {\mthfun{inf}}
979 \DeclareRobustCommand{\sup}
980   {\mthfun{sup}}

981 %** Sequences *****%%

\emptyseq ...
982 \DeclareRobustCommand{\emptyseq}
983   {\mth{\varepsilon}}

\fst, \lst ...
984 \DeclareRobustCommand{\fst}
985   {\mthargfun{fst}}
986 \DeclareRobustCommand{\lst}
987   {\mthargfun{lst}}

988 \fi
989 %*****%%
990 %*****%%
991 %** Macros for Computational-Complexity Classes *****%%
992 %*****%%
993 \ifcom@

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

    \CompClass[sub][sup][ext] = COMPCLASSSUBEXT
    \CoCompClass[sub][sup][ext] = CoCOMPCLASSSUBEXT
    \CompClassE[sub][sup][ext] = COMPCLASS-EASYSUBEXT
    \CoCompClassE[sub][sup][ext] = CoCOMPCLASS-EASYSUBEXT
    \CompClassH[sub][sup][ext] = COMPCLASS-HARDSUBEXT
    \CoCompClassH[sub][sup][ext] = CoCOMPCLASS-HARDSUBEXT
    \CompClassC[sub][sup][ext] = COMPCLASS-COMPLETESUBEXT
    \CoCompClassC[sub][sup][ext] = CoCOMPCLASS-COMPLETESUBEXT

    \NCompClass[sub][sup][ext] = NCOMPCLASSSUBEXT
    \CoNCompClass[sub][sup][ext] = CoNCOMPCLASSSUBEXT
    \NCompClassE[sub][sup][ext] = NCOMPCLASS-EASYSUBEXT
    \CoNCompClassE[sub][sup][ext] = CoNCOMPCLASS-EASYSUBEXT
    \NCompClassH[sub][sup][ext] = NCOMPCLASS-HARDSUBEXT
    \CoNCompClassH[sub][sup][ext] = CoNCOMPCLASS-HARDSUBEXT
    \NCompClassC[sub][sup][ext] = NCOMPCLASS-COMPLETESUBEXT
    \CoNCompClassC[sub][sup][ext] = CoNCOMPCLASS-COMPLETESUBEXT

    \UCompClass[sub][sup][ext] = UCOMPCLASSSUBEXT
    \CoUCompClass[sub][sup][ext] = CoUCOMPCLASSSUBEXT
    \UCompClassE[sub][sup][ext] = UCOMPCLASS-EASYSUBEXT
    \CoUCompClassE[sub][sup][ext] = CoUCOMPCLASS-EASYSUBEXT
    \UCompClassH[sub][sup][ext] = UCOMPCLASS-HARDSUBEXT
    \CoUCompClassH[sub][sup][ext] = CoUCOMPCLASS-HARDSUBEXT
    \UCompClassC[sub][sup][ext] = UCOMPCLASS-COMPLETESUBEXT

```



```

\CoUCompClassC[sub][sup][ext] = CoUCompClass-COMPLETESUPSUBEXT

\ACompClass[sub][sup][ext] = ACompClassSUPSUBEXT
\CoACompClass[sub][sup][ext] = CoACompClassSUPSUBEXT
\ACompClassE[sub][sup][ext] = ACompClass-EASYSUPSUBEXT
\CoACompClassE[sub][sup][ext] = CoACompClass-EASYSUPSUBEXT
\ACompClassH[sub][sup][ext] = ACompClass-HARDSUPSUBEXT
\CoACompClassH[sub][sup][ext] = CoACompClass-HARDSUPSUBEXT
\ACompClassC[sub][sup][ext] = ACompClass-COMPLETESUPSUBEXT
\CoACompClassC[sub][sup][ext] = CoACompClass-COMPLETESUPSUBEXT

• \defcomcls{CompClass}[NewClass];

\CompClass[sub][sup][ext] = NewClassSUPSUBEXT
\CoCompClass[sub][sup][ext] = CoNewClassSUPSUBEXT
\CompClassE[sub][sup][ext] = NewClass-EASYSUPSUBEXT
\CoCompClassE[sub][sup][ext] = CoNewClass-EASYSUPSUBEXT
\CompClassH[sub][sup][ext] = NewClass-HARDSUPSUBEXT
\CoCompClassH[sub][sup][ext] = CoNewClass-HARDSUPSUBEXT
\CompClassC[sub][sup][ext] = NewClass-COMPLETESUPSUBEXT
\CoCompClassC[sub][sup][ext] = CoNewClass-COMPLETESUPSUBEXT

\NCompClass[sub][sup][ext] = NNewClassSUPSUBEXT
\CoNCompClass[sub][sup][ext] = CoNNewClassSUPSUBEXT
\NCompClassE[sub][sup][ext] = NNewClass-EASYSUPSUBEXT
\CoNCompClassE[sub][sup][ext] = CoNNewClass-EASYSUPSUBEXT
\NCompClassH[sub][sup][ext] = NNewClass-HARDSUPSUBEXT
\CoNCompClassH[sub][sup][ext] = CoNNewClass-HARDSUPSUBEXT
\NCompClassC[sub][sup][ext] = NNewClass-COMPLETESUPSUBEXT
\CoNCompClassC[sub][sup][ext] = CoNNewClass-COMPLETESUPSUBEXT

\UCompClass[sub][sup][ext] = UNewClassSUPSUBEXT
\CoUCompClass[sub][sup][ext] = CoUNewClassSUPSUBEXT
\UCompClassE[sub][sup][ext] = UNewClass-EASYSUPSUBEXT
\CoUCompClassE[sub][sup][ext] = CoUNewClass-EASYSUPSUBEXT
\UCompClassH[sub][sup][ext] = UNewClass-HARDSUPSUBEXT
\CoUCompClassH[sub][sup][ext] = CoUNewClass-HARDSUPSUBEXT
\UCompClassC[sub][sup][ext] = UNewClass-COMPLETESUPSUBEXT
\CoUCompClassC[sub][sup][ext] = CoUNewClass-COMPLETESUPSUBEXT

\ACompClass[sub][sup][ext] = ANewClassSUPSUBEXT
\CoACompClass[sub][sup][ext] = CoANewClassSUPSUBEXT
\ACompClassE[sub][sup][ext] = ANewClass-EASYSUPSUBEXT
\CoACompClassE[sub][sup][ext] = CoANewClass-EASYSUPSUBEXT
\ACompClassH[sub][sup][ext] = ANewClass-HARDSUPSUBEXT
\CoACompClassH[sub][sup][ext] = CoANewClass-HARDSUPSUBEXT
\ACompClassC[sub][sup][ext] = ANewClass-COMPLETESUPSUBEXT
\CoACompClassC[sub][sup][ext] = CoANewClass-COMPLETESUPSUBEXT

994 \newcommandx{\defcomcls}[2][2=]
995   {\defcomclssem{#1}{\defval{#2}{#1}}%
996   \defcomclssem{#1}{\defval{#2}{#1}}[Co]}
997 \newcommandx{\defcomclssem}[3][3=]
998   {\defcomclsred{#3#1}{#2}{#3}%
999   \defcomclsred{#3N#1}{#2}{#3N}%
1000   \defcomclsred{#3U#1}{#2}{#3U}%
1001   \defcomclsred{#3A#1}{#2}{#3A}}
1002 \newcommandx{\defcomclsred}[3][3=]
1003   {\defcomclscmd{#1}{#2}{#3}%
1004   \defcomclscmd{#1E}{#2}{#3}[-easy]%
1005   \defcomclscmd{#1H}{#2}{#3}[-hard]%
1006   \defcomclscmd{#1C}{#2}{#3}[-complete]]%
1007 \newcommandx{\defcomclscmd}[4][3=, 4=]
1008   {\csdef{#1}{\txtcom{#3#2#4}}}

```

\defcomhrc ... to do!

- $\backslash\text{defcomhrc}\{\text{CompHierarchy}\};$
 $\text{CompHierarchy}[\text{sub}][\text{sup}][\text{ext}] = \text{COMPHIERARCHY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash\text{defcomhrc}\{\text{CompHierarchy}\}[\text{NewHierarchy}];$
 $\text{CompHierarchy}[\text{sub}][\text{sup}][\text{ext}] = \text{NEWHIERARCHY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

```
1009 \newcommandx{\defcomhrc}[2][2=]
1010 {\csdef{#1}{\txtcom{\defval{#2}{#1}}}}
1011 %%*****%
```

$\backslash\text{Easy}, \backslash\text{Hard}, \dots$

```
1012 \cmdtxtcom{Easy}
1013 \cmdtxtcom{Hard}
1014 \cmdtxtcom{Complete}
1015 %%*****%
```

- $\backslash\text{Time}, \dots$
- $\backslash\text{Time}[\text{sub}][\text{sup}][\text{ext}] = \text{TIME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{TimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{TIME-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{TimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{TIME-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{TimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{TIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{NTime}[\text{sub}][\text{sup}][\text{ext}] = \text{NTIME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NTimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{NTIME-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NTimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{NTIME-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NTimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{NTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{UTime}[\text{sub}][\text{sup}][\text{ext}] = \text{UTIME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{UTimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{UTIME-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{UTimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{UTIME-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{UTimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{UTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{ATime}[\text{sub}][\text{sup}][\text{ext}] = \text{ATIME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ATimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{ATIME-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ATimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{ATIME-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ATimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{ATIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

```
1016 \defcomcls{Time}
```

- $\backslash\text{Space}, \dots$
- $\backslash\text{Space}[\text{sub}][\text{sup}][\text{ext}] = \text{SPACE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{SpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{SPACE-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{SpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{SPACE-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{SpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{SPACE-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{NSpace}[\text{sub}][\text{sup}][\text{ext}] = \text{NSPACE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NSpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{NSPACE-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NSpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{NSPACE-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{NSpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{NSPACE-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{USpace}[\text{sub}][\text{sup}][\text{ext}] = \text{USPACE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{USpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{USPACE-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{USpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{USPACE-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{USpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{USPACE-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 - $\backslash\text{ASpace}[\text{sub}][\text{sup}][\text{ext}] = \text{ASPACE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ASpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{ASPACE-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ASpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{ASPACE-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{ASpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{ASPACE-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

```
1017 \defcomcls{Space}
```

- $\backslash\text{LogTime}, \dots$
- $\backslash\text{LogTime}[\text{sub}][\text{sup}][\text{ext}] = \text{LOGTIME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{LogTimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{LOGTIME-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{LogTimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{LOGTIME-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
 $\backslash\text{LogTimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{LOGTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

- $\backslash \text{ExpTime}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpTime}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpTimeE}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpTime-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpTimeH}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpTime-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpTimeC}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpTime-COMplete}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

1024 $\backslash \text{defcomcls}\{\text{ExpTime}\}$

$\backslash \text{ExpSpace}, \dots$

- $\backslash \text{ExpSpace}[\text{sub}][\text{sup}][\text{ext}] = \text{ExpSpace}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpSpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{ExpSpace-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpSpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{ExpSpace-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{ExpSpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{ExpSpace-COMplete}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{NExpSpace}[\text{sub}][\text{sup}][\text{ext}] = \text{NExpSpace}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{NExpSpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{NExpSpace-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{NExpSpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{NExpSpace-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{NExpSpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{NExpSpace-COMplete}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{UExpSpace}[\text{sub}][\text{sup}][\text{ext}] = \text{UExpSpace}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{UExpSpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{UExpSpace-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{UExpSpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{UExpSpace-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{UExpSpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{UExpSpace-COMplete}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{AExpSpace}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpSpace}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{AExpSpaceE}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpSpace-EASY}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{AExpSpaceH}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpSpace-HARD}_{\text{SUB}}^{\text{SUP}}\text{EXT}$
- $\backslash \text{AExpSpaceC}[\text{sub}][\text{sup}][\text{ext}] = \text{AExpSpace-COMplete}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

1025 $\backslash \text{defcomcls}\{\text{ExpSpace}\}$

1026 $\%*****\%$

$\backslash \text{PH}$ • $\backslash \text{PH}[\text{sub}][\text{sup}][\text{ext}] = \text{PH}_{\text{SUB}}^{\text{SUP}}\text{EXT}$

1027 $\backslash \text{defcomhrc}\{\text{PH}\}$

...

1028 $\backslash \text{fi}$

1029 $\%*****\%$

1030 $\%*****\%$

1031 $\%** \text{ Macros for Games }*****\%$

1032 $\%*****\%$

1033 $\backslash \text{ifgam@}$

1034 $\%** \text{ Logic Games }*****\%$

$\backslash \text{SATG}, \dots$

1035 $\% \text{ Satisfiability Games}$

1036 $\backslash \text{cmdtxtopname}\{\text{SATG}\}[\text{Sat}]$

1037

1038 $\% \text{ Validity Games}$

1039 $\backslash \text{cmdtxtopname}\{\text{VALG}\}[\text{Val}]$

1040

1041 $\% \text{ Evaluation Games}$

1042 $\backslash \text{cmdtxtopname}\{\text{EVLG}\}[\text{Evl}]$

1043

1044 $\% \text{ Synthesis Games}$

1045 $\backslash \text{cmdtxtopname}\{\text{SYNG}\}[\text{Syn}]$

1046

1047 $\% \text{ Model-Checking Games}$

1048 $\backslash \text{cmdtxtopname}\{\text{MCG}\}[\text{MC}]$

1049

1050 $\% \text{ Ehrenfeucht-Fraisse Games}$

1051 $\backslash \text{cmdtxtopname}\{\text{EFG}\}[\text{EF}]$

1052 $\%** \text{ Syntax }*****\%$

```

\PlrSym, \OppSym ...
1053 \newcommand{\plrSym}{E}
1054 \cmdmthsym{Plr}[\plrSym]
1055 \newcommand{\oppsym}{A}
1056 \cmdmthsym{Opp}[\oppsym]

\ArenaName, ... ...
1057 \newcommand{\arenaname}{A}
1058 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

\PosSet, ... ...
1059 \newcommand{\possym}{v}
1060 \newcommand{\posset}{Ps}
1061 \cmdmthsetext{Pos}[\posset][\possym]
1062 \cmdmthsymelm{ipos}[\possym_{I}]
1063 \cmdmthsymelm{fpos}[\possym_{F}]
1064 \cmdmthset{PPos}[\posset_{\PlrSym}]
1065 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1066 \cmdmthset{OPos}[\posset_{\OppSym}]
1067 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\PlrFun ...
1068 \newcommand{\plrFun}{pl}
1069 \cmdmthfun{plr}[\plrFun]

\MovRel ...
1070 \newcommand{\movrel}{Mv}
1071 \cmdmthrel{Mov}[\movrel]

\GameName, ... ...
1072 \newcommand{\gameName}{\Game}
1073 \usrmthlatupp{Game}{Name}{name}[\gameName]

\WinSet ...
1074 \newcommand{\winset}{Wn}
1075 \cmdmthset{Win}[\winset]

\ObsSet, \obsFun ...
1076 \newcommand{\obsset}{Ob}
1077 \cmdmthset{Obs}[\obsset]
1078 \cmdmthfun{obs}

1079 %%** Semantics *****%%

\PthSet, \pthFun ...
1080 \newcommand{\pthsym}{\pi}
1081 \newcommand{\pthset}{Pth}
1082 \cmdmthsetext{Pth}[\pthset][\pthsym]
1083 \cmdmthfun{pth}

\HstSet, ... ...
1084 \newcommand{\hstsym}{\rho}
1085 \newcommand{\hstset}{Hst}
1086 \cmdmthsetext{Hst}[\hstset][\hstsym]
1087 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1088 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1089 \cmdmthset{OHst}[\hstset_{\OppSym}]
1090 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1091 \cmdmthfun{hst}

```

```

\PlaySet, \playFun ...
1092 \newcommand{\playsym}{\pi}
1093 \newcommand{\playset}{Play}
1094 \cmdmthsetext{Play}[\playset][\playsym]
1095 \cmdmthfun{play}

\StrSet, ... ...
1096 \newcommand{\strsym}{\sigma}
1097 \newcommand{\strset}{Str}
1098 \cmdmthsetext{Str}[\strset][\strsym]
1099 \cmdmthset{PStr}[\strset_{\PlrSym}]
1100 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1101 \cmdmthset{OStr}[\strset_{\OppSym}]
1102 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1103 \newcommand{\prfsym}{\xi}
1104 \newcommand{\prfset}{Prf}
1105 \cmdmthsetext{Prf}[\prfset][\prfsym]

\preFun, \sucFun ...
1106 \newcommand{\prefun}{pre}
1107 \cmdmthoargfun{pre}[\prefun]
1108 \newcommand{\sucfun}{suc}
1109 \cmdmthoargfun{suc}[\sucfun]

\entFun, \escFun ...
1110 \newcommand{\entfun}{ent}
1111 \cmdmthoargfun{ent}[\entfun]
1112 \newcommand{\escfun}{esc}
1113 \cmdmthoargfun{esc}[\escfun]

\intFun, \outFun ...
1114 \newcommand{\intfun}{int}
1115 \cmdmthoargfun{int}[\intfun]
1116 \newcommand{\outfun}{out}
1117 \cmdmthoargfun{out}[\outfun]

\atrFun, \rchFun ...
1118 \newcommand{\atrfun}{atr}
1119 \cmdmthoargfun{atr}[\atrfun]
1120 \newcommand{\rchfun}{rch}
1121 \cmdmthoargfun{rch}[\rchfun]

\liftFun ...
1122 \newcommand{\liftfun}{lift}
1123 \cmdmthoargfun{lift}[\liftfun]

\solFun ...
1124 \newcommand{\solfun}{sol}
1125 \cmdmthoargfun{sol}[\solfun]

1126 %** Qualitative Games on Graph *****%

\BG, ... ...
1127 %% Buchi Games
1128 \cmdtxtoparname{BG}
1129
1130 %% Co-Buchi Games
1131 \cmdtxtoparname{CG}
1132
1133 %% Parity Games

```

```

1134 \cmdtxttoparname{PG}
1135
1136 %% Rabin Games
1137 \cmdtxttoparname{RG}
1138
1139 %% Streett Games
1140 \cmdtxttoparname{SG}
1141
1142 %% Muller Games
1143 \cmdtxttoparname{MG}

1144 %** Syntax *****%
```

\EvnSym, \OddSym ...

```

1145 \newcommand{\evnsym}{0}
1146 \cmdmthsym{Evnsym}[\evnsym]
1147 \newcommand{\oddsym}{1}
1148 \cmdmthsym{Oddsym}[\oddsym]
```

\PrtSet, \prtFun ...

```

1149 \newcommand{\prtsym}{p}
1150 \newcommand{\prtset}{Pr}
1151 \cmdmthsetext{Prt}[\prtset][\prtsym]
1152 \cmdmthfun{prt}[pr]
```

```

1153 %** Semantics *****%
```

...

```

1154 %** Quantitative Games on Graph *****%
```

\EG,

```

1155 %% Energy Games
1156 \cmdtxttoparname{EG}
1157
1158 %% Mean-Payoff Games
1159 \cmdtxttoparname{MPG}
1160
1161 %% Discounted-Payoff Games
1162 \cmdtxttoparname{DPG}
```

```

1163 %** Syntax *****%
```

\MaxSym, \MinSym ...

```

1164 \newcommand{\maxsym}{\oplus}
1165 \cmdmthsym{Max}[\maxsym]
1166 \newcommand{\minsym}{\boxminus}
1167 \cmdmthsym{Min}[\minsym]
```

\WghSet, \wghFun ...

```

1168 \newcommand{\wghsym}{w}
1169 \newcommand{\wghset}{Wg}
1170 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1171 \cmdmthfun{wgh}[wg]
```

```

1172 %** Semantics *****%
```

...

```

1173 \fi
1174 %*****%
```

```

1175 %*****%
```

```

1176 %** Macros for Logics *****%
```

```

1177 %*****%
```

```

1178 \iflog@
```


1179 %** Propositional Logics *****%

\BF, \QBF,

1180 % Boolean Formulae
 1181 \cmdtxttoparname{BF}
 1182
 1183 % Quantified Boolean Formulae
 1184 \DeclareRobustCommand{\QBF}
 1185 {\{\textname{Q}\}\BF}
 1186 \DeclareRobustCommand{\EBF}
 1187 {\ensuremath{\exists}\BF}
 1188 \DeclareRobustCommand{\UBF}
 1189 {\ensuremath{\forall}\BF}

1190 %** Syntax *****%

\LogSig,

1191 \newcommand{\logsig}{L}
 1192 \usrmthlatupp{Log}{Sig}{sig}[\logsig]

\Tt, \Ff

1193 \newcommand{\ttsym}{\top}
 1194 \usrmth{Tt}{\}{sym}[\ttsym]
 1195 \newcommand{\ffsym}{\bot}
 1196 \usrmth{Ff}{\}{sym}[\ffsym]

\LNeg, \LNot

1197 \newcommand{\lnegsym}{\neg}
 1198 \usrmth{LNeg}{\}{luop}[\lnegsym]
 1199 \newcommand{\lnotsym}{\sim}
 1200 \usrmth{LNot}{\}{luop}[\lnotsym]

\LCon, \LDis

1201 \newcommand{\lconsym}{\land}
 1202 \usrmth{LCon}{\}{lbop}[\lconsym]
 1203 \newcommand{\ldissym}{\lor}
 1204 \usrmth{LDis}{\}{lbop}[\ldissym]

\LImp, \LCoi

1205 \newcommand{\limpsym}{\rightarrow}
 1206 \usrmth{LImp}{\}{lbop}[\limpsym]
 1207 \newcommand{\lcoisym}{\leftrightarrow}
 1208 \usrmth{LCoi}{\}{lbop}[\lcoisym]

\LExs, \LAll

1209 \newcommand{\lexssym}{\exists}
 1210 \usrmth{LExs}{\}{luop}[\lexssym]
 1211 \newcommand{\lallsym}{\forall}
 1212 \usrmth{LAll}{\}{luop}[\lallsym]

\APSet,

1213 \newcommand{\apsym}{p}
 1214 \newcommand{\apset}{AP}
 1215 \cmdmthsetext{AP}[\apset][\apsym]
 1216 \cmdmthfun{ap}\usrmth{ap}{\}{argfun}

\sub

1217 \usrmth{sub}{\}{argfun}

\Cnt, \Qnt, \Sym

1218 \usrmth{Cnt}{\}{sym}[C]
 1219 \usrmth{Qnt}{\}{sym}[Q]
 1220 \usrmth{Sym}{\}{sym}[\odot]

```

\QAE, \QEA ...
1221 \usrmth{QAE}{-}{sym}[\forall\exists]
1222 \usrmth{QEA}{-}{sym}[\exists\forall]

\QntSet, ... ...
1223 \newcommand{\qntsym}{\wp}
1224 \newcommand{\qntset}{Qn}
1225 \cmdmthsetext{Qnt}{\qntset}[\qntsym]

\free, \bound ...
1226 \usrmth{free}{-}{argfun}
1227 \usrmth{bound}{-}{argfun}

\dep, \alt ...
1228 \usrmth{dep}{-}{argfun}
1229 \usrmth{alt}{-}{argfun}

\cnf, \dnf, ... ...
1230 \cmdtxtabr{cnf}
1231 \cmdtxtabr{dnf}
1232 \cmdtxtabr{pnf}
1233 \cmdtxtabr{nnf}

1234 %** Semantics *****%

\LogStr, ... ...
1235 \newcommand{\logstr}{L}
1236 \usrmthlatupp{Log}{Str}{str}[\logstr]

\ValSet, ... ...
1237 \newcommand{\valsym}{\xi}
1238 \newcommand{\valset}{Val}
1239 \cmdmthsetext{Val}{\valset}[\valsym]

\AsgSet, ... ...
1240 \newcommand{\asgsym}{\chi}
1241 \newcommand{\asgset}{Asg}
1242 \cmdmthsetext{Asg}{\asgset}[\asgsym]

1243 %** First-Order Logics I *****%

\FOL, ... ...
1244 % First-Order Logic
1245 \cmdtxtoparname{FOL}[Fol]
1246 \cmdtxtoparname{FO}[FO]
1247
1248 % Monadic First-Order Logic
1249 \DeclareRobustCommand{\MFOL}
1250   {\{\txtname{M}\}\FOL}
1251 \DeclareRobustCommand{\MFO}
1252   {\{\txtname{M}\}\FO}

1253 %** Syntax *****%

\VarSig, ... ...
1254 \newcommand{\varsig}{V}
1255 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
1256 \newcommand{\varsym}{x}
1257 \newcommand{\varset}{Vr}
1258 \cmdmthsetext{Var}{\varset}[\varsym]
1259 \usrmth{var}{-}{argfun}[vr]
1260 \cmdmthfun{dim}[dm]\usrmth{dim}{-}{argfun}[dm]

```

```

\ConSig, ... ...
1261 \newcommand{\consig}{C}
1262 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1263 \newcommand{\consym}{c}
1264 \newcommand{\conset}{Cn}
1265 \cmdmthsetext{Con}[\conset][\consym]
1266 \usrmth{con}{-}{argfun}[cn]

\FunSig, ... ...
1267 \newcommand{\funsig}{F}
1268 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1269 \newcommand{\funsym}{f}
1270 \newcommand{\funset}{Fn}
1271 \cmdmthsetext{Fun}[\funset][\funsym]
1272 \usrmth{fun}{-}{argfun}[fn]
1273 \cmdmthfun{art}[ar]\usrmth{art}{-}{argfun}[ar]

\TerSig, ... ...
1274 \newcommand{\tersig}{T}
1275 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1276 \newcommand{\tersym}{t}
1277 \newcommand{\terset}{Tr}
1278 \cmdmthsetext{Ter}[\terset][\tersym]
1279 \usrmth{ter}{-}{argfun}

\RelSig, ... ...
1280 \newcommand{\relsig}{R}
1281 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1282 \newcommand{\relsym}{r}
1283 \newcommand{\relset}{Rl}
1284 \cmdmthsetext{Rel}[\relset][\relsym]
1285 \usrmth{rel}{-}{argfun}[rl]

\skm ...
1286 \usrmth{skm}{-}{argfun}

1287 %** Semantics *****%%

\ConStr, ... ...
1288 \newcommand{\constr}{C}
1289 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr, ... ...
1290 \newcommand{\funstr}{F}
1291 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr, ... ...
1292 \newcommand{\terstr}{T}
1293 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr, ... ...
1294 \newcommand{\relstr}{R}
1295 \usrmthlatupp{Rel}{Str}{str}[\relstr]

1296 %** First-Order Logics II *****%%

\DF, \IF, ... ...
1297 % Dependence-Friendly Logic
1298 \cmdtxtoparname{DF}
1299
1300 % Independence-Friendly Logic
1301 \cmdtxtoparname{IF}
1302

```

```

1303 % Dependence/Independence-Friendly Logic
1304 \cmdtxttoparname{DIF}
1305
1306 % Dependence Logic
1307 \cmdtxttoparname{DL}
1308
1309 % Team Logic
1310 \cmdtxttoparname{TL}
1311
1312 % Alternating Dependence-Friendly Logic
1313 \cmdtxttoparname{ADF}
1314
1315 % Alternating Independence-Friendly Logic
1316 \cmdtxttoparname{AIF}
1317
1318 % Alternating Dependence/Independence-Friendly Logic
1319 \cmdtxttoparname{ADIF}

```

...

```

1320 %** Syntax *****%

```

\LEExs, \LAA11 ...

```

1321 \newcommand{\leexssym}{\Sigma}
1322 \usrmth{LEExs}{\luop}{\leexssym}
1323 \newcommand{\laallsym}{\Pi}
1324 \usrmth{LAA11}{\luop}{\laallsym}

```

```

1325 %** Semantics *****%

```

...

```

1326 %** Second-Order Logics I *****%

```

\SOL,

```

1327 % Second-Order Logic
1328 \cmdtxttoparname{SOL}[Sol]
1329 \cmdtxttoparname{SO}
1330
1331 % Weak Second-Order Logic
1332 \DeclareRobustCommand{\WSOL}
1333   {\{\txtrname{W}\}\SOL}
1334 \DeclareRobustCommand{\WSO}
1335   {\{\txtrname{W}\}\SO}
1336
1337 % coWeak Second-Order Logic
1338 \DeclareRobustCommand{\coWSOL}
1339   {\{\txtrname{coW}\}\SOL}
1340 \DeclareRobustCommand{\coWSO}
1341   {\{\txtrname{coW}\}\SO}
1342
1343 % Monadic Second-Order Logic
1344 \DeclareRobustCommand{\MSOL}
1345   {\{\txtrname{M}\}\SOL}
1346 \DeclareRobustCommand{\MSO}
1347   {\{\txtrname{M}\}\SO}
1348
1349 % Weak Monadic Second-Order Logic
1350 \DeclareRobustCommand{\WMSOL}
1351   {\{\txtrname{W}\}\MSOL}
1352 \DeclareRobustCommand{\WMSO}
1353   {\{\txtrname{W}\}\MSO}
1354
1355 % coWeak Monadic Second-Order Logic
1356 \DeclareRobustCommand{\coWMSOL}

```

```

1357  {{\txtname{coW}}}\MSOL}
1358 \DeclareRobustCommand{\coWMSO}
1359  {{\txtname{coW}}}\MSO}

1360 %** Syntax *****%%

\FVarSet, ... ...
1361 \newcommand{\fvarsym}{x}
1362 \newcommand{\fvarset}{FVr}
1363 \cmdmthsettext{FVar}[\fvarset][\fvarsym]

\SVarSet, ... ...
1364 \newcommand{\svarsym}{X}
1365 \newcommand{\svarset}{SVr}
1366 \cmdmthsettext{SVar}[\svarset][\svarsym]

1367 %** Semantics *****%%
...
1368 %** Second-Order Logics II *****%%

\TL, \PL, ... ...
1369 % Tree Logic
1370 \cmdtxttoparname{TL}
1371
1372 % Weak Tree Logic
1373 \DeclareRobustCommand{\WTL}
1374  {{\txtname{W}}}\TL}
1375
1376 % coWeak Tree Logic
1377 \DeclareRobustCommand{\coWTL}
1378  {{\txtname{coW}}}\TL}
1379
1380 % Monadic Tree Logic
1381 \DeclareRobustCommand{\MTL}
1382  {{\txtname{M}}}\TL}
1383
1384 % Weak Monadic Tree Logic
1385 \DeclareRobustCommand{\WMTL}
1386  {{\txtname{W}}}\MTL}
1387
1388 % coWeak Monadic Tree Logic
1389 \DeclareRobustCommand{\coWMTL}
1390  {{\txtname{coW}}}\MTL}
1391
1392 % Path Logic
1393 \cmdtxttoparname{PL}
1394
1395 % Weak Path Logic
1396 \DeclareRobustCommand{\WPL}
1397  {{\txtname{W}}}\PL}
1398
1399 % coWeak Path Logic
1400 \DeclareRobustCommand{\coWPL}
1401  {{\txtname{coW}}}\PL}
1402
1403 % Monadic Path Logic
1404 \DeclareRobustCommand{\MPL}
1405  {{\txtname{M}}}\PL}
1406
1407 % Weak Monadic Path Logic
1408 \DeclareRobustCommand{\WMPL}
1409  {{\txtname{W}}}\MPL}
1410

```

```

1411 % coWeak Monadic Path Logic
1412 \DeclareRobustCommand{\coWMPL}
1413   {\textname{coW}}\MPL}

1414 %** Syntax *****%%

...

1415 %** Semantics *****%%

...

1416 %** Modal Logics I *****%%

```

\ML, \GML, ...

```

...
1417 % Modal Logic
1418 \cmdtxttoparname{ML}
1419
1420 % Graded Modal Logic
1421 \DeclareRobustCommand{\GML}
1422   {\textname{G}}\ML}
1423
1424 % Quantified Modal Logic
1425 \DeclareRobustCommand{\QML}
1426   {\textname{Q}}\ML}
1427 \DeclareRobustCommand{\EML}
1428   {\ensuremath{\exists}\ML}
1429 \DeclareRobustCommand{\UML}
1430   {\ensuremath{\forall}\ML}

1431 %** Syntax *****%%

```

\Opr ...

```

1432 \usrmth{Opr}{\sym}[Op]

```

\DMod, \BMod ...

```

1433 \usrmth{DMod}{\sym}[\Diamond]
1434 \usrmth{BMod}{\sym}[\Box]

```

\Exs, \All ...

```

1435 \DeclareRobustCommand{\Exs}[1]
1436   {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
1437 \DeclareRobustCommand{\All}[1]
1438   {\mth{\defval{\argmid{\left[]}{#1}{\right]}}{\BMod}}}

```

```

1439 %** Semantics *****%%

```

\KrpStr, ...

```

1440 \newcommand{\krpstr}{K}
1441 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

```

\WrlSet, ...

```

1442 \newcommand{\wrlsym}{w}
1443 \newcommand{\wrlset}{W}
1444 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1445 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

```

\AccRel, \TrnRel ...

```

1446 \newcommand{\accsym}{R}
1447 \cmdmthrel{Acc}[\accsym]
1448 \cmdmthrel{Trn}[\accsym]

```

\labFun ...

```

1449 \newcommand{\labsym}{\lambda}
1450 \cmdmthfun{lab}[\labsym]

```

```

\PTHSet, \pthFun ...
1451 \providecommand{\pthsym}{\pi}
1452 \providecommand{\pthset}{Pth}
1453 \cmdmthsetext{Pth}[\pthset][\pthsym]
1454 \cmdmthfun{pth}

1455 %** Modal Logics II *****%

\MC, \GMC, ... ...
1456 % Mu Calculus
1457 \cmdtxttoparname{MC}[\ensuremath{\mu}-Calculus]
1458
1459 % Graded Mu Calculus
1460 \DeclareRobustCommand{\GMC}
1461   {\{\textrm{G}\}\MC}
1462
1463 % Quantified Mu Calculus
1464 \DeclareRobustCommand{\QMC}
1465   {\{\textrm{Q}\}\MC}
1466 \DeclareRobustCommand{\EMC}
1467   {\ensuremath{\exists}\MC}
1468 \DeclareRobustCommand{\UMC}
1469   {\ensuremath{\forall}\MC}
1470
1471 % Alternation-Free Mu Calculus
1472 \DeclareRobustCommand{\AFMC}
1473   {\{\textrm{AF}\}\MC}
1474
1475 % Alternation-Free Graded Mu Calculus
1476 \DeclareRobustCommand{\AFGMC}
1477   {\{\textrm{AF}\}\GMC}
1478
1479 % Quantified Alternation-Free Mu Calculus
1480 \DeclareRobustCommand{\QAFMC}
1481   {\{\textrm{Q}\}\AFMC}
1482 \DeclareRobustCommand{\EAFMC}
1483   {\ensuremath{\exists}\AFMC}
1484 \DeclareRobustCommand{\UAFMC}
1485   {\ensuremath{\forall}\AFMC}
1486
1487 %** Syntax *****%
...
1488 %** Semantics *****%
...
1489 %** Temporal Logics I *****%

\PTL, \LTL, ... ...
1490 % Propositional Temporal Logic
1491 \cmdtxttoparname{PTL}
1492
1493 % Quantified Propositional Temporal Logic
1494 \DeclareRobustCommand{\QPTL}
1495   {\{\textrm{Q}\}\PTL}
1496 \DeclareRobustCommand{\EPTL}
1497   {\ensuremath{\exists}\PTL}
1498 \DeclareRobustCommand{\UPTL}
1499   {\ensuremath{\forall}\PTL}
1500
1501 % Linear Temporal Logic
1502 \cmdtxttoparname{LTL}
1503

```

```

1504 % Quantified Linear Temporal Logic
1505 \DeclareRobustCommand{\QLTL}
1506   {\textname{Q}}\LTL}
1507 \DeclareRobustCommand{\ELTL}
1508   {\ensuremath{\exists}\LTL}
1509 \DeclareRobustCommand{\ULTL}
1510   {\ensuremath{\forall}\LTL}

1511 %** Syntax *****%%

\X, ... ...
1512 \usrmth{X}{-}{sym}[X\,,]
1513 \usrmth{F}{-}{sym}[F\,,]
1514 \usrmth{G}{-}{sym}[G\,,]
1515 \usrmth{U}{-}{sym}[\,,U\,,]
1516 \usrmth{R}{-}{sym}[\,,R\,,]

\Y, ... ...
1517 \usrmth{Y}{-}{sym}[G\,,]
1518 \usrmth{P}{-}{sym}[P\,,]\let\SavePildcrowP
1519 \usrmth{H}{-}{sym}[H\,,]\let\SaveDoubleAcuteH
1520 \usrmth{S}{-}{sym}[\,,S\,,]\let\SaveSectionSymbolS
1521 \usrmth{B}{-}{sym}[\,,B\,,]

1522 %** Semantics *****%%
...

1523 %** Temporal Logics II *****%%

\PDL, \CTL, ... ...
1524
1525 % Propositional Dynamic Logic
1526 \cmdtxtopname{PDL}
1527
1528 % Computation Tree Logic
1529 \cmdtxtopname{CTL}
1530
1531 % Weak Computation Tree Logic
1532 \DeclareRobustCommand{\WCTL}
1533   {\textname{W}}\CTL}
1534
1535 % Quantified Computation Tree Logic
1536 \DeclareRobustCommand{\QCTL}
1537   {\textname{Q}}\CTL}
1538 \DeclareRobustCommand{\ECTL}
1539   {\ensuremath{\exists}\CTL}
1540 \DeclareRobustCommand{\UCTL}
1541   {\ensuremath{\forall}\CTL}
1542
1543 % Improved Computation Tree Logic
1544 \cmdtxtopname{CTLP}[CTL$^{+}$]
1545
1546 % Weak Improved Computation Tree Logic
1547 \DeclareRobustCommand{\WCTLP}
1548   {\textname{W}}\CTLP}
1549
1550 % Quantified Improved Computation Tree Logic
1551 \DeclareRobustCommand{\QCTLP}
1552   {\textname{Q}}\CTLP}
1553 \DeclareRobustCommand{\ECTLP}
1554   {\ensuremath{\exists}\CTLP}
1555 \DeclareRobustCommand{\UCTLP}
1556   {\ensuremath{\forall}\CTLP}
1557

```



```

1558 % Full Computation Tree Logic
1559 \cmdtxtoparname{CTLS}[CTL*]
1560
1561 % Weak Full Computation Tree Logic
1562 \DeclareRobustCommand{\WCTLS}
1563   {\{\txtname{W}\}\CTLS}
1564
1565 % Quantified Full Computation Tree Logic
1566 \DeclareRobustCommand{\QCTLS}
1567   {\{\txtname{Q}\}\CTLS}
1568 \DeclareRobustCommand{\ECTLS}
1569   {\ensuremath{\exists}\CTLS}
1570 \DeclareRobustCommand{\UCTLS}
1571   {\ensuremath{\forall}\CTLS}

1572 %** Syntax *****%%

\E, \A ...

1573 \usrmth{E}{\}{sym}
1574 \usrmth{A}{\}{sym}

1575 %** Semantics *****%%

...

1576 %** Strategic Logics I *****%%

\ATL, ... ...

1577 % Alternating Temporal Logic
1578 \cmdtxtoparname{ATL}
1579
1580 % Weak Alternating Tree Logic
1581 \DeclareRobustCommand{\WATL}
1582   {\{\txtname{W}\}\ATL}
1583
1584 % Quantified Alternating Temporal Logic
1585 \DeclareRobustCommand{\QATL}
1586   {\{\txtname{Q}\}\ATL}
1587 \DeclareRobustCommand{\EATL}
1588   {\ensuremath{\exists}\ATL}
1589 \DeclareRobustCommand{\UATL}
1590   {\ensuremath{\forall}\ATL}
1591
1592 % Improved Alternating Temporal Logic
1593 \cmdtxtoparname{ATLP}[ATL$^{+}$]
1594
1595 % Weak Improved Alternating Tree Logic
1596 \DeclareRobustCommand{\WATLP}
1597   {\{\txtname{W}\}\ATLP}
1598
1599 % Quantified Improved Alternating Temporal Logic
1600 \DeclareRobustCommand{\QATLP}
1601   {\{\txtname{Q}\}\ATLP}
1602 \DeclareRobustCommand{\EATLP}
1603   {\ensuremath{\exists}\ATLP}
1604 \DeclareRobustCommand{\UATLP}
1605   {\ensuremath{\forall}\ATLP}
1606
1607 % Full Alternating Temporal Logic
1608 \cmdtxtoparname{ATLS}[ATL*]
1609
1610 % Weak Full Alternating Tree Logic
1611 \DeclareRobustCommand{\WATLS}
1612   {\{\txtname{W}\}\ATLS}
1613

```

```

1614 % Quantified Full Alternating Temporal Logic
1615 \DeclareRobustCommand{\QATLS}
1616   {\txname{Q}\ATLS}
1617 \DeclareRobustCommand{\EATLS}
1618   {\ensuremath{\exists}\ATLS}
1619 \DeclareRobustCommand{\UATLS}
1620   {\ensuremath{\forall}\ATLS}

1621 %** Syntax *****%%

\EEs, \AA11 ...
1622 \DeclareRobustCommand{\EEs}[1]
1623   {\mth{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}
1624 \DeclareRobustCommand{\AA11}[1]
1625   {\mth{\argmid{\left[\left[\right]{\defval{#1}{\emptyset}}{\right]\right]}}}

1626 %** Semantics *****%%

\CGS ...
1627 \cmdtxname{CGS}

\CGSStr, ... ...
1628 \newcommand{\cgsstr}{G}
1629 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

\AgnSet, ... ...
1630 \newcommand{\agnsym}{a}
1631 \newcommand{\agnset}{Ag}
1632 \cmdmthsetext{Agn}[\agnset][\agnsym]

\PosSet, ... ...
1633 \providecommand{\possym}{v}
1634 \providecommand{\posset}{Ps}
1635 \cmdmthsetext{Pos}[\posset][\possym]
1636 \cmdmthsymelm{ipos}[\possym_{I}]
1637 \cmdmthsymelm{fpos}[\possym_{F}]
1638 \cmdmthset{PPos}[\posset_{\PlrSym}]
1639 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1640 \cmdmthset{OPos}[\posset_{\OppSym}]
1641 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\SttSet, ... ...
1642 \newcommand{\sttsym}{s}
1643 \newcommand{\sttset}{St}
1644 \cmdmthsetext{Stt}[\sttset][\sttsym]
1645 \cmdmthset{IStt}[\sttset_{I}]
1646 \cmdmthsymelm{istt}[\sttsym_{I}]
1647 \cmdmthset{FStt}[\sttset_{F}]
1648 \cmdmthsymelm{fstt}[\sttsym_{F}]

\ActSet, ... ...
1649 \newcommand{\actsym}{c}
1650 \newcommand{\actset}{Ac}
1651 \cmdmthsetext{Act}[\actset][\actsym]

\DecSet, ... ...
1652 \newcommand{\decsym}{d}
1653 \newcommand{\decset}{Dc}
1654 \cmdmthsetext{Dec}[\decset][\decsym]

\movFun ...
1655 \newcommand{\movsym}{\tau}
1656 \cmdmthfun{mov}[\movsym]

```

```

\HstSet, ... ...
1657 \providecommand{\hstsym}{\rho}
1658 \providecommand{\hstset}{Hst}
1659 \cmdmthsetext{Hst}[\hstset][\hstsym]
1660 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1661 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1662 \cmdmthset{OHst}[\hstset_{\OppSym}]
1663 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1664 \cmdmthfun{hst}

\PlaySet, \playFun ...
1665 \providecommand{\playsym}{\pi}
1666 \providecommand{\playset}{Play}
1667 \cmdmthsetext{Play}[\playset][\playsym]
1668 \cmdmthfun{play}

\StrSet, ... ...
1669 \providecommand{\strsym}{\sigma}
1670 \providecommand{\strset}{Str}
1671 \cmdmthsetext{Str}[\strset][\strsym]
1672 \cmdmthset{PStr}[\strset_{\PlrSym}]
1673 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1674 \cmdmthset{OStr}[\strset_{\OppSym}]
1675 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1676 \providecommand{\prfsym}{\xi}
1677 \providecommand{\prfset}{Prf}
1678 \cmdmthsetext{Prf}[\prfset][\prfsym]

1679 %** Strategic Logics II *****%%

\SL, ... ...
1680 % Strategy Logic
1681 \cmdtxttoparname{SL}
1682
1683 \DeclareRobustCommand{\ESL}
1684   {\ensuremath{\exists}\SL}
1685 \DeclareRobustCommand{\USL}
1686   {\ensuremath{\forall}\SL}
1687
1688 \DeclareRobustCommand{\FSL}
1689   {\{\textname{F}\}\SL}
1690
1691 \DeclareRobustCommand{\EFSL}
1692   {\ensuremath{\exists}\FSL}
1693 \DeclareRobustCommand{\UFSL}
1694   {\ensuremath{\forall}\FSL}
1695
1696 % One-Goal Strategy Logic
1697 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
1698   {\SL[#1][#2][1g\arglef{,}{#3}]}
1699
1700 \DeclareRobustCommand{\EOGSL}
1701   {\ensuremath{\exists}\OGSL}
1702 \DeclareRobustCommand{\UOGSL}
1703   {\ensuremath{\forall}\OGSL}
1704
1705 \DeclareRobustCommand{\FOGSL}
1706   {\{\textname{F}\}\OGSL}
1707
1708 \DeclareRobustCommand{\EFOGSL}
1709   {\ensuremath{\exists}\FOGSL}

```

```

1710 \DeclareRobustCommand{\UFOGSL}
1711   {\ensuremath{\forall}\text{FOGSL}}
1712
1713 % Conjunctive-Goal Strategy Logic
1714 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
1715   {\SL[#1][#2][cg\arglef{,}{#3}]}
1716
1717 \DeclareRobustCommand{\ECGSL}
1718   {\ensuremath{\exists}\text{CGSL}}
1719 \DeclareRobustCommand{\UCGSL}
1720   {\ensuremath{\forall}\text{CGSL}}
1721
1722 \DeclareRobustCommand{\FCGSL}
1723   {\{\textname{F}\}\text{xGSL}}
1724
1725 \DeclareRobustCommand{\EFCGSL}
1726   {\ensuremath{\exists}\text{FCGSL}}
1727 \DeclareRobustCommand{\UFCGSL}
1728   {\ensuremath{\forall}\text{FCGSL}}
1729
1730 % Disjunctive-Goal Strategy Logic
1731 \DeclareRobustCommandx{\DGS}[3][1=, 2=, 3=]
1732   {\SL[#1][#2][dg\arglef{,}{#3}]}
1733
1734 \DeclareRobustCommand{\EDGS}
1735   {\ensuremath{\exists}\text{DGS}}
1736 \DeclareRobustCommand{\UDGS}
1737   {\ensuremath{\forall}\text{DGS}}
1738
1739 \DeclareRobustCommand{\FDGS}
1740   {\{\textname{F}\}\text{xGSL}}
1741
1742 \DeclareRobustCommand{\EFDGS}
1743   {\ensuremath{\exists}\text{FDGS}}
1744 \DeclareRobustCommand{\UFDGS}
1745   {\ensuremath{\forall}\text{FDGS}}
1746
1747 % Alternating-Goal Strategy Logic
1748 \DeclareRobustCommandx{\AGS}[3][1=, 2=, 3=]
1749   {\SL[#1][#2][ag\arglef{,}{#3}]}
1750
1751 \DeclareRobustCommand{\EAGS}
1752   {\ensuremath{\exists}\text{AGS}}
1753 \DeclareRobustCommand{\UAGS}
1754   {\ensuremath{\forall}\text{AGS}}
1755
1756 \DeclareRobustCommand{\FAGS}
1757   {\{\textname{F}\}\text{xGSL}}
1758
1759 \DeclareRobustCommand{\EFAGS}
1760   {\ensuremath{\exists}\text{FAGS}}
1761 \DeclareRobustCommand{\UFAGS}
1762   {\ensuremath{\forall}\text{FAGS}}
1763
1764 % Extended-Goal Strategy Logic
1765 \DeclareRobustCommandx{\EGS}[3][1=, 2=, 3=]
1766   {\SL[#1][#2][eg\arglef{,}{#3}]}
1767
1768 \DeclareRobustCommand{\EEGS}
1769   {\ensuremath{\exists}\text{EGS}}
1770 \DeclareRobustCommand{\UEGS}
1771   {\ensuremath{\forall}\text{EGS}}
1772

```

```

1773 \DeclareRobustCommand{\FEGSL}
1774   {\textname{F}}\xGSL}
1775
1776 \DeclareRobustCommand{\EFEGSL}
1777   {\ensuremath{\exists}\FEGSL}
1778 \DeclareRobustCommand{\UFEGSL}
1779   {\ensuremath{\forall}\FEGSL}
1780
1781 % Boolean-Goal Strategy Logic
1782 \DeclareRobustCommandx{\BGS}[3][1=, 2=, 3=]
1783   {\SL[#1][#2][bg\arglef{,}{#3}]}
1784
1785 \DeclareRobustCommand{\EBGS}
1786   {\ensuremath{\exists}\BGS}
1787 \DeclareRobustCommand{\UBGS}
1788   {\ensuremath{\forall}\BGS}
1789
1790 \DeclareRobustCommand{\FBGS}
1791   {\textname{F}}\xGSL}
1792
1793 \DeclareRobustCommand{\EFBGSL}
1794   {\ensuremath{\exists}\FBGS}
1795 \DeclareRobustCommand{\UFBGSL}
1796   {\ensuremath{\forall}\FBGS}
1797
1798 % Nested-Goal Strategy Logic
1799 \DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
1800   {\SL[#1][#2][ng\arglef{,}{#3}]}
1801
1802 \DeclareRobustCommand{\ENGSL}
1803   {\ensuremath{\exists}\NGSL}
1804 \DeclareRobustCommand{\UNGSL}
1805   {\ensuremath{\forall}\NGSL}
1806
1807 \DeclareRobustCommand{\FNGSL}
1808   {\textname{F}}\xGSL}
1809
1810 \DeclareRobustCommand{\EFNGSL}
1811   {\ensuremath{\exists}\FNGSL}
1812 \DeclareRobustCommand{\UFNGSL}
1813   {\ensuremath{\forall}\FNGSL}
1814
1815 % Undefined-Goal Strategy Logic
1816 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
1817   {\SL[#1][#2][xg\arglef{,}{#3}]}
1818
1819 \DeclareRobustCommand{\EXGSL}
1820   {\ensuremath{\exists}\XGSL}
1821 \DeclareRobustCommand{\UXGSL}
1822   {\ensuremath{\forall}\XGSL}
1823
1824 \DeclareRobustCommand{\FXGSL}
1825   {\textname{F}}\xGSL}
1826
1827 \DeclareRobustCommand{\EFXGSL}
1828   {\ensuremath{\exists}\FXGSL}
1829 \DeclareRobustCommand{\UFXGSL}
1830   {\ensuremath{\forall}\FXGSL}
1831
1831 %** Syntax ****
\BndSet, ...
1832 \newcommand{\bndsym}{\flat}
1833 \newcommand{\bndset}{\Bn}

```

```

1834 \cmdmthsetext{Bnd}[\bndset][\bndsym]
1835 \usrmth{bnd}{-}{argfun}

\psn ...
1836 \usrmth{psn}{-}{argfun}

1837 %%** Semantics *****%%

\nxtFun ...
1838 \newcommand{\nxtfun}{nxt}
1839 \cmdmthfun{nxt}[\nxtfun]

1840 \fi
1841 %*****%%
1842 %*****%%
1843 %%** Macros for Automata *****%%
1844 %*****%%
1845 \ifaut@
1846 %%** Finite Word Automata *****%%

\DFA, ... ...
1847 \cmdtxtoparname{DFA}\cmdtxtoparname{NFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}
1848
1849 \cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}
1850
1851 \cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
1852 \cmdtxtoparname{DBW}\cmdtxtoparname{NBW}\cmdtxtoparname{UBW}\cmdtxtoparname{ABW}
1853 \cmdtxtoparname{DCW}\cmdtxtoparname{NCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}
1854 \cmdtxtoparname{DPW}\cmdtxtoparname{NPW}\cmdtxtoparname{UPW}\cmdtxtoparname{APW}
1855 \cmdtxtoparname{DRW}\cmdtxtoparname{NRW}\cmdtxtoparname{URW}\cmdtxtoparname{ARW}
1856 \cmdtxtoparname{DSW}\cmdtxtoparname{NSW}\cmdtxtoparname{USW}\cmdtxtoparname{ASW}
1857 \cmdtxtoparname{DMW}\cmdtxtoparname{NMW}\cmdtxtoparname{UMW}\cmdtxtoparname{AMW}

\GFG, \PD, ... ...
1858 \cmdtxtoparname{GFG}
1859
1860 \cmdtxtoparname{PD}
1861
1862 %% ...

1863 %%** Syntax *****%%

\AutName, ... ...
1864 \newcommand{\autname}{A}
1865 \usrmthlatupp{Aut}{Name}{name}[\autname]
1866 \newcommand{\autset}{Aut}
1867 \cmdmthset{Aut}[\autset]

\WAutSet ...
1868 \newcommand{\wautset}{WAut}
1869 \cmdmthset{WAut}[\wautset]

\SttSet, ... ...
1870 \def\sttsym{q}
1871 \def\sttset{Q}
1872 \cmdmthsetext{Stt}[\sttset][\sttsym]
1873 \cmdmthset{IStt}[\sttset_{I}]
1874 \cmdmthsymelm{istt}[\sttsym_{I}]
1875 \cmdmthset{FStt}[\sttset_{F}]
1876 \cmdmthsymelm{fstt}[\sttsym_{F}]

```

```

\SymSet, ... ...
1877 \newcommand{\symsym}{\sigma}
1878 \newcommand{\symset}{\Sigma}
1879 \cmdmthsetext{Sym}[\symset][\symsym]

\trnFun ...
1880 \newcommand{\trnsym}{\delta}
1881 \cmdmthfun{trn}[\trnsym]

1882 %** Semantics *****%

\LangFun ...
1883 \newcommand{\langfun}{L}
1884 \cmdmthfun{Lang}[\langfun]

\WrdSet, ... ...
1885 \newcommand{\wrdsym}{w}
1886 \newcommand{\wrdsset}{Wr}
1887 \cmdmthsetext{Wrd}[\wrdsset][\wrdsym]

1888 %** Finite Tree Automata *****%

\DTA, ... ...
1889 \cmdtxtoparname{DTA}\cmdtxtoparname{NTA}\cmdtxtoparname{UTA}\cmdtxtoparname{ATA}
1890
1891 \cmdtxtoparname{DFT}\cmdtxtoparname{NFT}\cmdtxtoparname{UFT}\cmdtxtoparname{AFT}
1892 \cmdtxtoparname{DBT}\cmdtxtoparname{NBT}\cmdtxtoparname{UBT}\cmdtxtoparname{ABT}
1893 \cmdtxtoparname{DCT}\cmdtxtoparname{NCT}\cmdtxtoparname{UCT}\cmdtxtoparname{ACT}
1894 \cmdtxtoparname{DPT}\cmdtxtoparname{NPT}\cmdtxtoparname{UPT}\cmdtxtoparname{APT}
1895 \cmdtxtoparname{DRT}\cmdtxtoparname{NRT}\cmdtxtoparname{URT}\cmdtxtoparname{ART}
1896 \cmdtxtoparname{DST}\cmdtxtoparname{NST}\cmdtxtoparname{UST}\cmdtxtoparname{AST}
1897 \cmdtxtoparname{DMT}\cmdtxtoparname{NMT}\cmdtxtoparname{UMT}\cmdtxtoparname{AMT}

1898 %** Syntax *****%

\TAutSet ...
1899 \newcommand{\tautset}{TAut}
1900 \cmdmthset{TAut}[\tautset]

\DirSet, ... ...
1901 \newcommand{\dirsym}{d}
1902 \newcommand{\dirset}{\Lambda}
1903 \cmdmthsetext{Dir}[\dirset][\dirsym]

1904 %** Semantics *****%

\TreeSet, ... ...
1905 \newcommand{\treesym}{T}
1906 \newcommand{\treeset}{Tr}
1907 \cmdmthsetext{Tree}[\treeset][\treesym]

\wotFun ...
1908 \newcommand{\wotfun}{wot}
1909 \cmdmthfun{wot}[\wotfun]

1910 \fi
1911 %*****%
1912 %*****%
1913 %** Format Tricks *****%
1914 %*****%
1915 \iffirm@

```

```

... ...
1916 %%...

1917 \fi
1918 %*****%
1919 %*****%
1920 %** Figure Tricks *****%
1921 %*****%
1922 \iffig@

1923 \RequirePackage{tikz}
1924 \usetikzlibrary{arrows,graphs,matrix,patterns,shapes}

1925 \tikzstyle{every node} =
1926   [draw = none, fill = none, black, thin]
1927 \tikzstyle{every edge} +=
1928   [black, thick]

1929 \tikzstyle{noall} =
1930   [draw = none, fill = none]
1931 \tikzstyle{nodraw} =
1932   [draw = none, fill = white]
1933 \tikzstyle{nofill} =
1934   [draw = black, fill = none]

1935 \ifwrpfig@
1936   % Wrapfig Package
1937   \RequirePackage{wrapfig}
1938 \fi

1939 \fi
1940 %*****%
1941 %*****%
1942 %** Table Tricks *****%
1943 %*****%
1944 \iftab@

... ...
1945 %%...

1946 \fi
1947 %*****%
1948 %*****%
1949 %** Algorithm Tricks *****%
1950 %*****%
1951 \ifalg@

1952 \RequirePackage[ruled,vlined]{algorithm2e}
1953 \setlength{\algomargin}{1.25em}
1954 \DontPrintSemicolon
1955 \SetInd{0.25em}{0.5em}

\Signature ...
1956 \SetKw{Signature}{signature}

\Macro, ... ...
1957 \SetKwFor{Macro}{macro}{}{}
1958 \SetKwFor{Function}{function}{}{}
1959 \SetKwFor{Procedure}{procedure}{}{}

\Let ...
1960 \SetKwFor{Let}{let}{in}{}

\True, \False ...
1961 \SetKw{True}{true}
1962 \SetKw{False}{false}

```



```

\From, ... ...
1963 \SetKw{From}{from}
1964 \SetKw{To}{to}
1965 \SetKw{DownTo}{downto}

\GoTo, ... ...
1966 \SetKw{GoTo}{goto}
1967 \SetKw{Break}{break}
1968 \SetKw{Continue}{continue}

\MIf, ... ...
1969 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

\nlr ...
1970 \DeclareRobustCommand{\nlr}[1]
1971   {\addtocounter{AlgoLine}{1}%
1972   \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

1973 \fi
1974 %%*****%
1975 \endinput
1976 \</package>

```

2 Change History

v0.0	General: First public release	1	v0.4	General: Refactoring, corrections, and extensions	1
v0.1	General: Algorithm tricks	1	v0.5	General: Figure tricks	1
v0.10	General: Small refinements	1	v0.6	General: Small refinements	1
v0.11	General: Few additions and corrections	1	v0.7	General: Refinements, corrections, and extensions	1
v0.12	General: New 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
v0.3	General: Few problems solved	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			
\!	352, 360, 783, 836, 1623	\Afortiori	725
\"	742, 743	\afortiori	703
\#	1969	\aFrm,␣.	657
\,	832, 836, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521	\aFun,␣.	576
\.	1916, 1945	\agnset	1631, 1632
\@abs	947, 948	\AgnSet,␣.	1630
\@card	842, 843	\agnsym	1630, 1632
\@ceil	955, 956	\AGSL	1748, 1752, 1754
\@denot	795, 796	\aka	748
\@floor	951, 952	\alg@false	121, 123
\@for	256, 260	\alg@true	122
\@ifstar	766, 770, 795, 808, 830, 834, 838, 842, 947, 951, 955	\algomargin	1953
\@set	830, 831	\allowbreak	238, 240, 242, 244
\@setl	834, 835	\Alpha,␣.	224
\@setr	838, 839	\aMat,␣.	671
\@svec	808, 811	\amsdef@false	17
\@vec	808, 809	\amsdef@true	16
\^	744, 746	\amsthm@false	21
A		\amsthm@true	20
\abs	946	\AName,␣.	479
\AccRel,␣\TrnRel	1446	\Aomega,␣\AOmega	885
\accsym	1446, 1447, 1448	\Aomicron	895
\ACls,␣.	505	\Aomicron,␣.	893
\actset	1650, 1651	\Aposteriori	727
\ActSet,␣.	1649	\aposteriori	705
\actsym	1649, 1651	\Apriori	726
\addtocounter	1971, 1972	\apriori	704
\adhoc	702	\apset	1214, 1215
\aElm,␣.	602	\APSet,␣.	1213
\AFam,␣.	492	\apsym	1213, 1215
\AFGMC	1476	\arabic	1972
\AFMC	1472, 1481, 1483, 1485	\aRel,␣.	563
		\arenaname	1057, 1058
		\ArenaName,␣.	1057
		\arg	959
		\argbst	967
		B	
		\BF,␣\QBF,␣.	1180
		\bfseries	423

\BG,□...	1127	\cmdmthoargelm	607, 622	1651, 1654, 1659, 1667,	
\bgroup	251	\cmdmthoargfam	497	1671, 1678, 1834, 1872,	
\BGSL	1782, 1786, 1788	\cmdmthoargfrm	662	1879, 1887, 1903, 1907	
\BMod	1438	\cmdmthoargfun		\cmdmthsig	519
\bndset	1833, 1834		581, 1107, 1109,	\cmdmthsnt	645
\BndSet,□...	1832		1111, 1113, 1115, 1117,	\cmdmthstr	532
\bndsym	1832, 1834		1119, 1121, 1123, 1125	\cmdmthsym	
\boldsymbol	670, 683	\cmdmthoargmat	676		590, 615, 1054, 1056,
\bot	1195	\cmdmthoargname	484		1146, 1148, 1165, 1167
\Box	1434	\cmdmthoargrel	568	\cmdmthsymelm	614, 1062,
\boxminus	1166	\cmdmthoargset	549		1063, 1065, 1067, 1088,
\bst,□...	965	\cmdmthoargsig	523		1090, 1100, 1102, 1445,
		\cmdmthoargsnt	649		1636, 1637, 1639, 1641,
		\cmdmthoargstr	536		1646, 1648, 1661, 1663,
		\cmdmthoargsym	594, 621		1673, 1675, 1874, 1876
		\cmdmthoargsymelm	620	\cmdmthvec	685
		\cmdmthoargvec	689	\cmdtxt	328, 339
		\cmdmthopar	391, 394	\cmdtxtabr	436, 702, 703, 704,
		\cmdmthoparcls	514		705, 706, 707, 708, 709,
		\cmdmthoparelm	611, 628		710, 711, 712, 713, 714,
		\cmdmthoparfam	501		715, 716, 717, 718, 719,
		\cmdmthoparfrm	666		720, 721, 722, 723, 725,
		\cmdmthoparfun	585		726, 727, 728, 729, 730,
		\cmdmthoparmat	680		731, 732, 733, 734, 735,
		\cmdmthoparname	488		736, 737, 738, 742, 743,
		\cmdmthoparrel	572		744, 746, 748, 749, 750,
		\cmdmthoparset	553		751, 752, 753, 754, 756,
		\cmdmthoparsig	527		757, 1230, 1231, 1232, 1233
		\cmdmthoparsnt	653	\cmdtxtall	338, 423, 435, 448, 460
		\cmdmthoparstr	540	\cmdtxtarg	330, 339
		\cmdmthoparsym	598, 627	\cmdtxtargabr	438
		\cmdmthoparsymelm	626	\cmdtxtargcom	463
		\cmdmthoparvec	693	\cmdtxtargdef	426
		\cmdmthpar	389, 394	\cmdtxtargname	451
		\cmdmthparcls	512	\cmdtxtcom	461, 1012, 1013, 1014
		\cmdmthparelm	609, 625	\cmdtxtdef	424
		\cmdmthparfam	499	\cmdtxtname	449, 1627
		\cmdmthparfrm	664	\cmdtxttoarg	332, 339
		\cmdmthparfun	583	\cmdtxttoargabr	440
		\cmdmthparmat	678	\cmdtxttoargcom	465
		\cmdmthparname	486	\cmdtxttoargdef	428
		\cmdmthparrel	570	\cmdtxttoargname	453
		\cmdmthparset	551	\cmdtxtopar	336, 339
		\cmdmthparsig	525	\cmdtxtoparabr	444
		\cmdmthparsnt	651	\cmdtxtoparcom	469
		\cmdmthparstr	538	\cmdtxtopardef	432
		\cmdmthparsym	596, 624	\cmdtxtoparname	457, 1036,
		\cmdmthparsymelm	623		1039, 1042, 1045, 1048,
		\cmdmthparvec	691		1051, 1128, 1131, 1134,
		\cmdmthrel	564, 1071, 1447, 1448		1137, 1140, 1143, 1156,
		\cmdmthset	545, 556, 1064,		1159, 1162, 1181, 1245,
			1066, 1075, 1077, 1087,		1246, 1298, 1301, 1304,
			1089, 1099, 1101, 1638,		1307, 1310, 1313, 1316,
			1640, 1645, 1647, 1660,		1319, 1328, 1329, 1370,
			1662, 1672, 1674, 1867,		1393, 1418, 1457, 1491,
			1869, 1873, 1875, 1900		1502, 1526, 1529, 1544,
		\cmdmthsetext	555,		1559, 1578, 1593, 1608,
			1061, 1082, 1086, 1094,		1681, 1847, 1849, 1851,
			1098, 1105, 1151, 1170,		1852, 1853, 1854, 1855,
			1215, 1225, 1239, 1242,		1856, 1857, 1858, 1860,
			1258, 1265, 1271, 1278,		1889, 1891, 1892, 1893,
			1284, 1363, 1366, 1444,		1894, 1895, 1896, 1897
			1453, 1632, 1635, 1644,	\cmdtxtpar	334, 339
\card	841				
\caselower	556				
\cdot	846				
\cequiv,□...	789				
\cf	706				
\CGS	1627				
\CGSL	1714, 1718, 1720				
\cgsstr	1628, 1629				
\CGSStr,□...	1628				
\chgbar@false	44				
\chgbar@true	45				
\chi	1240				
\circ	865				
\cmdmth	383, 394, 631, 632, 638				
\cmdmthall	393, 478, 491, 504,				
	517, 530, 543, 562, 575,				
	588, 601, 643, 656, 670, 683				
\cmdmtharg	385, 394				
\cmdmthargcls	508				
\cmdmthargelm	605, 619				
\cmdmthargfam	495				
\cmdmthargfrm	660				
\cmdmthargfun	579				
\cmdmthargmat	674				
\cmdmthargname	482				
\cmdmthargrel	566				
\cmdmthargset	547				
\cmdmthargsig	521				
\cmdmthargsnt	647				
\cmdmthargstr	534				
\cmdmthargsym	592, 618				
\cmdmthargsymelm	617				
\cmdmthargvec	687				
\cmdmthcls	506				
\cmdmthelm	603, 616				
\cmdmthfam	493				
\cmdmthfrm	658				
\cmdmthfun					
	577, 1069, 1078, 1083,				
	1091, 1095, 1152, 1171,				
	1216, 1260, 1273, 1450,				
	1454, 1656, 1664, 1668,				
	1839, 1881, 1884, 1909				
\cmdmthlbop	635				
\cmdmthlrel	639				
\cmdmthluop,□...	633				
\cmdmthmat	672				
\cmdmthname	480				
\cmdmthoarg	387, 394				
\cmdmthoargcls	510				

<code>\cmdtxtparabr</code>	442	904, 906, 908, 910, 912,	560, 846, 995, 996, 1010,
<code>\cmdtxtparcom</code>	467	914, 916, 918, 920, 922,	1436, 1438, 1623, 1625
<code>\cmdtxtpardef</code>	430	924, 926, 928, 930, 932,	<code>\delta</code>
<code>\cmdtxtparname</code>	455	935, 937, 939, 941, 943,	1880
<code>\models, \sqsubset</code>	785	946, 950, 954, 959, 961,	<code>\denot</code>
<code>\cmp</code>	864	963, 965, 967, 969, 971,	794
<code>\cnf, \sqsubset \dnf, \sqsubset</code>	1230	973, 975, 977, 979, 982,	<code>\dep, \sqsubset \alt</code>
<code>\Cnt, \sqsubset \Qnt, \sqsubset \Sym</code>	1218	984, 986, 1184, 1186,	1228
<code>\coimplies, \sqsubset</code>	780	1188, 1249, 1251, 1332,	<code>\der</code>
<code>\com@false</code>	56, 77, 79	1334, 1338, 1340, 1344,	803
<code>\com@true</code>	78	1346, 1350, 1352, 1356,	<code>\Dere</code>
<code>\conset</code>	1264, 1265	1358, 1373, 1377, 1381,	730
<code>\consig</code>	1261, 1262	1385, 1389, 1396, 1400,	<code>\dere</code>
<code>\ConSig, \sqsubset</code>	1261	1404, 1408, 1412, 1421,	709
<code>\constr</code>	1288, 1289	1425, 1427, 1429, 1435,	<code>\DF, \sqsubset \IF, \sqsubset</code>
<code>\ConStr, \sqsubset</code>	1288	1437, 1460, 1464, 1466,	1297
<code>\consym</code>	1263, 1265	1468, 1472, 1476, 1480,	<code>\DFA, \sqsubset</code>
<code>\Contd</code>	756	1482, 1484, 1494, 1496,	1847
<code>\contd</code>	749	1498, 1505, 1507, 1509,	<code>\DGSL</code>
<code>\coWMPL</code>	1412	1532, 1536, 1538, 1540,	1731, 1735, 1737
<code>\coWMSO</code>	1358	1547, 1551, 1553, 1555,	<code>\Diamond</code>
<code>\coWMSOL</code>	1356	1562, 1566, 1568, 1570,	1433
<code>\coWMTL</code>	1389	1581, 1585, 1587, 1589,	<code>\dirset</code>
<code>\coWPL</code>	1400	1596, 1600, 1602, 1604,	1902, 1903
<code>\coWSO</code>	1340	1611, 1615, 1617, 1619,	<code>\DirSet, \sqsubset</code>
<code>\coWSOL</code>	1338	1622, 1624, 1683, 1685,	1901
<code>\coWTL</code>	1377	1688, 1691, 1693, 1700,	<code>\dirsym</code>
<code>\crv@false</code>	40	1702, 1705, 1708, 1710,	1901, 1903
<code>\crv@true</code>	41	1717, 1719, 1722, 1725,	<code>\Divideetimpera</code>
<code>\csdef</code>	223, 224, 225, 226,	1727, 1734, 1736, 1739,	731
	227, 329, 331, 333, 335,	1742, 1744, 1751, 1753,	<code>\divideetimpera</code>
	337, 342, 384, 386, 388,	1756, 1759, 1761, 1768,	710
	390, 392, 397, 1008, 1010	1770, 1773, 1776, 1778,	<code>\DMod</code>
<code>\csedef</code>	257, 261	1785, 1787, 1790, 1793,	1436
<code>\csname</code>	247,	1795, 1802, 1804, 1807,	<code>\DMod, \sqsubset \BMod</code>
	248, 249, 250, 251, 252,	1810, 1812, 1819, 1821,	1433
	253, 258, 262, 329, 331,	1824, 1827, 1829, 1970	<code>\do</code>
	333, 335, 337, 342, 348, 397	<code>\DeclareRobustCommandx</code> . .	256, 260
<code>\CTLP</code>	1548, 1552, 1554, 1556	<code>\dom, \sqsubset \cod, \sqsubset</code>
<code>\CTLS</code>	1563, 1567, 1569, 1571	851
<code>\CurrentOption</code>	126	<code>\DontPrintSemicolon</code>
			1954
			<code>\DTA, \sqsubset</code>
			1889
			<code>\dual, \sqsubset \adj, \sqsubset</code>
			799
			E
			<code>\E, \sqsubset \A</code>
			1573
			<code>\EAFMC</code>
			1482
			<code>\EAGSL</code>
			1751
			<code>\Easy, \sqsubset \Hard, \sqsubset</code>
			1012
			<code>\EATL</code>
			1587
			<code>\EATLP</code>
			1602
			<code>\EATLS</code>
			1617
			<code>\EBF</code>
			1186
			<code>\EBGSL</code>
			1785
			<code>\ECGSL</code>
			1717
			<code>\ECTL</code>
			1538
			<code>\ECTLP</code>
			1553
			<code>\ECTLS</code>
			1568
			<code>\EDGSL</code>
			1734
			<code>\EEGSL</code>
			1768
			<code>\EExs, \sqsubset \AA11</code>
			1622
			<code>\EFAGSL</code>
			1759
			<code>\EFBGSL</code>
			1793
			<code>\EFCGSL</code>
			1725
			<code>\EFDGSL</code>
			1742
			<code>\EFEGLS</code>
			1776
			<code>\EFNGSL</code>
			1810
			<code>\EFOGSL</code>
			1708
			<code>\EFSL</code>
			1691
			<code>\EFXGSL</code>
			1827
			<code>\Eg</code>
			732
			<code>\eg</code>
			711
			<code>\EG, \sqsubset</code>
			1155
			<code>\EGSL</code>
			1765, 1769, 1771
			<code>\else</code>
			187, 201, 233, 235, 244
			<code>\ELTL</code>
			1507
			<code>\em</code>
			423, 435
			<code>\EMC</code>
			1466
			<code>\EML</code>
			1427
			<code>\empchk</code>
			232, 238,
			240, 242, 313, 368, 558, 560
			<code>\emptyfun</code>
			867
			<code>\emptyrel</code>
			848

66, 71, 77, 83, 88, 93, 99, 105, 110, 115, 121, 132	\newmth 347, 350, 352, 360	\newmtharg 351, 354, 356	\newmthargsty 353, 373, 386	\newmthoarg 355, 358	\newmthoargsty 357, 375, 388	\newmthopar 363, 366	\newmthoparsty 365, 379, 392	\newmthpar 359, 362, 364	\newmthparsty 361, 377, 390	\newmthsty 349, 371, 384	\newtxt 292, 295, 297, 305	\newtxtarg 296, 299, 301	\newtxtargsty 298, 318, 331	\newtxtoarg 300, 303	\newtxtoargsty 302, 320, 333	\newtxtopar 308, 311	\newtxtoparsty 310, 324, 337	\newtxtpar 304, 307, 309	\newtxtparsty 306, 322, 335	\newtxtsty 294, 316, 329	\NGSL 1799, 1803, 1805	\nlr 1970	\nlset 1972	\noexpand 258, 262	\normalfont 423, 448, 460	\not 775, 779, 783, 788, 792	\notcequiv 791	\notcmmodels 787	\notcoimplies 782	\notimplied 778	\notimplies 774	\num, _ 935	\numcc 937	\numco 939	\numoc 941	\numoo 943	\nxtFun 1838	\nxtfun 1838, 1839					
O		\obsset 1076, 1077	\ObsSet, _obsFun 1076	\oddsym 1147, 1148	\odot 1220	\OGSL 1697, 1701, 1703, 1706	\Omega 888	\omega 886	\Omicron 896	\omicron 223, 894	\oplus 1164	\OppSym 1066, 1067, 1089, 1090, 1101, 1102, 1640, 1641, 1662, 1663, 1674, 1675	\oppsym 1055, 1056	\Opr 1432	\outfun 1116, 1117	\overline 800, 812																											
P		\P 1518	\PackageWarning 126	\PDL, _CTL, _ 1524	\Percontra 736	\percontra 719	\PH 1027	\Pi 1323	\pi 1080, 1092, 1451, 1665	\playset 1093, 1094, 1666, 1667	\PlaySet, _playFun 1092, 1665	\playsym 1092, 1094, 1665, 1667	\PlrFun 1068	\plrFun 1068, 1069	\PlrSym 1064, 1065, 1087, 1088, 1099, 1100, 1638, 1639, 1660, 1661, 1672, 1673	\plrsym 1053, 1054	\PlrSym, _OppSym 1053	\pm 909, 917, 925	\posset 1060, 1061, 1064, 1066, 1634, 1635, 1638, 1640	\PosSet, _ 1059, 1633	\possym 1059, 1061, 1062, 1063, 1065, 1067, 1633, 1635, 1636, 1637, 1639, 1641	\pow 845	\prefun 1106, 1107	\preFun, _sucFun 1106	\prfset 1104, 1105, 1677, 1678	\PrfSet, _prfFun 1103, 1676	\prfsym 1103, 1105, 1676, 1678	\Primafacie 737	\primafacie 720	\prj 860	\ProcessOptions 130	\providecommand 1451, 1452, 1633, 1634, 1657, 1658, 1665, 1666, 1669, 1670, 1676, 1677	\prtset 1150, 1151	\PrtSet, _prtFun 1149	\prtsym 1149, 1151	\psn 1836	\PSpace, _ 1021	\pthset 1081, 1082, 1452, 1453	\PthSet, _pthFun 1080, 1451	\pthsym 1080, 1082, 1451, 1453	\PTime, _ 1020	\PTL, _LTL, _ 1490	\pto, _pmapsto 870
Q		\QAE, _QEA 1221	\QAFMC 1480	\QATL 1585	\QATLP 1600	\QATLS 1615	\QCTL 1536	\QCTLP 1551	\QCTLS 1566	\QLTL 1505	\QMC 1464	\QML 1425	\qntset 1224, 1225	\QntSet, _ 1223	\qntsym 1223, 1225	\QPSpace, _ 1023	\QPTime, _ 1022	\QPTL 1494																									
R		\raisebox 873	\rangle 822, 824, 825, 827, 1436, 1623	\rbrace 832, 840	\rceil 957	\rchfun 1120, 1121	\relax 130	\relset 1283, 1284	\relsig 1280, 1281	\RelSig, _ 1280	\relstr 1294, 1295	\RelStr, _ 1294	\relsym 1282, 1284	\RequirePackage 3, 5, 6, 7, 141, 142, 143, 149, 154, 159, 164, 179, 194, 200, 202, 1923, 1937, 1952	\resp 752	\rfloor 953	\rho 1084, 1657	\right 352, 360, 795, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 830, 834, 838, 842, 947, 951, 955, 1438, 1625	\Rightarrow 773, 775	\rightarrow 1205	\rightharpoonup 871, 874	\rmfamily 326, 460	\rng 855	\Role 746	\role 744	\rrbracket 797	\rst 862	\rvert 844, 949															
S		\S 1520	\SATG, _ 1035	\SaveDoubleAcute 1519	\SavePilcrow 1518	\SaveSectionSymbol 1520	\scshape 448, 460	\seqofcmd 259, 272, 276	\seqofgrklet 279, 410	\seqofgrklow 271, 280, 283, 406, 518, 531	\seqofgrkupp 275, 280, 285, 408	\seqoflatlet 268, 404, 518, 531	\seqoflatlow 264, 269, 283, 400	\seqoflatupp 266, 269, 285, 402, 479, 492, 505	\seqoflet 286, 416, 544, 563, 576, 589, 602, 644, 657, 671, 684	\seqoflow 282, 287, 412																											

