

fmocdmac — FM's OCD L^AT_EX Macro*

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Abstract

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

1 Implementation & Usage

1 `\package`

Required external packages:

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

Package options:

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

*This document describes version v0.31 of the fmocdmac package, last revised 2025/04/21.

```

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

```

```

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

```

Option-processing code:

```

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

```

Package main body:

```

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

```

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

```

143 \csdef{omicron}{o}

```

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

```

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

```

\empchk Emptiness check: `\empchk{<A>}{}` evaluates to the empty string, if Argument $\langle A \rangle$ is empty, and to Argument $\langle B \rangle$, otherwise.

- `\empchk{}{B}` = “”
- `\empchk{A}{B}` = “B”

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

\defval Default value: `\defval{<A>}{}` evaluates to Argument $\langle B \rangle$, if Argument $\langle A \rangle$ is empty, and to Argument $\langle A \rangle$ itself, otherwise.

- `\defval{}{B}` = “B”
- `\defval{A}{B}` = “A”

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

```
156 %%*****%
```

\arglef Left extension: `\arglef{<A>}{}` evaluates to the concatenation $\langle AB \rangle$ of the two arguments, if Argument $\langle B \rangle$ is non-empty, and to the empty string, otherwise.

- `\arglef{A}{}{}` = “”
- `\arglef{A}{B}` = “AB”

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

\argrig Right extension: `\argrig{<A>}{}` evaluates to the concatenation $\langle AB \rangle$ of the two arguments, if Argument $\langle A \rangle$ is non-empty, and to the empty string, otherwise.

- `\argrig{}{B}` = “”
- `\argrig{A}{B}` = “AB”

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

\argmid Middle extension: `\argmid{<A>}{}{<C>}` evaluates to the concatenation $\langle ABC \rangle$ of the three arguments, if Argument $\langle B \rangle$ is non-empty, and to the empty string, otherwise.

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

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

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

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

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

```
165 %%*****%
```

\ifstarvar Command star variants: `\ifstarvar{<A>}{}` ... to do!

```
166 \newrobustcmd{\ifstarvar}
167   {\@ifstar}
```

\ifexclavar Command exclamation variants: `\ifexclavar{<A>}{}` ... to do!

```
168 \newrobustcmd{\ifexclavar}[1]
169   {\@ifnextchar!\@firstoftwo{#1}}
```

```

\ifquestvar Command questionmark variants: \ifquestvar{⟨A⟩}{⟨B⟩} ... to do!
170 \newrobustcmd{\ifquestvar}[1]
171   {\@ifnextchar?{\@firstoftwo{#1}}}

172 %%*****%

\varcmd Variadic commands: \varcmd{⟨A⟩}{⟨B⟩}{⟨C⟩}{⟨D⟩}{⟨E⟩}{⟨F⟩} ... to do!
173 \newrobustcmd{\varcmd}[6]
174   {\expandafter\newcommand\csname gobble#1arg\endcsname[2]
175     {\csname check#1arg\endcsname%
176       {\argsep{##1}{#4\allowbreak}{\empchk{##2}{##2}}}}}%
177   \expandafter\newcommand\csname check#1arg\endcsname[1]
178     {\csname @ifnextchar\endcsname%
179       \bgroup{\csname gobble#1arg\endcsname{##1}{#2{##1#5}#6}}}%
180   \expandafter\newcommand\csname#1\endcsname[1]
181     {\csname check#1arg\endcsname{#3##1}}}

182 %%*****%

\seqoftag Sequence of tags: \seqoftag{⟨A⟩}{⟨B⟩}{⟨C⟩} ... to do!
183 \newrobustcmd{\seqoftag}[3]
184   {\@for\itr:={#1}\do%
185     {\expandafter\csedef{\itr#2}%
186       {\noexpand\csname #3\endcsname{\itr}}}}

\seqofcmd Sequence of commands: \seqofcmd{⟨A⟩}{⟨B⟩}{⟨C⟩} ... to do!
187 \newrobustcmd{\seqofcmd}[3]
188   {\@for\itr:={#1}\do%
189     {\expandafter\csedef{\itr#2}%
190       {\noexpand\csname #3\endcsname{\csname \itr\endcsname}}}}

191 %%*****%

\seqoflatlow Sequence of Latin lowercase letters: \seqoflatlow{⟨A⟩}{⟨B⟩} ... to do!
192 \newrobustcmd{\seqoflatlow}
193   {\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!
194 \newrobustcmd{\seqoflatupp}
195   {\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!
196 \newrobustcmd{\seqoflatlet}[2]
197   {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

198 %%*****%

\seqofgrklow Sequence of Greek lowercase letters: \seqofgrklow{⟨A⟩}{⟨B⟩} ... to do!
199 \newrobustcmd{\seqofgrklow}
200   {\seqofcmd{alpha,beta,gamma,delta,epsilon,varepsilon,zeta,eta,theta,vartheta,%
201     iota,kappa,varkappa,lambda,mu,nu,xi,omicron,pi,varpi,rho,varrho,sigma,%
202     varsigma,tau,upsilon,phi,varphi,chi,psi,omega}}

\seqofgrkupp Sequence of Greek uppercase letters: \seqofgrkupp{⟨A⟩}{⟨B⟩} ... to do!
203 \newrobustcmd{\seqofgrkupp}
204   {\seqofcmd{Alpha,Beta,Gamma,Delta,Epsilon,varEpsilon,Zeta,Eta,Theta,varTheta,%
205     Iota,Kappa,varKappa,Lambda,Mu,Nu,Xi,Omicron,Pi,varPi,Rho,varRho,Sigma,%
206     varSigma,Tau,Upsilon,Phi,varPhi,Chi,Psi,Omega}}

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

```

```

209 %*****%

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

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

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

216 %*****%
217 %*****%
218 %** Auxiliary Packages *****%
219 %*****%
220 \ifaux@
221
222 \ifamsdef@
223   % AMS Packages
224   \RequirePackage{mathtools}
225   \RequirePackage{amssymb}
226   \RequirePackage{stmaryrd}
227   \interdisplaylinepenalty=2500
228 \fi
229
230 \ifamsthm@
231   % AMS Theorem Tools
232   \RequirePackage{amsthm}
233 \fi
234
235 \ifthmtls@
236   % Extended Theorem Tools
237   \RequirePackage{thmttools}
238   \RequirePackage{thm-restate}
239 \fi
240
241 \ifenmtls@
242   % Enumeration Tools
243   \RequirePackage{paralist}
244 \fi
245
246 \ifhypref@
247   % Hyper References
248   \RequirePackage{hyperref}
249   \hypersetup {
250     pdfsubject      = {},
251     pdfkeywords     = {},
252     pdfproducer     = {},
253     pdfcreator      = {},
254     pdfpagemode     = {UseNone},
255     pdfstartview    = {FitH},
256     urlcolor        = {blue},
257     colorlinks
258   }
259 \fi
260
261 \iffnttls@
262   % Font Tools
263   \RequirePackage[final]{microtype}
264 \fi

```

```

265
266 \ifcrv@
267   % Camera-Ready Version
268
269   %%...
270
271 \else
272   % Draft Version
273
274   %%...
275
276 \ifchgbar@
277   % Change Bars
278   \RequirePackage{changebar}
279 \fi
280
281 \iflinnum@
282   % Line Numbers
283   \if@twocolumn
284     \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
285   \else
286     \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
287   \fi
288 \fi
289
290   %%...
291
292 \fi
293
294 \fi
295 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
296 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
297 %** Auxiliary Font Declarations %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
298 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\mathbbo Bbo Math Font: ... to do!
299 \ifdef{\mathbbo}{\DeclareMathAlphabet{\mathbbo}{U}{bbold}{m}{n}}

\matheus Eus Math Font: ... to do!
300 \ifdef{\matheus}{\DeclareMathAlphabet{\matheus}{U}{eus}{m}{n}}

\mathpzc Pzc Math Font: ... to do!
301 \ifdef{\mathpzc}{\DeclareMathAlphabet{\mathpzc}{T1}{pzc}{m}{it}}

\mathscr Scr Math Font: ... to do!
302 \ifdef{\mathscr}{\DeclareMathAlphabet{\mathscr}{U}{rsfs}{m}{n}}

303 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
304 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
305 %** Text Meta Commands %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
306 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\newtxt ... to do!


- \newtxt[\rmfamily]{Name}[sub][sup][Ext] = “NamesubsupExt”
- \newtxt[\sffamily]{Name}[sub][sup][Ext] = “NamesubsupExt”
- \newtxt[\ttfamily]{Name}[sub][sup][Ext] = “NamesubsupExt”
- \newtxt![\rmfamily]{Name}[sub][sup][Ext] = “NamesubsupExt”
- \newtxt![\sffamily]{Name}[sub][sup][Ext] = “NamesubsupExt”
- \newtxt![\ttfamily]{Name}[sub][sup][Ext] = “NamesubsupExt”

```

```

307 \DeclareRobustCommand{\newtxt}
308   {\ifexclavar{\@snewtxt}{\@newtxt}}
309 \DeclareRobustCommandx{\@newtxt}[5][1=, 3=, 4=, 5=]
310   {\text{\#1\#2\txsubsup{\#1}{\#3}{\#4}{\#5}\xspace}}
311 \DeclareRobustCommandx{\@snewtxt}[5][1=, 3=, 4=, 5=]
312   {\#1\#2\txsubsup{\#1}{\#3}{\#4}{\#5}\normalfont\xspace}}

```

\newtxtsty ... to do!

- \newtxtsty{\rmfamily}{Name}[sub][sup][Ext] = “Name^{sub}Ext”
- \newtxtsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext] = “Name^{sub}Ext”
- \newtxtsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext] = “Name^{sub}Ext”
- \newtxtsty!\rmfamily}{Name}[sub][sup][Ext] = “Name^{sub}Ext”
- \newtxtsty!\rmfamily}[\sffamily]{Name}[sub][sup][Ext] = “Name^{sub}Ext”
- \newtxtsty!\rmfamily}[\ttfamily]{Name}[sub][sup][Ext] = “Name^{sub}Ext”

```

313 \DeclareRobustCommand{\newtxtsty}
314   {\ifexclavar{\@snewtxtsty}{\@newtxtsty}}
315 \DeclareRobustCommandx{\@newtxtsty}[2][2=]
316   {\newtxt[\defval{\#2}{\#1}]}
317 \DeclareRobustCommandx{\@snewtxtsty}[2][2=]
318   {\newtxt![\defval{\#2}{\#1}]}

```

\newtxtarg ... to do!

- \newtxtarg{\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtarg[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtarg[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtarg!\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtarg!\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtarg!\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”

```

319 \DeclareRobustCommand{\newtxtarg}
320   {\ifexclavar{\@snewtxtarg}{\@newtxtarg}}
321 \DeclareRobustCommandx{\@newtxtarg}[7][1=, 3=, 4=, 5=, 7=]
322   {\newtxt{\#1}{\#2}{\#3}{\#4}[\argmid{\#5}{\#6}{\#7}]}
323 \DeclareRobustCommandx{\@snewtxtarg}[7][1=, 3=, 4=, 5=, 7=]
324   {\newtxt!{\#1}{\#2}{\#3}{\#4}[\argmid{\#5}{\#6}{\#7}]}

```

\newtxtargsty ... to do!

- \newtxtargsty{\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtargsty{\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtargsty{\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtargsty!\rmfamily}{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtargsty!\rmfamily}[\sffamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”
- \newtxtargsty!\rmfamily}[\ttfamily]{Name}[sub][sup][Ext1]{Arg}[Ext2] = “Name^{sub}Ext1(Arg)Ext2”

```

325 \DeclareRobustCommand{\newtxtargsty}
326   {\ifexclavar{\@snewtxtargsty}{\@newtxtargsty}}
327 \DeclareRobustCommandx{\@newtxtargsty}[2][2=]
328   {\newtxtarg[\defval{\#2}{\#1}]}
329 \DeclareRobustCommandx{\@snewtxtargsty}[2][2=]
330   {\newtxtarg![\defval{\#2}{\#1}]}

```

\newtxtoarg ... to do!

- \newtxtoarg{\rmfamily}{Name}[sub][sup][Arg] = “Name^{sub}(Arg)”
- \newtxtoarg[\sffamily]{Name}[sub][sup][Arg] = “Name^{sub}(Arg)”
- \newtxtoarg[\ttfamily]{Name}[sub][sup][Arg] = “Name^{sub}(Arg)”
- \newtxtoarg!\rmfamily}{Name}[sub][sup][Arg] = “Name^{sub}(Arg)”
- \newtxtoarg!\rmfamily}[\sffamily]{Name}[sub][sup][Arg] = “Name^{sub}(Arg)”

- $\backslash\text{newtxtoarg}!\{\text{ttfamily}\}\{\text{Name}\}[\text{sub}][\text{sup}][\text{Arg}] = \text{Name}_{\text{sub}}^{\text{sup}}(\text{Arg})$

```

331 \DeclareRobustCommand{\newtxtoarg}
332   {\ifexclavar{\@snewtxtoarg}\@newtxtoarg}}
333 \DeclareRobustCommand{\@newtxtoarg}[5][1=, 3=, 4=, 5=]
334   {\newtxtarg[#1]{#2}[#3][#4][#5]}
335 \DeclareRobustCommand{\@snewtxtoarg}[5][1=, 3=, 4=, 5=]
336   {\newtxtarg![#1]{#2}[#3][#4][#5]}

```

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

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

```

337 \DeclareRobustCommand{\newtxtoargsty}
338   {\ifexclavar{\@snewtxtoargsty}\@newtxtoargsty}}
339 \DeclareRobustCommand{\@newtxtoargsty}[2][2=]
340   {\newtxtoarg[\defval{#2}]{#1}}
341 \DeclareRobustCommand{\@snewtxtoargsty}[2][2=]
342   {\newtxtoarg!\defval{#2}]{#1}}

```

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

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

```

343 \DeclareRobustCommand{\newtxtpar}
344   {\ifexclavar{\@snewtxtpar}\@newtxtpar}}
345 \DeclareRobustCommand{\@newtxtpar}[7][1=, 3=, 4=, 5=, 7=]
346   {\newtxt[#1]{#2}[#3][#4][\argmid{#5}{#6}]{#7}}
347 \DeclareRobustCommand{\@snewtxtpar}[7][1=, 3=, 4=, 5=, 7=]
348   {\newtxt![#1]{#2}[#3][#4][\argmid{#5}{#6}]{#7}}

```

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

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

```

349 \DeclareRobustCommand{\newtxtparsty}
350   {\ifexclavar{\@snewtxtparsty}\@newtxtparsty}}
351 \DeclareRobustCommand{\@newtxtparsty}[2][2=]
352   {\newtxtpar[\defval{#2}]{#1}}
353 \DeclareRobustCommand{\@snewtxtparsty}[2][2=]
354   {\newtxtpar!\defval{#2}]{#1}}

```

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

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


```

374 \DeclareRobustCommand{\txtoarg}
375   {\ifexclavar{\newtxtoargsty!\txtsty}}{\newtxtoargsty{\txtsty}}}

```

- \txtpar{Name}[sub][sup]{Ext1}{Par}{Ext2} = “Name^{SUB}Ext1[Par]Ext2”
- \txtpar[\scshape]{Name}[sub][sup]{Ext1}{Par}{Ext2} = “NAME^{SUB}EXT1[PAR]EXT2”
- \txtpar[\bfseries]{Name}[sub][sup]{Ext1}{Par}{Ext2} = “**Name^{SUB}Ext1[Par]Ext2**”
- \txtpar!{Name}[sub][sup]{Ext1}{Par}{Ext2} = “Name^{SUB}Ext1[Par]Ext2”
- \txtpar![\scshape]{Name}[sub][sup]{Ext1}{Par}{Ext2} = “NAME^{SUB}EXT1[PAR]EXT2”
- \txtpar![\bfseries]{Name}[sub][sup]{Ext1}{Par}{Ext2} = “**Name^{SUB}Ext1[Par]Ext2**”

- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{N}\texttt{a}\texttt{m}\texttt{e}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"Name"}_{\text{sub}}^{\text{sup}}[\text{Par}]$
- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{\textit{scshape}}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"NAME"}_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$
- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{\textbf{bfseries}}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"Name"}_{\text{sub}}^{\text{sup}}[\text{Par}]$
- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{\textit{!}}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"Name"}_{\text{sub}}^{\text{sup}}[\text{Par}]$
- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{\textit{!}}\}\texttt{\textit{scshape}}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"NAME"}_{\text{SUB}}^{\text{SUP}}[\text{PAR}]$
- $\text{\texttt{\texttt{t}\texttt{x}\texttt{t}\texttt{o}\texttt{p}\texttt{a}\texttt{r}\{\texttt{\textit{!}}\}\texttt{\textbf{bfseries}}\}\texttt{\textsubscript{sub}}\texttt{sup}\{\texttt{P}\texttt{a}\texttt{r}\}}} = \text{"Name"}_{\text{sub}}^{\text{sup}}[\text{Par}]$

- `\cmdtxt{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};`
`\txtNewCmd{Name}[sub][sup][Ext] = NAMESUBSUPEXT`
`\txtNewCmd!{Name}[sub][sup][Ext] = NAMESUBSUPEXT`

- `\cmdtxtarg{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};`
`\txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBSUBEXT1(ARG)EXT2`
`\txtargNewCmd!{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBSUBEXT1(ARG)EXT2`

- `\cmdttxtoarg{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};`
`\txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUBSUB(ARG)`
`\txtoargNewCmd!{Name}[sub][sup][Arg] = NAMESUBSUB!(ARG)`

```

393 \DeclareRobustCommand{\cmdtxtoarg}[1]
394   {\csdef{txtoarg#1}%
395     {\protect\ifexclavar%
396       {\newtxtoargsty!\csname txtsty#1\endcsname}}}%
397     {\newtxtoargsty{\csname txtsty#1\endcsname}}}}

```

\cmdtxtpar ... to do!

```

• \cmdtxtpar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
  \txtparNewCmd!{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2

398 \DeclareRobustCommand{\cmdtxtpar}[1]
399   {\csdef{txtpar#1}%
400     {\protect\ifexclavar%
401       {\newtxtparsty!\csname txtsty#1\endcsname}}}%
402     {\newtxtparsty{\csname txtsty#1\endcsname}}}}

```

\cmdtxtopar ... to do!

```

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

403 \DeclareRobustCommand{\cmdtxtopar}[1]
404   {\csdef{txtopar#1}%
405     {\protect\ifexclavar%
406       {\newtxtoparsty!\csname txtsty#1\endcsname}}}%
407     {\newtxtoparsty{\csname txtsty#1\endcsname}}}}

```

\cmdtxtall ... to do!

```

• \cmdtxtall{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
  \txtNewCmd{Name}[sub][sup][Ext] = NAMESUBEXT
  \txtargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
  \txtoargNewCmd{Name}[sub][sup][Arg] = NAMESUB(ARG)
  \txtparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2
  \txtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]

408 \DeclareRobustCommand{\cmdtxtall}[1]
409   {\cmdtxt{#1}\cmdtxtarg{#1}\cmdtxtoarg{#1}\cmdtxtpar{#1}\cmdtxtopar{#1}}

410 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

```

\usrtxt ... to do!

```

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

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

411 \DeclareRobustCommandx{\usrtxt}[4][4=]
412   {\csdef{#1#2}%
413     {\protect\ifexclavar%
414       {\csname txt#3\endcsname!\defval{#4}{#1}}}%
415     {\csname txt#3\endcsname{\defval{#4}{#1}}}}}

```

```

416 %*****%
417 %*****%
418 %** Math Meta Commands *****%
419 %*****%

```

`\newmth ... to do!`

- `\newmth[mathrm]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmth[mathsf]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmth[mathtt]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmth![mathrm]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmth![mathsf]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmth![mathtt]{Name}[sub][sup][Ext] = "NamesupsubExt"`

```

420 \DeclareRobustCommand{\newmth}
421   {\ifexclavar{\@snewmth}{\@newmth}}
422 \DeclareRobustCommandx{\@newmth}[5][1=, 3=, 4=, 5=]
423   {\ensuremath{\csname#1\endcsname{#2}\mthsubsup{#3}{#4}{#5}}}
424 \DeclareRobustCommandx{\@snewmth}[5][1=, 3=, 4=, 5=]
425   {\ensuremath{\csname#1\endcsname #2\mthsubsup{#3}{#4}{#5}}}

```

`\newmthsty ... to do!`

- `\newmthsty{mathrm}{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmthsty{mathrm}[mathsf]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmthsty{mathrm}[mathtt]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmthsty!{mathrm}{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmthsty!{mathrm}[mathsf]{Name}[sub][sup][Ext] = "NamesupsubExt"`
- `\newmthsty!{mathrm}[mathtt]{Name}[sub][sup][Ext] = "NamesupsubExt"`

```

426 \DeclareRobustCommand{\newmthsty}
427   {\ifexclavar{\@snewmthsty}{\@newmthsty}}
428 \DeclareRobustCommandx{\@newmthsty}[2][2=]
429   {\newmth[\defval{#2}{#1}]}
430 \DeclareRobustCommandx{\@snewmthsty}[2][2=]
431   {\newmth![\defval{#2}{#1}]}

```

`\newmtharg ... to do!`

- `\newmtharg{mathrm}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmtharg[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmtharg!{mathrm}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmtharg!{mathsf}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmtharg!{mathtt}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`

```

432 \DeclareRobustCommand{\newmtharg}
433   {\ifexclavar{\@snewmtharg}{\@newmtharg}}
434 \DeclareRobustCommandx{\@newmtharg}[7][1=, 3=, 4=, 5=, 7=]
435   {\newmth{#1}{#2}{#3}{#4}[\argmid{#5}{\left}{\right)}\arglef{\!}{#7}]}
436 \DeclareRobustCommandx{\@snewmtharg}[7][1=, 3=, 4=, 5=, 7=]
437   {\newmth{#1}{#2}{#3}{#4}[\argmid{#5}{\left}{\right)}{#7}]}

```

`\newmthargsty ... to do!`

- `\newmthargsty{mathrm}{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmthargsty{mathrm}[mathsf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`
- `\newmthargsty{mathrm}[mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "NamesupsubExt1(ArgExEx)Ext2"`

- $\backslash\mathrm{newmthargsty}\{\mathrm{mathrm}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2\text{”}$
- $\backslash\mathrm{newmthargsty}\{\mathrm{mathrm}\}[\mathrm{mathsf}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2\text{”}$
- $\backslash\mathrm{newmthargsty}\{\mathrm{mathrm}\}[\mathrm{mathtt}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2\text{”}$

```

438 \DeclareRobustCommand{\newmthargsty}
439   {\ifexclavar{\@snewmthargsty}{\@newmthargsty}}
440 \DeclareRobustCommandx{\@newmthargsty}[2][2=]
441   {\newmtharg[\defval{#2}{#1}]}
442 \DeclareRobustCommandx{\@snewmthargsty}[2][2=]
443   {\newmtharg![\defval{#2}{#1}]}

```

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

- $\backslash\mathrm{newmthoarg}[\mathrm{mathrm}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoarg}[\mathrm{mathsf}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoarg}[\mathrm{mathtt}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoarg}!\{\mathrm{mathrm}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoarg}!\{\mathrm{mathsf}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoarg}!\{\mathrm{mathtt}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$

```

444 \DeclareRobustCommand{\newmthoarg}
445   {\ifexclavar{\@snewmthoarg}{\@newmthoarg}}
446 \DeclareRobustCommandx{\@newmthoarg}[5][1=, 3=, 4=, 5=]
447   {\newmtharg[#1]{#2}[#3][#4][\{#5\}]}
448 \DeclareRobustCommandx{\@snewmthoarg}[5][1=, 3=, 4=, 5=]
449   {\newmtharg![#1]{#2}[#3][#4][\{#5\}]}

```

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

- $\backslash\mathrm{newmthoargsty}\{\mathrm{mathrm}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoargsty}\{\mathrm{mathrm}\}[\mathrm{mathsf}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoargsty}\{\mathrm{mathrm}\}[\mathrm{mathtt}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoargsty}!\{\mathrm{mathrm}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoargsty}!\{\mathrm{mathrm}\}[\mathrm{mathsf}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$
- $\backslash\mathrm{newmthoargsty}!\{\mathrm{mathrm}\}[\mathrm{mathtt}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Arg}^{\mathrm{Ex}}\{\mathrm{Ex}\}] = \text{“Name}_{sub}^{sup}(Arg^{Ex^{Ex}})\text{”}$

```

450 \DeclareRobustCommand{\newmthoargsty}
451   {\ifexclavar{\@snewmthoargsty}{\@newmthoargsty}}
452 \DeclareRobustCommandx{\@newmthoargsty}[2][2=]
453   {\newmthoarg[\defval{#2}{#1}]}
454 \DeclareRobustCommandx{\@snewmthoargsty}[2][2=]
455   {\newmthoarg![\defval{#2}{#1}]}

```

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

- $\backslash\mathrm{newmthpar}[\mathrm{mathrm}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$
- $\backslash\mathrm{newmthpar}[\mathrm{mathsf}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$
- $\backslash\mathrm{newmthpar}[\mathrm{mathtt}]\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$
- $\backslash\mathrm{newmthpar}!\{\mathrm{mathrm}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$
- $\backslash\mathrm{newmthpar}!\{\mathrm{mathsf}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$
- $\backslash\mathrm{newmthpar}!\{\mathrm{mathtt}\}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}}\{\mathrm{Ex}\}\}[\mathrm{Ext2}] = \text{“Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2\text{”}$

```

456 \DeclareRobustCommand{\newmthpar}
457   {\ifexclavar{\@snewmthpar}{\@newmthpar}}
458 \DeclareRobustCommandx{\@newmthpar}[7][1=, 3=, 4=, 5=, 7=]
459   {\newmth[#1]{#2}{#3}{#4}[\argmid{#5}\left[\right]\arglef{\!}{#7}]}
460 \DeclareRobustCommandx{\@snewmthpar}[7][1=, 3=, 4=, 5=, 7=]
461   {\newmth[#1]{#2}{#3}{#4}[\argmid{#5}{#6}{#7}]}

```

\newmthparsty ... to do!

- $\newmthparsty{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$
- $\newmthparsty{\mathrm}{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$
- $\newmthparsty{\mathrm}{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$
- $\newmthparsty!\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$
- $\newmthparsty!\mathrm{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$
- $\newmthparsty!\mathrm{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[Ext1]{\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}}[Ext2] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}Ext1\left[Par^{Ex^{Ex}}\right]Ext2\text{”}$

```

462 \DeclareRobustCommand{\newmthparsty}
463   {\ifexclavar{\@snewmthparsty}{\@newmthparsty}}
464 \DeclareRobustCommandx{\@newmthparsty}[2][2=]
465   {\newmthpar[\defval{#2}{#1}]}
466 \DeclareRobustCommandx{\@snewmthparsty}[2][2=]
467   {\newmthpar![\defval{#2}{#1}]}

```

\newmthopar ... to do!

- $\newmthopar{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthopar{\mathrm}{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthopar{\mathrm}{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthopar!\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthopar!\mathrm{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthopar!\mathrm{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$

```

468 \DeclareRobustCommand{\newmthopar}
469   {\ifexclavar{\@snewmthopar}{\@newmthopar}}
470 \DeclareRobustCommandx{\@newmthopar}[5][1=, 3=, 4=, 5=]
471   {\newmthpar[#1]{#2}{#3}{#4}[\argmid{#5}]}
472 \DeclareRobustCommandx{\@snewmthopar}[5][1=, 3=, 4=, 5=]
473   {\newmthpar![#1]{#2}{#3}{#4}[\argmid{#5}]}

```

\newmthoparsty ... to do!

- $\newmthoparsty{\mathrm}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthoparsty{\mathrm}{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthoparsty{\mathrm}{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthoparsty!\mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthoparsty!\mathrm{mathsf}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$
- $\newmthoparsty!\mathrm{mathtt}{Name}_{\mathrm{sub}}^{\mathrm{sup}}[\mathrm{Par}^{\mathrm{Ex}}\mathrm{Ex}] = \text{“Name}_{\mathrm{sub}}^{\mathrm{sup}}\left[Par^{Ex^{Ex}}\right]\text{”}$

```

474 \DeclareRobustCommand{\newmthoparsty}
475   {\ifexclavar{\@snewmthoparsty}{\@newmthoparsty}}
476 \DeclareRobustCommandx{\@newmthoparsty}[2][2=]
477   {\newmthopar[\defval{#2}{#1}]}
478 \DeclareRobustCommandx{\@snewmthoparsty}[2][2=]
479   {\newmthopar![\defval{#2}{#1}]}

```

`\mthsubsup ... to do!`

```
480 \DeclareRobustCommand{\mthsubsup}[2]
481   {\empchk{#1}_{#1}}\empchk{#2}{^{#2}}}

482 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

`\mth ... to do!`

```
• \mth{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
• \mth[\mathbf]{Name}[sub][sup][Ext] = "\mathbf{Name}_{sub}^{sup}Ext"
• \mth[\mathtt]{Name}[sub][sup][Ext] = "\mathtt{Name}_{sub}^{sup}Ext"
• \mth!{Name}[sub][sup][Ext] = "Name_{sub}^{sup}Ext"
• \mth![\mathbf]{Name}[sub][sup][Ext] = "\mathbf{Name}_{sub}^{sup}Ext"
• \mth![\mathtt]{Name}[sub][sup][Ext] = "\mathtt{Name}_{sub}^{sup}Ext"

483 \DeclareRobustCommand{\mth}
484   {\ifexclavar{\newmthsty}{\mthsty}}{\newmthsty{\mthsty}}}
```

`\mtharg ... to do!`

```
• \mtharg{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"
• \mtharg[\mathbf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "\mathbf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"
• \mtharg[\mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "\mathtt{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"
• \mtharg!{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"
• \mtharg![\mathbf]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "\mathbf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"
• \mtharg![\mathtt]{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = "\mathtt{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2"

485 \DeclareRobustCommand{\mtharg}
486   {\ifexclavar{\newmthargsty}{\mthsty}}{\newmthargsty{\mthsty}}}
```

`\mthoarg ... to do!`

```
• \mthoarg{Name}[sub][sup][Arg^{Ex^{Ex}}] = "Name_{sub}^{sup}(Arg^{Ex^{Ex}})"
• \mthoarg[\mathbf]{Name}[sub][sup][Arg^{Ex^{Ex}}] = "\mathbf{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})"
• \mthoarg[\mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}] = "\mathtt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})"
• \mthoarg!{Name}[sub][sup][Arg^{Ex^{Ex}}] = "Name_{sub}^{sup}(Arg^{Ex^{Ex}})"
• \mthoarg![\mathbf]{Name}[sub][sup][Arg^{Ex^{Ex}}] = "\mathbf{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})"
• \mthoarg![\mathtt]{Name}[sub][sup][Arg^{Ex^{Ex}}] = "\mathtt{Name}_{sub}^{sup}(Arg^{Ex^{Ex}})"

487 \DeclareRobustCommand{\mthoarg}
488   {\ifexclavar{\newmthoargsty}{\mthsty}}{\newmthoargsty{\mthsty}}}
```

`\mthpar ... to do!`

```
• \mthpar{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"
• \mthpar[\mathbf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "\mathbf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"
• \mthpar[\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "\mathtt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"
• \mthpar!{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"
• \mthpar![\mathbf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "\mathbf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"
• \mthpar![\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = "\mathtt{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2"

489 \DeclareRobustCommand{\mthpar}
490   {\ifexclavar{\newmthparsty}{\mthsty}}{\newmthparsty{\mthsty}}}
```

`\mthopar ... to do!`

- $\text{\mthopar{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$
- $\text{\mthopar{mathbf}{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$
- $\text{\mthopar{mathtt}{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$
- $\text{\mthopar!{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$
- $\text{\mthopar!{mathbf}{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$
- $\text{\mthopar!{mathtt}{Name}[sub][sup]{Par^{Ex^{Ex}}}} = \text{"Name}_{sub}^{sup}[Par^{Ex^{Ex}}]"}$

491 \DeclareRobustCommand{\mthopar}

492 {\ifexclavar{\newmthoparsty!\mthsty}}{\newmthoparsty{\mthsty}}}

\mthsty ... to do!

493 \def\mthsty

494 {}

495 %*****%

\cmdmth ... to do!

• \cmdmth{NewCmd}; \newcommand{\mthstyNewCmd}{\mathtt};

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

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

496 \DeclareRobustCommand{\cmdmth}[1]

497 {\csdef{mth#1}%

498 {\protect\ifexclavar{\newmthsty!\mthsty#1}}{\newmthsty{\mthsty#1}}}

\cmdmtharg ... to do!

• \cmdmtharg{NewCmd}; \newcommand{\mthstyNewCmd}{\mathtt};

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

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

499 \DeclareRobustCommand{\cmdmtharg}[1]

500 {\csdef{mtharg#1}%

501 {\protect\ifexclavar{\newmthargsty!\mthsty#1}}{\newmthargsty{\mthsty#1}}}

\cmdmthoarg ... to do!

• \cmdmthoarg{NewCmd}; \newcommand{\mthstyNewCmd}{\mathtt};

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

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

502 \DeclareRobustCommand{\cmdmthoarg}[1]

503 {\csdef{mthoarg#1}%

504 {\protect\ifexclavar{\newmthoargsty!\mthsty#1}}{\newmthoargsty{\mthsty#1}}}

\cmdmthpar ... to do!

• \cmdmthpar{NewCmd}; \newcommand{\mthstyNewCmd}{\mathtt};

\mthparNewCmd{Name}[sub][sup]{Ext1}{Par^{Ex^{Ex}}}[Ext2] = $\text{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

\mthparNewCmd!{Name}[sub][sup]{Ext1}{Par^{Ex^{Ex}}}[Ext2] = $\text{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$

505 \DeclareRobustCommand{\cmdmthpar}[1]

506 {\csdef{mthpar#1}%

507 {\protect\ifexclavar{\newmthparsty!\mthsty#1}}{\newmthparsty{\mthsty#1}}}

\cmdmthopar ... to do!

• \cmdmthopar{NewCmd}; \newcommand{\mthstyNewCmd}{\mathtt};

\mthoparNewCmd{Name}[sub][sup]{Par^{Ex^{Ex}}} = $\text{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$

\mthoparNewCmd!{Name}[sub][sup]{Par^{Ex^{Ex}}} = $\text{Name}_{sub}^{sup}[Par^{Ex^{Ex}}]$

508 \DeclareRobustCommand{\cmdmthopar}[1]

509 {\csdef{mthopar#1}%

510 {\protect\ifexclavar{\newmthoparsty!\mthsty#1}}{\newmthoparsty{\mthsty#1}}}

\cmdmthall ... to do!

- \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthNewCmd{Name}[sub][sup][Ext] = Name^{sub}_{sup}Ext
\mthargNewCmd{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name^{sub}_{sup}Ext1(Arg^{Ex^{Ex}})Ext2
\mthargNewCmd!{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = Name^{sub}_{sup}Ext1(Arg^{Ex^{Ex}})Ext2
\mthoargNewCmd{Name}[sub][sup][Arg^{Ex^{Ex}}] = Name^{sub}_{sup}(Arg^{Ex^{Ex}})
\mthoargNewCmd!{Name}[sub][sup][Arg^{Ex^{Ex}}] = Name^{sub}_{sup}(Arg^{Ex^{Ex}})
\mthparNewCmd{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name^{sub}_{sup}Ext1[Par^{Ex^{Ex}}]Ext2
\mthparNewCmd!{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = Name^{sub}_{sup}Ext1[Par^{Ex^{Ex}}]Ext2
\mthoparNewCmd{Name}[sub][sup][Par^{Ex^{Ex}}] = Name^{sub}_{sup}[Par^{Ex^{Ex}}]
\mthoparNewCmd!{Name}[sub][sup][Par^{Ex^{Ex}}] = Name^{sub}_{sup}[Par^{Ex^{Ex}}]

```

511 \DeclareRobustCommand{\cmdmthall}[1]
512   {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

513 %%*****%

```

\usrmth ... to do!

- \usrmth{cmdName}{Suf}{};
\cmdNameSuf = cmdName
\cmdNameSuf* = cmdName*
\usrmth{cmdName}{Suf}{arg};
\cmdNameSuf{Arg^{Ex^{Ex}}} = cmdName(Arg^{Ex^{Ex}})
\cmdNameSuf!{Arg^{Ex^{Ex}}} = cmdName(Arg^{Ex^{Ex}})
\usrmth{cmdName}{Suf}{par};
\cmdNameSuf{Par^{Ex^{Ex}}} = cmdName[Par^{Ex^{Ex}}]
\cmdNameSuf!{Par^{Ex^{Ex}}} = cmdName[Par^{Ex^{Ex}}]
- \usrmth{cmdName}{Suf}{}[newName];
\cmdNameSuf = newName
\cmdNameSuf* = newName*
\usrmth{cmdName}{Suf}{arg}[newName];
\cmdNameSuf{Arg^{Ex^{Ex}}} = newName(Arg^{Ex^{Ex}})
\cmdNameSuf!{Arg^{Ex^{Ex}}} = newName(Arg^{Ex^{Ex}})
\usrmth{cmdName}{Suf}{par}[newName];
\cmdNameSuf{Par^{Ex^{Ex}}} = newName[Par^{Ex^{Ex}}]
\cmdNameSuf!{Par^{Ex^{Ex}}} = newName[Par^{Ex^{Ex}}]

```

514 \DeclareRobustCommandx{\usrmth}[4][4=]
515   {\csdef{#1#2}%
516     {\protect\ifexclavar%
517       {\csname mth#3\endcsname!\defval{#4}{#1}}}%
518     {\csname mth#3\endcsname{\defval{#4}{#1}}}}

519 %%*****%

```

\usrmthlatlow ... to do!

```

520 \DeclareRobustCommandx{\usrmthlatlow}[4][4=]
521   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlow{#1#2}{mth#3}}

```

\usrmthlatupp ... to do!

```

522 \DeclareRobustCommandx{\usrmthlatupp}[4][4=]
523   {\usrmth{#1}{#2}{#3}[#4]\seqoflatupp{#1#2}{mth#3}}

```

\usrmthlatlet ... to do!

```

524 \DeclareRobustCommandx{\usrmthlatlet}[4][4=]
525   {\usrmth{#1}{#2}{#3}[#4]\seqoflatlet{#1#2}{mth#3}}

```

```

\usrmthgrklow ... to do!
526 \DeclareRobustCommandx{\usrmthgrklow}[4][4=]
527   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklow{#1#2}{mth#3}}

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

\usrmthgrklet ... to do!
530 \DeclareRobustCommandx{\usrmthgrklet}[4][4=]
531   {\usrmth{#1}{#2}{#3}[#4]\seqofgrklet{#1#2}{mth#3}}

\usrmthlow ... to do!
532 \DeclareRobustCommandx{\usrmthlow}[4][4=]
533   {\usrmth{#1}{#2}{#3}[#4]\seqoflow{#1#2}{mth#3}}

\usrmthupp ... to do!
534 \DeclareRobustCommandx{\usrmthupp}[4][4=]
535   {\usrmth{#1}{#2}{#3}[#4]\seqofupp{#1#2}{mth#3}}

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

538 %%*****%
539 %%*****%
540 %%** Text Macro Generators *****%
541 %%*****%
542 \iftxtgen@

\txtdef ... to do!
\txtargetdef • \txtdef{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
\txtpardef • \txtargetdef{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
• \txtpardef{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 

543 %% Style for Definitions
544 \cmdtxtall{def}
545 \DeclareRobustCommand{\txtstydef}{\normalfont\bfseries\em}

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

546 \DeclareRobustCommandx{\cmdtxtdef}[2][2=]
547   {\usrtxt{#1}{def}[#2]}

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

548 \DeclareRobustCommandx{\cmdtxttargetdef}[2][2=]
549   {\usrtxt{#1}{argdef}[#2]}

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

```

```

550 \DeclareRobustCommandx{\cmdtxttoargdef}[2][2=]
551   {\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] =  $newName_{sub}^{sub}ext1[par]ext2$ 
552 \DeclareRobustCommandx{\cmdtxtpardef}[2][2=]
553   {\usrtxt{#1}{\pardef}[#2]}

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

\txtabr ... to do!
\txtgabr
\txtparabr
  • \txtabr{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
  • \txtgabr{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \txtparabr{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
556 %% Style for Abbreviations
557 \cmdtxtall{abr}
558 \DeclareRobustCommand{\txtstyabr}{\em}

\cmdtxtabr ... to do!
  • \cmdtxtabr{cmdName};
    \cmdName[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
  • \cmdtxtabr{cmdName}[newName];
    \cmdName[sub][sub][ext] =  $newName_{sub}^{sub}ext$ 
559 \DeclareRobustCommandx{\cmdtxtabr}[2][2=]
560   {\usrtxt{#1}{\abr}[#2]}

\cmdtxtgabr ... to do!
  • \cmdtxtgabr{cmdName};
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
  • \cmdtxtgabr{cmdName}[newName];
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $newName_{sub}^{sub}ext1(arg)ext2$ 
561 \DeclareRobustCommandx{\cmdtxtgabr}[2][2=]
562   {\usrtxt{#1}{\argabr}[#2]}

\cmdtxttoargabr ... to do!
  • \cmdtxttoargabr{cmdName};
    \cmdName[sub][sub][arg] =  $cmdName_{sub}^{sub}(arg)$ 
  • \cmdtxttoargabr{cmdName}[newName];
    \cmdName[sub][sub][arg] =  $newName_{sub}^{sub}(arg)$ 
563 \DeclareRobustCommandx{\cmdtxttoargabr}[2][2=]
564   {\usrtxt{#1}{\oargabr}[#2]}

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

```

```

565 \DeclareRobustCommandx{\cmdtxtparabr}[2][2=]
566   {\usrtxt{#1}{\{parabr}[#2]}

\cmdtxtoparabr ... to do!
  • \cmdtxtoparabr{cmdName};
    \cmdName[sub][sub][par] =  $\text{cmdName}_{\text{sub}}^{\text{sub}}[par]$ 
  • \cmdtxtoparabr{cmdName}[newName];
    \cmdName[sub][sub][par] =  $\text{newName}_{\text{sub}}^{\text{sub}}[par]$ 
567 \DeclareRobustCommandx{\cmdtxtoparabr}[2][2=]
568   {\usrtxt{#1}{\{oparabr}[#2]}

569 %%*****%

\txtname ... to do!
\txxtargname  • \txtname{Name}[sub][sup][Ext] =  $\text{NAME}_{\text{SUB}}^{\text{SUP}}\text{EXT}$ 
\txxtparname  • \txxtargname{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\text{NAME}_{\text{SUB}}^{\text{SUP}}\text{EXT1}(\text{ARG})\text{EXT2}$ 
               • \txxtparname{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\text{NAME}_{\text{SUB}}^{\text{SUP}}\text{EXT1}[\text{PAR}]\text{EXT2}$ 
570 %% Style for Names
571 \cmdtxtall{name}
572 \DeclareRobustCommand{\txtstynome}{\normalfont\mdseries\scshape\sffamily}

\cmdtxtname ... to do!
  • \cmdtxtname{cmdName};
    \cmdName[sub][sub][ext] =  $\text{CMDNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT}$ 
  • \cmdtxtname{cmdName}[newName];
    \cmdName[sub][sub][ext] =  $\text{NEWNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT}$ 
573 \DeclareRobustCommandx{\cmdtxtname}[2][2=]
574   {\usrtxt{#1}{\{name}[#2]}

\cmdtxtargname ... to do!
  • \cmdtxtargname{cmdName};
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $\text{CMDNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT1}(\text{ARG})\text{EXT2}$ 
  • \cmdtxtargname{cmdName}[newName];
    \cmdName[sub][sub][ext1]{arg}[ext2] =  $\text{NEWNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT1}(\text{ARG})\text{EXT2}$ 
575 \DeclareRobustCommandx{\cmdtxtargname}[2][2=]
576   {\usrtxt{#1}{\{argname}[#2]}

\cmdtxtoargname ... to do!
  • \cmdtxtoargname{cmdName};
    \cmdName[sub][sub][arg] =  $\text{CMDNAME}_{\text{SUB}}^{\text{SUB}}(\text{ARG})$ 
  • \cmdtxtoargname{cmdName}[newName];
    \cmdName[sub][sub][arg] =  $\text{NEWNAME}_{\text{SUB}}^{\text{SUB}}(\text{ARG})$ 
577 \DeclareRobustCommandx{\cmdtxtoargname}[2][2=]
578   {\usrtxt{#1}{\{oargname}[#2]}

\cmdtxtparname ... to do!
  • \cmdtxtparname{cmdName};
    \cmdName[sub][sub][ext1]{par}[ext2] =  $\text{CMDNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT1}[\text{PAR}]\text{EXT2}$ 
  • \cmdtxtparname{cmdName}[newName];
    \cmdName[sub][sub][ext1]{par}[ext2] =  $\text{NEWNAME}_{\text{SUB}}^{\text{SUB}}\text{EXT1}[\text{PAR}]\text{EXT2}$ 
579 \DeclareRobustCommandx{\cmdtxtparname}[2][2=]
580   {\usrtxt{#1}{\{parname}[#2]}

\cmdtxtoparname ... to do!
  • \cmdtxtoparname{cmdName};
    \cmdName[sub][sub][par] =  $\text{CMDNAME}_{\text{SUB}}^{\text{SUB}}[\text{PAR}]$ 
  • \cmdtxtoparname{cmdName}[newName];
    \cmdName[sub][sub][par] =  $\text{NEWNAME}_{\text{SUB}}^{\text{SUB}}[\text{PAR}]$ 

```

```

581 \DeclareRobustCommandx{\cmdtxtoparname}[2][2=]
582   {\usrtxt{#1}{\{oparname}[#2]}

\txtcom ... to do!
\txtargetcom      • \txtcom{Name}[sub][sup][Ext] = NAMESUBEXT
\txtparcom        • \txtargetcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAMESUBEXT1(ARG)EXT2
                  • \txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAMESUBEXT1[PAR]EXT2

583 %% Style for Complexities
584 \cmdtxtall{com}
585 \DeclareRobustCommand{\txtstycom}{\normalfont\mdseries\scshape\rmfamily}

\cmdtxtcom ... to do!
      • \cmdtxtcom{cmdName};
        \cmdName[sub][sub][ext] = CMDNAMESUBEXT
      • \cmdtxtcom{cmdName}[newName];
        \cmdName[sub][sub][ext] = NEWNAMESUBEXT
586 \DeclareRobustCommandx{\cmdtxtcom}[2][2=]
587   {\usrtxt{#1}{\{com}[#2]}

\cmdtxtargcom ... to do!
      • \cmdtxtargcom{cmdName};
        \cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAMESUBEXT1(ARG)EXT2
      • \cmdtxtargcom{cmdName}[newName];
        \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAMESUBEXT1(ARG)EXT2
588 \DeclareRobustCommandx{\cmdtxtargcom}[2][2=]
589   {\usrtxt{#1}{\{argcom}[#2]}

\cmdtxtoargcom ... to do!
      • \cmdtxtoargcom{cmdName};
        \cmdName[sub][sub][arg] = CMDNAMESUB(ARG)
      • \cmdtxtoargcom{cmdName}[newName];
        \cmdName[sub][sub][arg] = NEWNAMESUB(ARG)
590 \DeclareRobustCommandx{\cmdtxtoargcom}[2][2=]
591   {\usrtxt{#1}{\{oargcom}[#2]}

\cmdtxtparcom ... to do!
      • \cmdtxtparcom{cmdName};
        \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAMESUBEXT1[PAR]EXT2
      • \cmdtxtparcom{cmdName}[newName];
        \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAMESUBEXT1[PAR]EXT2
592 \DeclareRobustCommandx{\cmdtxtparcom}[2][2=]
593   {\usrtxt{#1}{\{parcom}[#2]}

\cmdtxttoparcom ... to do!
      • \cmdtxttoparcom{cmdName};
        \cmdName[sub][sub][par] = CMDNAMESUB[PAR]
      • \cmdtxttoparcom{cmdName}[newName];
        \cmdName[sub][sub][par] = NEWNAMESUB[PAR]
594 \DeclareRobustCommandx{\cmdtxttoparcom}[2][2=]
595   {\usrtxt{#1}{\{oparcom}[#2]}

596 \fi
597 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
598 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
599 %** Math Macro Generators %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
600 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
601 \ifmthgen@

```

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\mthname ... to do!
\mthargname • \mthname{NAME}[sub][sup][Ext] =  $\mathcal{NAM}\mathcal{E}_{sub}^{sup}Ext$ 
\mthparname • \mthargname{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAM}\mathcal{E}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
• \mthargname!{NAME}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAM}\mathcal{E}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
• \mthparname{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAM}\mathcal{E}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
• \mthparname!{NAME}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{NAM}\mathcal{E}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
602 %% Style for Names
603 \cmdmthall{name}
604 \DeclareRobustCommand{\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
605 \seqoflatupp{Name}{mthname}

\cmdmthname ... to do!
• \cmdmthname{CMDNAME};
\CMDNAMEName[sub][sub][ext] =  $\mathcal{CMDN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext$ 
• \cmdmthname{cmdName}[NEWNAME];
\cmdNameName[sub][sub][ext] =  $\mathcal{NEN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext$ 
606 \DeclareRobustCommandx{\cmdmthname}[2][2=]
607 {\usrmth{#1}{Name}{name}[#2]}

\cmdmthargname ... to do!
• \cmdmthargname{CMDNAME};
\CMDNAMEName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{CMDN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext1(arg)ext2$ 
• \cmdmthargname{cmdName}[NEWNAME];
\cmdNameName[sub][sub][ext1]{arg}[ext2] =  $\mathcal{NEN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext1(arg)ext2$ 
608 \DeclareRobustCommandx{\cmdmthargname}[2][2=]
609 {\usrmth{#1}{Name}{argname}[#2]}

\cmdmthoargname ... to do!
• \cmdmthoargname{CMDNAME};
\CMDNAMEName[sub][sub][arg] =  $\mathcal{CMDN}\mathcal{AM}\mathcal{E}_{sub}^{sub}(arg)$ 
• \cmdmthoargname{cmdName}[NEWNAME];
\cmdNameName[sub][sub][arg] =  $\mathcal{NEN}\mathcal{AM}\mathcal{E}_{sub}^{sub}(arg)$ 
610 \DeclareRobustCommandx{\cmdmthoargname}[2][2=]
611 {\usrmth{#1}{Name}{oargname}[#2]}

\cmdmthparname ... to do!
• \cmdmthparname{CMDNAME};
\CMDNAMEName[sub][sub][ext1]{par}[ext2] =  $\mathcal{CMDN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext1[par]ext2$ 
• \cmdmthparname{cmdName}[NEWNAME];
\cmdNameName[sub][sub][ext1]{par}[ext2] =  $\mathcal{NEN}\mathcal{AM}\mathcal{E}_{sub}^{sub}ext1[par]ext2$ 
612 \DeclareRobustCommandx{\cmdmthparname}[2][2=]
613 {\usrmth{#1}{Name}{parname}[#2]}

\cmdmthoparname ... to do!
• \cmdmthoparname{CMDNAME};
\CMDNAMEName[sub][sub][par] =  $\mathcal{CMDN}\mathcal{AM}\mathcal{E}_{sub}^{sub}[par]$ 
• \cmdmthoparname{cmdName}[NEWNAME];
\cmdNameName[sub][sub][par] =  $\mathcal{NEN}\mathcal{AM}\mathcal{E}_{sub}^{sub}[par]$ 
614 \DeclareRobustCommandx{\cmdmthoparname}[2][2=]
615 {\usrmth{#1}{Name}{oparname}[#2]}

\mthfam ... to do!
\mthargfam
\mthparfam

```

- $\backslash\mathrm{mthfam}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$
- $\backslash\mathrm{mthargfam}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}\left(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\right)\mathrm{Ext2}$
- $\backslash\mathrm{mthargfam!}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}})\mathrm{Ext2}$
- $\backslash\mathrm{mthparfam}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}\left[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\right]\mathrm{Ext2}$
- $\backslash\mathrm{mthparfam!}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}]\mathrm{Ext2}$

616 %% Style for Families

617 $\backslash\mathrm{cmdmthall}\{\mathrm{fam}\}$

618 $\backslash\mathrm{DeclareRobustCommand}\{\mathrm{mthstyfam}\}\{\mathrm{mathscr}\}$

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

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

619 $\backslash\mathrm{seqoflatupp}\{\mathrm{Fam}\}\{\mathrm{mthfam}\}$

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

- $\backslash\mathrm{cmdmthfam}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMEFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathcal{CMDNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext}$
- $\backslash\mathrm{cmdmthfam}\{\mathrm{cmdName}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdNameFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathcal{NEWNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext}$

620 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthfam}\}[2][2=]$

621 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Fam}\}\{\mathrm{fam}\}[\#2]\}$

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

- $\backslash\mathrm{cmdmthargfam}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMEFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathcal{CMDNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$
- $\backslash\mathrm{cmdmthargfam}\{\mathrm{cmdName}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdNameFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathcal{NEWNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

622 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthargfam}\}[2][2=]$

623 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Fam}\}\{\mathrm{argfam}\}[\#2]\}$

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

- $\backslash\mathrm{cmdmthoargfam}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMEFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathcal{CMDNAM}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$
- $\backslash\mathrm{cmdmthoargfam}\{\mathrm{cmdFam}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdFamFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathcal{NEWNAM}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

624 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoargfam}\}[2][2=]$

625 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Fam}\}\{\mathrm{oargfam}\}[\#2]\}$

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

- $\backslash\mathrm{cmdmthparfam}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMEFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathcal{CMDNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$
- $\backslash\mathrm{cmdmthparfam}\{\mathrm{cmdName}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdNameFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathcal{NEWNAM}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

626 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthparfam}\}[2][2=]$

627 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Fam}\}\{\mathrm{parfam}\}[\#2]\}$

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

- $\backslash\mathrm{cmdmthoparfam}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMEFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathcal{CMDNAM}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$
- $\backslash\mathrm{cmdmthoparfam}\{\mathrm{cmdFam}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdFamFam}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathcal{NEWNAM}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

628 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoparfam}\}[2][2=]$

629 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Fam}\}\{\mathrm{oparfam}\}[\#2]\}$

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

- $\backslash\mathrm{mthargcls}$
- $\backslash\mathrm{mthparcls}$
- $\backslash\mathrm{mthcls}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \mathcal{NAM}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$

- $\backslash\mathrm{mthargcls}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}\left(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\right)\mathrm{Ext2}$
- $\backslash\mathrm{mthargcls}!\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}})\mathrm{Ext2}$
- $\backslash\mathrm{mthparcls}\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}\left[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\right]\mathrm{Ext2}$
- $\backslash\mathrm{mthparcls}!\{\mathrm{NAME}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{NAM}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}]\mathrm{Ext2}$

630 %% Style for Classes

631 $\backslash\mathrm{cmdmthall}\{\mathrm{cls}\}$

632 $\backslash\mathrm{DeclareRobustCommand}\{\mathrm{mthstycls}\}\{\backslash\mathrm{matheus}\}$

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

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

633 $\backslash\mathrm{seqoflatupp}\{\mathrm{Cls}\}\{\mathrm{mthcls}\}$

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

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

634 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthcls}\}[2][2=]$

635 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Cls}\}\{\mathrm{cls}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthargcls}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMECls}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathcal{CMDNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$
- $\backslash\mathrm{cmdmthargcls}\{\mathrm{cmdName}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdNameCls}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathcal{NEWNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

636 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthargcls}\}[2][2=]$

637 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Cls}\}\{\mathrm{argcls}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthoargcls}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMECls}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathcal{CMDNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$
- $\backslash\mathrm{cmdmthoargcls}\{\mathrm{cmdCls}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdClsCls}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathcal{NEWNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

638 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoargcls}\}[2][2=]$

639 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Cls}\}\{\mathrm{oargcls}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthparcls}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMECls}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathcal{CMDNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$
- $\backslash\mathrm{cmdmthparcls}\{\mathrm{cmdName}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdNameCls}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathcal{NEWNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

640 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthparcls}\}[2][2=]$

641 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Cls}\}\{\mathrm{parcls}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthoparcls}\{\mathrm{CMDNAME}\};$
 $\backslash\mathrm{CMDNAMECls}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathcal{CMDNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$
- $\backslash\mathrm{cmdmthoparcls}\{\mathrm{cmdCls}\}[\mathrm{NEWNAME}];$
 $\backslash\mathrm{cmdClsCls}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathcal{NEWNAME}\mathcal{E}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

642 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoparcls}\}[2][2=]$

643 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Cls}\}\{\mathrm{oparcls}\}\{\#2\}\}$

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

$\backslash\mathrm{mthargsig}$ • $\backslash\mathrm{mthsig}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \mathcal{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$

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

- $\backslash\mathrm{mthargsig}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}})\mathrm{Ext2}$
- $\backslash\mathrm{mthparsig}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}] \mathrm{Ext2}$
- $\backslash\mathrm{mthparsig}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}] \mathrm{Ext2}$

644 %% Style for Signatures

645 $\backslash\mathrm{cmdmthall}\{\mathrm{sig}\}$

646 $\backslash\mathrm{DeclareRobustCommand}\{\backslash\mathrm{mthstysig}\}\{\backslash\mathrm{mathpzc}\}$

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

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

647 $\backslash\mathrm{seqoflatlet}\{\mathrm{Sig}\}\{\mathrm{mthsig}\}\backslash\mathrm{seqofgrklow}\{\mathrm{Sig}\}\{\mathrm{mthsig}\}$

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

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

• $\backslash\mathrm{cmdmthsig}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathcal{N}\mathrm{ew}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext}$

648 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthsig}\}[2][2=]$

649 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Sig}\}\{\mathrm{sig}\}[\#2]\}$

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

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

• $\backslash\mathrm{cmdmthargsig}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathcal{N}\mathrm{ew}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

650 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthargsig}\}[2][2=]$

651 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Sig}\}\{\mathrm{argsig}\}[\#2]\}$

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

• $\backslash\mathrm{cmdmthoargsig}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathrm{cmd}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

• $\backslash\mathrm{cmdmthoargsig}\{\mathrm{cmdSig}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdSigSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathcal{N}\mathrm{ew}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

652 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthoargsig}\}[2][2=]$

653 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Sig}\}\{\mathrm{oargsig}\}[\#2]\}$

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

• $\backslash\mathrm{cmdmthparsig}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathrm{cmd}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

• $\backslash\mathrm{cmdmthparsig}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathcal{N}\mathrm{ew}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

654 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthparsig}\}[2][2=]$

655 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Sig}\}\{\mathrm{parsig}\}[\#2]\}$

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

• $\backslash\mathrm{cmdmthoparsig}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathrm{cmd}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

• $\backslash\mathrm{cmdmthoparsig}\{\mathrm{cmdSig}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdSigSig}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathcal{N}\mathrm{ew}\mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

656 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthoparsig}\}[2][2=]$

657 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Sig}\}\{\mathrm{oparsig}\}[\#2]\}$

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

$\backslash\mathrm{mthargstr}$ • $\backslash\mathrm{mthstr}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext}] = \mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext}$

$\backslash\mathrm{mthparstr}$ • $\backslash\mathrm{mthargstr}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathcal{N}\mathrm{ame}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}})\mathrm{Ext2}$

- $\backslash\mathrm{mthargset}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}(\mathrm{Arg}^{\mathrm{Ex}^{\mathrm{Ex}}})\mathrm{Ext2}$
- $\backslash\mathrm{mthparset}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}\left[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\right]\mathrm{Ext2}$
- $\backslash\mathrm{mthparset}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}]\mathrm{Ext2}$

672 %% Style for Sets

673 $\backslash\mathrm{cmdmthall}\{\mathrm{set}\}$

674 $\backslash\mathrm{DeclareRobustCommand}\{\backslash\mathrm{mthstyset}\}\{\backslash\mathrm{mathrm}\}$

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

$\backslash\mathrm{mthargset}$ 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

$\backslash\mathrm{mthparset}$ 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, Γ , Δ , E, Ξ , Θ , I, K, Λ , M, N, Ξ , O, Π , Π , P, P, Σ , Σ , T, Υ , Φ , Φ , X, Ψ , Ω

675 $\backslash\mathrm{seqoflet}\{\mathrm{Set}\}\{\mathrm{mthset}\}$

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

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

676 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthset}\}[2][2=]$

677 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Set}\}\{\mathrm{set}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthargset}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$
- $\backslash\mathrm{cmdmthargset}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

678 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthargset}\}[2][2=]$

679 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Set}\}\{\mathrm{argset}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthoargset}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$
- $\backslash\mathrm{cmdmthoargset}\{\mathrm{cmdSet}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdSetSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

680 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthoargset}\}[2][2=]$

681 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Set}\}\{\mathrm{oargset}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthparset}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$
- $\backslash\mathrm{cmdmthparset}\{\mathrm{cmdName}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

682 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthparset}\}[2][2=]$

683 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Set}\}\{\mathrm{parset}\}\{\#2\}\}$

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

- $\backslash\mathrm{cmdmthoparset}\{\mathrm{cmdName}\};$
 $\backslash\mathrm{cmdNameSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$
- $\backslash\mathrm{cmdmthoparset}\{\mathrm{cmdSet}\}[\mathrm{NewName}];$
 $\backslash\mathrm{cmdSetSet}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

684 $\backslash\mathrm{DeclareRobustCommandx}\{\backslash\mathrm{cmdmthoparset}\}[2][2=]$

685 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Set}\}\{\mathrm{oparset}\}\{\#2\}\}$

```

\cmdmthsettext ... to do!
686 \DeclareRobustCommandx{\cmdmthsettext}[3][2=, 3=]
687   {\cmdmthset{#1}[#2]\caselower[q]{#1}%
688    \usrmthlet{\thestring}{Sym}{sym}
689    [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}%
690    \usrmthlet{\thestring}{Elm}{elm}
691    [\defval{#3}{\defval{\empchk{#2}{\lowercase{#2}}}{\thestring}}}]

\mthrel ... to do!
\mthargrel
\mthparrel
• \mthrel{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
• \mthargrel{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
• \mthargrel!{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
• \mthparrel{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
• \mthparrel!{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $Name_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
692 %% Style for Relations
693 \cmdmthall{rel}
694 \DeclareRobustCommand{\mthstyrel}{\mathit}

\rel ... to do!
... a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, 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,  $\Gamma, \Delta, E, Z, H, \Theta, \Theta, I, K, K, A, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, \Upsilon, \Phi, \Phi, X, \Psi, \Omega$ 
695 \seqoflet{Rel}{mthrel}

\cmdmthrel ... to do!
• \cmdmthrel{cmdName};
  \cmdNameRel[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
• \cmdmthrel{cmdName}[NewName];
  \cmdNameRel[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
696 \DeclareRobustCommandx{\cmdmthrel}[2][2=]
697   {\usrmth{#1}{Rel}{rel}[#2]}

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

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

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

```

```

\cmdmthoparrel ... to do!
    • \cmdmthoparrel{cmdName};
      \cmdNameRel[sub][sub][par] = cmdNamesub[par]
    • \cmdmthoparrel{cmdRel}[NewName];
      \cmdRelRel[sub][sub][par] = NewNamesub[par]
704 \DeclareRobustCommandx{\cmdmthoparrel}[2][2=]
705   {\usrmth{#1}{Rel}{oparrel}[#2]}

\mthfun ... to do!
\mthargfun
\mthparfun
    • \mthfun{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargfun{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
    • \mthargfun!{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
    • \mthparfun{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
    • \mthparfun!{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
706 %% Style for Functions
707 \cmdmthall{fun}
708 \DeclareRobustCommand{\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
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
Α, Β, Γ, Δ, Ε, Ζ, Η, Θ, Θ, Ι, Κ, Κ, Λ, Μ, Ν, Ξ, Ο, Π, ΙΙ, Ρ, Ρ, Σ, Σ, Τ, Υ, Φ, Φ, Χ, Ψ, Ω
709 \seqoflet{Fun}{mthfun}

\cmdmthfun ... to do!
    • \cmdmthfun{cmdName};
      \cmdNameFun[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext] = NewNamesubsubext
710 \DeclareRobustCommandx{\cmdmthfun}[2][2=]
711   {\usrmth{#1}{Fun}{fun}[#2]}

\cmdmthargfun ... to do!
    • \cmdmthargfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
    • \cmdmthargfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
712 \DeclareRobustCommandx{\cmdmthargfun}[2][2=]
713   {\usrmth{#1}{Fun}{argfun}[#2]}

\cmdmthoargfun ... to do!
    • \cmdmthoargfun{cmdName};
      \cmdNameFun[sub][sub][arg] = cmdNamesubsub(arg)
    • \cmdmthoargfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][arg] = NewNamesubsub(arg)
714 \DeclareRobustCommandx{\cmdmthoargfun}[2][2=]
715   {\usrmth{#1}{Fun}{oargfun}[#2]}

\cmdmthparfun ... to do!
    • \cmdmthparfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
    • \cmdmthparfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
716 \DeclareRobustCommandx{\cmdmthparfun}[2][2=]
717   {\usrmth{#1}{Fun}{parfun}[#2]}

```

```

\cmdmthoparfun ... to do!
    • \cmdmthoparfun{cmdName};
      \cmdNameFun[sub][sub][par] = cmdNamesub[par]
    • \cmdmthoparfun{cmdFun}[NewName];
      \cmdFunFun[sub][sub][par] = NewNamesub[par]
718 \DeclareRobustCommandx{\cmdmthoparfun}[2][2=]
719   {\usrmth{#1}{Fun}{oparfun}{#2}}

\mthsym ... to do!
\mthargsym    • \mthsym{Name}[sub][sup][Ext] = NamesupsubExt
\mthparsym    • \mthargsym{Name}[sub][sup][Ext1]{ArgEx{Ex}}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
               • \mthargsym!{Name}[sub][sup][Ext1]{ArgEx{Ex}}}[Ext2] = NamesupsubExt1(ArgExEx)Ext2
               • \mthparsym{Name}[sub][sup][Ext1]{ParEx{Ex}}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
               • \mthparsym!{Name}[sub][sup][Ext1]{ParEx{Ex}}}[Ext2] = NamesupsubExt1[ParExEx]Ext2
720 %% Style for Symbols
721 \cmdmthall{sym}
722 \DeclareRobustCommand{\mthstysym}{\mathtt}

\asym ... to do!
... a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
Α, Β, Γ, Δ, Ε, Ζ, Η, Θ, Θ, Ι, Κ, Κ, Λ, Μ, Ν, Ξ, Ο, Π, Π, Ρ, Ρ, Σ, Σ, Τ, Τ, Φ, Φ, Χ, Ψ, Ω
723 \seqoflet{Sym}{mthsym}

\cmdmthsym ... to do!
    • \cmdmthsym{cmdName};
      \cmdNameSym[sub][sub][ext] = cmdNamesubsubext
    • \cmdmthsym{cmdName}[NewName];
      \cmdNameSym[sub][sub][ext] = NewNamesubsubext
724 \DeclareRobustCommandx{\cmdmthsym}[2][2=]
725   {\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
726 \DeclareRobustCommandx{\cmdmthargsym}[2][2=]
727   {\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)
728 \DeclareRobustCommandx{\cmdmthoargsym}[2][2=]
729   {\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
730 \DeclareRobustCommandx{\cmdmthparsym}[2][2=]
731   {\usrmth{#1}{Sym}{parsym}{#2}}

```

```

\cmdmthoparsym ... to do!
    • \cmdmthoparsym{cmdName};
      \cmdNameSym[sub] [sub] [par] = cmdNamesub[par]
    • \cmdmthoparsym{cmdSym}[NewName];
      \cmdSymSym[sub] [sub] [par] = NewNamesub[par]
732 \DeclareRobustCommandx{\cmdmthoparsym}[2][2=]
733   {\usrmth{#1}{Sym}{oparsym}[#2]}

\mthelm ... to do!
\mthargelm    • \mthelm{Name}[sub] [sup] [Ext] = NamesupExt
\mthparelm    • \mthargelm{Name}[sub] [sup] [Ext1]{ArgEx{Ex}}[Ext2] = NamesupExt1(ArgExExt)Ext2
               • \mthargelm!{Name}[sub] [sup] [Ext1]{ArgEx{Ex}}[Ext2] = NamesupExt1(ArgExExt)Ext2
               • \mthparelm{Name}[sub] [sup] [Ext1]{ParEx{Ex}}[Ext2] = NamesupExt1[ParExExt]Ext2
               • \mthparelm!{Name}[sub] [sup] [Ext1]{ParEx{Ex}}[Ext2] = NamesupExt1[ParExExt]Ext2
734 %% Style for Elements
735 \cmdmthall{elm}
736 \DeclareRobustCommand{\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
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, Λ, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
737 \seqoflet{Elm}{mthelm}

\cmdmthelm ... to do!
    • \cmdmthelm{cmdName};
      \cmdNameElm[sub] [sub] [ext] = cmdNamesubext
    • \cmdmthelm{cmdName}[NewName];
      \cmdNameElm[sub] [sub] [ext] = NewNamesubext
738 \DeclareRobustCommandx{\cmdmthelm}[2][2=]
739   {\usrmth{#1}{Elm}{elm}[#2]}

\cmdmthargelm ... to do!
    • \cmdmthargelm{cmdName};
      \cmdNameElm[sub] [sub] [ext1]{arg}[ext2] = cmdNamesubext1(arg)ext2
    • \cmdmthargelm{cmdName}[NewName];
      \cmdNameElm[sub] [sub] [ext1]{arg}[ext2] = NewNamesubext1(arg)ext2
740 \DeclareRobustCommandx{\cmdmthargelm}[2][2=]
741   {\usrmth{#1}{Elm}{argelm}[#2]}

\cmdmthoargelm ... to do!
    • \cmdmthoargelm{cmdName};
      \cmdNameElm[sub] [sub] [arg] = cmdNamesub(arg)
    • \cmdmthoargelm{cmdElm}[NewName];
      \cmdElmElm[sub] [sub] [arg] = NewNamesub(arg)
742 \DeclareRobustCommandx{\cmdmthoargelm}[2][2=]
743   {\usrmth{#1}{Elm}{oargelm}[#2]}

\cmdmthparelm ... to do!
    • \cmdmthparelm{cmdName};
      \cmdNameElm[sub] [sub] [ext1]{par}[ext2] = cmdNamesubext1[par]ext2
    • \cmdmthparelm{cmdName}[NewName];
      \cmdNameElm[sub] [sub] [ext1]{par}[ext2] = NewNamesubext1[par]ext2
744 \DeclareRobustCommandx{\cmdmthparelm}[2][2=]
745   {\usrmth{#1}{Elm}{parelm}[#2]}

```



```

\cmdmthoparelm ... to do!

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

    • \cmdmthoparelm{cmdElm}[NewName];
      \cmdElmElm[sub][sub][par] = NewNamesubsub[par]

746 \DeclareRobustCommandx{\cmdmthoparelm}[2][2=]
747   {\usrmth{#1}{Elm}{oparelm}[#2]}

748 %*****%

```

```

\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

749 \DeclareRobustCommandx{\cmdmthsymelm}[2][2=]
750   {\cmdmthsym{#1}[#2]}
751   \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

752 \DeclareRobustCommandx{\cmdmthargsymelm}[2][2=]
753   {\cmdmthargsym{#1}[#2]}
754   \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)

755 \DeclareRobustCommandx{\cmdmthoargsymelm}[2][2=]
756   {\cmdmthoargsym{#1}[#2]}
757   \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

758 \DeclareRobustCommandx{\cmdmthparsymelm}[2][2=]
759   {\cmdmthparsym{#1}[#2]}
760   \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] = NewNamesub[par]
    \cmdNameElm[sub][sub][par] = NewNamesub[par]

761 \DeclareRobustCommandx{\cmdmthoparsymelm}[2][2=]
762   {\cmdmthoparsym{#1}[#2]%
763    \cmdmthoparelm{#1}[#2]}

764 %%*****%

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

765 %% Style for \LaTeX Operators
766 \cmdmth{luop}
767 \DeclareRobustCommand{\mthstyluop}[1]{\textstyle\mathop{#1}}
768 \cmdmth{lbop}
769 \DeclareRobustCommand{\mthstylbop}[1]{\textstyle\mathbin{#1}}

\cmdmthluop ... to do!
\cmdmthlbop
    • \cmdmthluop{cmdName};
    \cmdNameUOp[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthluop{cmdName}[\oplus];
    \cmdNameUOp[sub][sub][ext] =  $\oplus_{sub}^{sub} ext$ 
    • \cmdmthlbop{cmdName};
    \cmdNameBOp[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthlbop{cmdName}[\oplus];
    \cmdNameBOp[sub][sub][ext] =  $\oplus_{sub}^{sub} ext$ 

770 \DeclareRobustCommandx{\cmdmthluop}[2][2=]
771   {\usrmth{#1}{UOp}{luop}[#2]}
772 \DeclareRobustCommandx{\cmdmthlbop}[2][2=]
773   {\usrmth{#1}{BOp}{lbop}[#2]}

\mthlrel ... to do!
    • \mthlrel{\preceq}[sub][sup][Ext] =  $\preceq_{sub}^{sup} Ext$ 

774 %% Style for \LaTeX Relations
775 \cmdmth{lrel}
776 \DeclareRobustCommand{\mthstylrel}{\mathrel}

\cmdmthlrel ... to do!
    • \cmdmthlrel{cmdName};
    \cmdNameRel[sub][sub][ext] =  $cmdName_{sub}^{sub} ext$ 
    • \cmdmthlrel{cmdName}[\preceq];
    \cmdNameRel[sub][sub][ext] =  $\preceq_{sub}^{sub} ext$ 

777 \DeclareRobustCommandx{\cmdmthlrel}[2][2=]
778   {\usrmth{#1}{Rel}{lrel}[#2]}

779 %%*****%

\mthsnt ... to do!
\mthargsnt
\mthparsnt
    • \mthsnt{Name}[sub][sup][Ext] =  $Name_{sub}^{sup} Ext$ 
    • \mthargsnt{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] =  $Name_{sub}^{sup} Ext1 (Arg^{Ex^{Ex}}) Ext2$ 
    • \mthargsnt!{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] =  $Name_{sub}^{sup} Ext1 (Arg^{Ex^{Ex}}) Ext2$ 
    • \mthparsnt{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] =  $Name_{sub}^{sup} Ext1 [Par^{Ex^{Ex}}] Ext2$ 
    • \mthparsnt!{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] =  $Name_{sub}^{sup} Ext1 [Par^{Ex^{Ex}}] Ext2$ 

780 %% Style for Sentences
781 \cmdmthall{snt}
782 \DeclareRobustCommand{\mthstysnt}{\mathsf}

```

```

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

```

```

\cmdmthsnt ... to do!
• \cmdmthsnt{cmdName};
  \cmdNameSnt[sub][sub][ext] = cmdNamesubext
• \cmdmthsnt{cmdName}[NewName];
  \cmdNameSnt[sub][sub][ext] = NewNamesubext
784 \DeclareRobustCommandx{\cmdmthsnt}[2][2=]
785   {\usrmth{#1}{Snt}{snt}{#2}}

```

```

\cmdmthargsnt ... to do!
• \cmdmthargsnt{cmdName};
  \cmdNameSnt[sub][sub][ext1]{arg}[ext2] = cmdNamesubext1(arg)ext2
• \cmdmthargsnt{cmdName}[NewName];
  \cmdNameSnt[sub][sub][ext1]{arg}[ext2] = NewNamesubext1(arg)ext2
786 \DeclareRobustCommandx{\cmdmthargsnt}[2][2=]
787   {\usrmth{#1}{Snt}{argsnt}{#2}}

```

```

\cmdmthoargsnt ... to do!
• \cmdmthoargsnt{cmdName};
  \cmdNameSnt[sub][sub][arg] = cmdNamesub(arg)
• \cmdmthoargsnt{cmdName}[NewName];
  \cmdNameSnt[sub][sub][arg] = NewNamesub(arg)
788 \DeclareRobustCommandx{\cmdmthoargsnt}[2][2=]
789   {\usrmth{#1}{Snt}{oargsnt}{#2}}

```

```

\cmdmthparsnt ... to do!
• \cmdmthparsnt{cmdName};
  \cmdNameSnt[sub][sub][ext1]{par}[ext2] = cmdNamesubext1[par]ext2
• \cmdmthparsnt{cmdName}[NewName];
  \cmdNameSnt[sub][sub][ext1]{par}[ext2] = NewNamesubext1[par]ext2
790 \DeclareRobustCommandx{\cmdmthparsnt}[2][2=]
791   {\usrmth{#1}{Snt}{parsnt}{#2}}

```

```

\cmdmthoparsnt ... to do!
• \cmdmthoparsnt{cmdName};
  \cmdNameSnt[sub][sub][par] = cmdNamesub[par]
• \cmdmthoparsnt{cmdName}[NewName];
  \cmdNameSnt[sub][sub][par] = NewNamesub[par]
792 \DeclareRobustCommandx{\cmdmthoparsnt}[2][2=]
793   {\usrmth{#1}{Snt}{oparsnt}{#2}}

```

```

\mthfrm ... to do!
\mthargfrm • \mthfrm{Name}[sub][sup][Ext] = NamesubsupExt
\mthparfrm • \mthargfrm{Name}[sub][sup][Ext1]{ArgEx{Ex}}}[Ext2] = NamesubsupExt1(ArgExEx)Ext2
• \mthargfrm!{Name}[sub][sup][Ext1]{ArgEx{Ex}}}[Ext2] = NamesubsupExt1(ArgExEx)Ext2
• \mthparfrm{Name}[sub][sup][Ext1]{ParEx{Ex}}}[Ext2] = NamesubsupExt1[ParExEx]Ext2
• \mthparfrm!{Name}[sub][sup][Ext1]{ParEx{Ex}}}[Ext2] = NamesubsupExt1[ParExEx]Ext2
794 %% Style for Formulae
795 \cmdmthall{frm}
796 \DeclareRobustCommand{\mthstyfrm}{\mathit}

```

```

\afm ... 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,  $\Gamma, \Delta, E, \Xi, Z, H, \Theta, \varnothing, I, K, \Lambda, M, N, \Xi, O, \Pi, \varPi, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
797 \seqoflet{Frm}{mthfrm}

```

```

\cmdmthfrm ... to do!
• \cmdmthfrm{cmdName};
  \cmdNameFrm[sub][sub][ext] =  $cmdName_{sub}^{sub}ext$ 
• \cmdmthfrm{cmdName}[NewName];
  \cmdNameFrm[sub][sub][ext] =  $NewName_{sub}^{sub}ext$ 
798 \DeclareRobustCommandx{\cmdmthfrm}[2][2=]
799   {\usrmth{#1}{Frm}{frm}[#2]}

```

```

\cmdmthargfrm ... to do!
• \cmdmthargfrm{cmdName};
  \cmdNameFrm[sub][sub][ext1]{arg}[ext2] =  $cmdName_{sub}^{sub}ext1(arg)ext2$ 
• \cmdmthargfrm{cmdName}[NewName];
  \cmdNameFrm[sub][sub][ext1]{arg}[ext2] =  $NewName_{sub}^{sub}ext1(arg)ext2$ 
800 \DeclareRobustCommandx{\cmdmthargfrm}[2][2=]
801   {\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] =  $NewName_{sub}^{sub}(arg)$ 
802 \DeclareRobustCommandx{\cmdmthoargfrm}[2][2=]
803   {\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] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
804 \DeclareRobustCommandx{\cmdmthparfrm}[2][2=]
805   {\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] =  $NewName_{sub}^{sub}[par]$ 
806 \DeclareRobustCommandx{\cmdmthoparfrm}[2][2=]
807   {\usrmth{#1}{Frm}{oparfrm}[#2]}

808 %*****%

```

```

\mthmat ... to do!
\mthargmat
\mthparmat
• \mthmat{Name}[sub][sup][Ext] =  $\mathbf{Name}_{sub}^{sup}Ext$ 
• \mthargmat{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
• \mthargmat!{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
• \mthparmat{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
• \mthparmat!{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 

```

```

809 %% Style for Matrices
810 \cmdmthall{mat}
811 \DeclareRobustCommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}

```

\aMat ... to do!

```

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

```

\cmdmthmat ... to do!

```

• \cmdmthmat{cmdName};
  \cmdNameMat[sub][sub][ext] = cmdNamesubsubext
• \cmdmthmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext] = NewNamesubsubext
813 \DeclareRobustCommandx{\cmdmthmat}[2][2=]
814 {\usrmth{#1}{Mat}{mat}{#2}}

```

\cmdmthargmat ... to do!

```

• \cmdmthargmat{cmdName};
  \cmdNameMat[sub][sub][ext1]{arg}[ext2] = cmdNamesubsubext1(arg)ext2
• \cmdmthargmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext1]{arg}[ext2] = NewNamesubsubext1(arg)ext2
815 \DeclareRobustCommandx{\cmdmthargmat}[2][2=]
816 {\usrmth{#1}{Mat}{argmat}{#2}}

```

\cmdmthoargmat ... to do!

```

• \cmdmthoargmat{cmdName};
  \cmdNameMat[sub][sub][arg] = cmdNamesubsub(arg)
• \cmdmthoargmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][arg] = NewNamesubsub(arg)
817 \DeclareRobustCommandx{\cmdmthoargmat}[2][2=]
818 {\usrmth{#1}{Mat}{oargmat}{#2}}

```

\cmdmthparmat ... to do!

```

• \cmdmthparmat{cmdName};
  \cmdNameMat[sub][sub][ext1]{par}[ext2] = cmdNamesubsubext1[par]ext2
• \cmdmthparmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][ext1]{par}[ext2] = NewNamesubsubext1[par]ext2
819 \DeclareRobustCommandx{\cmdmthparmat}[2][2=]
820 {\usrmth{#1}{Mat}{parmat}{#2}}

```

\cmdmthoparmat ... to do!

```

• \cmdmthoparmat{cmdName};
  \cmdNameMat[sub][sub][par] = cmdNamesubsub[par]
• \cmdmthoparmat{cmdName}[NewName];
  \cmdNameMat[sub][sub][par] = NewNamesubsub[par]
821 \DeclareRobustCommandx{\cmdmthoparmat}[2][2=]
822 {\usrmth{#1}{Mat}{oparmat}{#2}}

```

\mthvec ... to do!

```

\mthargvec • \mthvec{Name}[sub][sup][Ext] = NamesubsupExt
\mthparvec • \mthargvec{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesubsupExt1(Arg^{Ex^{Ex}})Ext2
• \mthargvec!{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] = NamesubsupExt1(Arg^{Ex^{Ex}})Ext2
• \mthparvec{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] = NamesubsupExt1[Par^{Ex^{Ex}}]Ext2

```

• $\backslash\mathrm{mthparvec}\{\mathrm{Name}\}[\mathrm{sub}][\mathrm{sup}][\mathrm{Ext1}]\{\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}\}[\mathrm{Ext2}] = \mathrm{Name}_{\mathrm{sub}}^{\mathrm{sup}}\mathrm{Ext1}[\mathrm{Par}^{\mathrm{Ex}^{\mathrm{Ex}}}] \mathrm{Ext2}$

823 %% Style for Vectors

824 $\backslash\mathrm{cmdmthall}\{\mathrm{vec}\}$

825 $\backslash\mathrm{DeclareRobustCommand}\{\mathrm{mthstyvec}\}[1]\{\backslash\mathrm{boldsymbol}\{\backslash\mathrm{mathit}\{\#1\}\}\}$

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

... $a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z$

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

$\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$

$A, B, \Gamma, \Delta, E, E, Z, H, \Theta, \Theta, I, K, K, \Lambda, M, N, \Xi, O, \Pi, \Pi, P, P, \Sigma, \Sigma, T, \Upsilon, \Phi, \Phi, X, \Psi, \Omega$

826 $\backslash\mathrm{seqoflet}\{\mathrm{Vec}\}\{\mathrm{mthvec}\}$

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

• $\backslash\mathrm{cmdmthvec}\{\mathrm{cmdName}\};$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext}$

• $\backslash\mathrm{cmdmthvec}\{\mathrm{cmdName}\}[\mathrm{NewName}];$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext}$

827 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthvec}\}[2][2=]$

828 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Vec}\}\{\mathrm{vec}\}\{\#2\}\}$

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

• $\backslash\mathrm{cmdmthargvec}\{\mathrm{cmdName}\};$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

• $\backslash\mathrm{cmdmthargvec}\{\mathrm{cmdName}\}[\mathrm{NewName}];$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{arg}\}[\mathrm{ext2}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}(\mathrm{arg})\mathrm{ext2}$

829 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthargvec}\}[2][2=]$

830 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Vec}\}\{\mathrm{argvec}\}\{\#2\}\}$

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

• $\backslash\mathrm{cmdmthoargvec}\{\mathrm{cmdName}\};$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

• $\backslash\mathrm{cmdmthoargvec}\{\mathrm{cmdName}\}[\mathrm{NewName}];$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{arg}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}(\mathrm{arg})$

831 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoargvec}\}[2][2=]$

832 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Vec}\}\{\mathrm{oargvec}\}\{\#2\}\}$

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

• $\backslash\mathrm{cmdmthparvec}\{\mathrm{cmdName}\};$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

• $\backslash\mathrm{cmdmthparvec}\{\mathrm{cmdName}\}[\mathrm{NewName}];$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{ext1}]\{\mathrm{par}\}[\mathrm{ext2}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}\mathrm{ext1}[\mathrm{par}]\mathrm{ext2}$

833 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthparvec}\}[2][2=]$

834 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Vec}\}\{\mathrm{parvec}\}\{\#2\}\}$

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

• $\backslash\mathrm{cmdmthoparvec}\{\mathrm{cmdName}\};$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathrm{cmdName}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

• $\backslash\mathrm{cmdmthoparvec}\{\mathrm{cmdName}\}[\mathrm{NewName}];$

$\backslash\mathrm{cmdNameVec}[\mathrm{sub}][\mathrm{sub}][\mathrm{par}] = \mathrm{NewName}_{\mathrm{sub}}^{\mathrm{sub}}[\mathrm{par}]$

835 $\backslash\mathrm{DeclareRobustCommandx}\{\mathrm{cmdmthoparvec}\}[2][2=]$

836 $\{\backslash\mathrm{usrmth}\{\#1\}\{\mathrm{Vec}\}\{\mathrm{oparvec}\}\{\#2\}\}$

837 $\backslash\mathrm{fi}$

838 %*****

839 %*****

840 %** Elementary Macros for Text *****

841 %*****

842 $\backslash\mathrm{iftxt@}$

```

\dotcheck      • A\dotcheck A\dotcheck.A = A.A. A
843 \newrobustcmd{\dotcheck}
844   {\@ifnextchar.{}{.\@}}

845 %** Latin Abbreviations *****%%

\ad hoc      • \ad hoc = ad hoc
846 \cmdtxtabr{ad hoc}[ad hoc]

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

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

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

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

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

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

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

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

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

\ergo         • \ergo = ergo
856 \cmdtxtabr{ergo}

\errata       • \errata = errata
857 \cmdtxtabr{errata}

\erratum      • \erratum = erratum
858 \cmdtxtabr{erratum}

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

\etc          • \etc = etc.
860 \cmdtxtabr{etc}[etc.\@]

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

\mutatismutandis • \mutatismutandis = mutatis mutandis
862 \cmdtxtabr{mutatismutandis}[mutatis mutandis]

\percontra    • \percontra = per contra
863 \cmdtxtabr{percontra}[per contra]

```

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

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

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

`\viz` • `\viz = viz.`
867 `\cmdtxtabr{viz}[viz.\@]`

868 `%%*****`

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

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

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

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

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

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

`\Divideetimpera` • `\Divideetimpera = Divide et impera`
875 `\cmdtxtabr{Divideetimpera}[Divide et impera]`

`\Eg` • `\Eg = E.g.`
876 `\cmdtxtabr{Eg}[E.g.\@]`

`\Errata` • `\Errata = Errata`
877 `\cmdtxtabr{Errata}`

`\Erratum` • `\Erratum = Erratum`
878 `\cmdtxtabr{Erratum}`

`\Mutatismutandis` • `\Mutatismutandis = Mutatis mutandis`
879 `\cmdtxtabr{Mutatismutandis}[Mutatis mutandis]`

`\Percontra` • `\Percontra = Per contra`
880 `\cmdtxtabr{Percontra}[Per contra]`

`\Primafacie` • `\Primafacie = Prima facie`
881 `\cmdtxtabr{Primafacie}[Prima facie]`

`\Viceversa` • `\Viceversa = Vice versa`
882 `\cmdtxtabr{Viceversa}[Vice versa]`

883 `%%** Italian Abbreviations *****`
...
884 `%%*****`


```

...
885 %** French Abbreviations *****%
\ala      • \ala = à la
886 \cmdtxtabr{ala}[\`a la]
\naif     • \naif = naïf
887 \cmdtxtabr{naif}[na\`{i}f]
\naive    • \naive = naïve
888 \cmdtxtabr{naive}[na\`{i}ve]
\role     • \role = rôle
889 \cmdtxtabr{role}[r\`{o}le]
890 %*****%
\Role     • \Role = Rôle
891 \cmdtxtabr{Role}[R\`{o}le]
892 %** English Abbreviations *****%
\aka      • \aka = a.k.a.
893 \cmdtxtabr{aka}[a.k.a.\@]
\contd    • \contd = contd.
894 \cmdtxtabr{contd}[contd.\@]
\iff      • \iff = iff
895 \cmdtxtabr{iff}
\iht      • \iht = i.h.t.
896 \cmdtxtabr{iht}[i.h.t.\@]
\stx      • \stx = s.t.
897 \cmdtxtabr{stx}[s.t.\@]
\resp     • \resp = resp.
898 \cmdtxtabr{resp}[resp.\@]
\wrt      • \wrt = w.r.t.
899 \cmdtxtabr{wrt}[w.r.t.\@]
\wlogx    • \wlogx = w.l.o.g.
900 \cmdtxtabr{wlogx}[w.l.o.g.\@]
901 %*****%
\Contd    • \Contd = Contd.
902 \cmdtxtabr{Contd}[Contd.\@]
\Wlogx    • \Wlogx = W.l.o.g.
903 \cmdtxtabr{Wlogx}[W.l.o.g.\@]
904 \fi
905 %*****%
906 %*****%
907 %** Elementary Macros for Math *****%
908 %*****%
909 \ifmth@

```

```

910 %** General Notation *****/

\defeq ...
\seteq 911 \DeclareRobustCommand{\defeq}
912   {\ifstarvar%
913     {\mthlbop{\stackrel{\text{\textup{def}}}{=}}}%
914     {\mthlbop{\triangleq}}}
915 \DeclareRobustCommand{\seteq}
916   {\ifstarvar{\mthlbop{\Coloneqq}}{\mthlbop{\coloneqq}}}
917 %*****/

\limp ...
\lcoimp 918 \DeclareRobustCommand{\limp}
919   {\mthlbop{\rightarrow}}
920 \DeclareRobustCommand{\lcoimp}
921   {\mthlbop{\leftrightharpoonup}}
922 %*****/

\implies ...
\notimplies 923 \DeclareRobustCommand{\implies}
924   {\mthlrel{\rightarrow}}
925 \DeclareRobustCommand{\notimplies}
926   {\mthlrel{\not\rightarrow}}

\implied ...
\notimplied 927 \DeclareRobustCommand{\implied}
928   {\mthlrel{\Leftarrow}}
929 \DeclareRobustCommand{\notimplied}
930   {\mthlrel{\not\Leftarrow}}

\coimplies ...
\notcoimplies 931 \DeclareRobustCommand{\coimplies}
932   {\mthlrel{\Leftrightarrow}}
933 \DeclareRobustCommand{\notcoimplies}
934   {\mthlrel{\not\Leftrightarrow}}
935 %*****/

\cmodels ...
\notcmodels 936 \DeclareRobustCommand{\cmodels}
937   {\mthlrel{\models}}
938 \DeclareRobustCommand{\notcmodels}
939   {\mthlrel{\not\models}}

\cequiv ...
\notcequiv 940 \DeclareRobustCommand{\cequiv}
941   {\mthlrel{\equiv}}
942 \DeclareRobustCommand{\notcequiv}
943   {\mthlrel{\not\equiv}}
944 %*****/

\denot ...
945 \DeclareRobustCommand{\denot}
946   {\ifexclavar{\@edenot}{\@denot}}
947 \DeclareRobustCommand{\denot}[1]
948   {\mth{\argmid{\left\llbracket}{\#1}{\right\rrbracket}}}
949 \DeclareRobustCommand{\@edenot}[1]
950   {\mth{!\argmid{\llbracket}{\#1}{\rrbracket}}}
951 %*****/

```

```

\comp ...
\dual 952 \DeclareRobustCommand{\comp}[1]
\adj 953 {\mth{\overline{#1}}}
\der 954 \DeclareRobustCommand{\dual}[1]
\trn 955 {\mth{\widetilde{#1}}}
      956 \DeclareRobustCommand{\adj}[1]
      957 {\mth{\mathring{#1}}}
      958 \DeclareRobustCommand{\der}[1]
      959 {\mth{\widehat{#1}}}
      960 \DeclareRobustCommand{\trn}[1]
      961 {\mth{\overbrace{#1}}}

\vec ...
      962 \DeclareRobustCommand{\vec}
      963 {\ifstarvar{\@svec}{\@vec}}
      964 \DeclareRobustCommand{\@vec}[1]
      965 {\mth{\mathaccent"017E{#1}}}
      966 \DeclareRobustCommand{\@svec}[1]
      967 {\mth{\overline{#1}}}

      968 %%*****%

\enumeration ...
      969 \DeclareRobustCommand{\enumeration}
      970 {\ifstarvar{\@senumeration}{\@enumeration}}
      971 \varcmd{\@enumeration}{\mth!}{,}{,}{,}{,}
      972 \varcmd{\@senumeration}{\mth!}{,}{,}{,}{,}

\sequence ...
\sequence1 973 \DeclareRobustCommand{\sequence}
\sequencer 974 {\ifstarvar{\@ssequence}{\@sequence}}
      975 \DeclareRobustCommand{\@sequence}
      976 {\ifexclavar{\@e@sequence}{\@@sequence}}
      977 \DeclareRobustCommand{\@ssequence}
      978 {\ifexclavar{\@e@ssequence}{\@@ssequence}}
      979 \varcmd{\@sequence}{\mth}{\left[{}{,}{\right]}{}}
      980 \varcmd{\@e@sequence}{\mth!}{[{}{,}]{}}
      981 \varcmd{\@ssequence}{\mth}{\left[{}{};{}{\right]}{}}
      982 \varcmd{\@e@ssequence}{\mth!}{[{}{};{}]{}}
      983 \DeclareRobustCommand{\sequence1}
      984 {\ifstarvar{\@ssequence1}{\@sequence1}}
      985 \DeclareRobustCommand{\@sequence1}
      986 {\ifexclavar{\@e@sequence1}{\@@sequence1}}
      987 \DeclareRobustCommand{\@ssequence1}
      988 {\ifexclavar{\@e@ssequence1}{\@@ssequence1}}
      989 \varcmd{\@sequence1}{\mth}{\left[{}{,}{\right.}{}{}}
      990 \varcmd{\@e@sequence1}{\mth!}{[{}{,}]{}}
      991 \varcmd{\@ssequence1}{\mth}{\left[{}{};{}{\right.}{}{}}
      992 \varcmd{\@e@ssequence1}{\mth!}{[{}{};{}]{}}
      993 \DeclareRobustCommand{\sequencer}
      994 {\ifstarvar{\@ssequencer}{\@sequencer}}
      995 \DeclareRobustCommand{\@sequencer}
      996 {\ifexclavar{\@e@sequencer}{\@@sequencer}}
      997 \DeclareRobustCommand{\@ssequencer}
      998 {\ifexclavar{\@e@ssequencer}{\@@ssequencer}}
      999 \varcmd{\@sequencer}{\mth}{\left.{}{,}{\right]}{}}
      1000 \varcmd{\@e@sequencer}{\mth!}{,}{,}{,}{,}
      1001 \varcmd{\@ssequencer}{\mth}{\left.{}{};{}{\right]}{}}
      1002 \varcmd{\@e@ssequencer}{\mth!}{,}{,}{,}{,}

\tuple ...
\tuple1 1003 \DeclareRobustCommand{\tuple}
\tupler 1004 {\ifstarvar{\@stuple}{\@tuple}}

```

```

1005 \DeclareRobustCommand{\@tuple}
1006   {\ifexclavar{\@e@tuple}{\@@tuple}}
1007 \DeclareRobustCommand{\@stuple}
1008   {\ifexclavar{\@e@stuple}{\@@stuple}}
1009 \varcmd{\@tuple}{\mth}{\left\langle}{,}{\right\rangle}{}
1010 \varcmd{\@e@tuple}{\mth!}{\langle}{,}{\rangle}{}
1011 \varcmd{\@stuple}{\mth}{\left\langle}{;}{\right\rangle}{}
1012 \varcmd{\@e@stuple}{\mth!}{\langle}{;}{\rangle}{}
1013 \DeclareRobustCommand{\@tuplel}
1014   {\ifstarvar{\@stuplel}{\@tuplel}}
1015 \DeclareRobustCommand{\@tuplel}
1016   {\ifexclavar{\@e@tuplel}{\@@tuplel}}
1017 \DeclareRobustCommand{\@stuplel}
1018   {\ifexclavar{\@e@stuplel}{\@@stuplel}}
1019 \varcmd{\@tuplel}{\mth}{\left\langle}{,}{\right.}{}
1020 \varcmd{\@e@tuplel}{\mth!}{\langle}{,}{\rangle}{}
1021 \varcmd{\@stuplel}{\mth}{\left\langle}{;}{\right.}{}
1022 \varcmd{\@e@stuplel}{\mth!}{\langle}{;}{\rangle}{}
1023 \DeclareRobustCommand{\@tupler}
1024   {\ifstarvar{\@stupler}{\@tupler}}
1025 \DeclareRobustCommand{\@tupler}
1026   {\ifexclavar{\@e@tupler}{\@@tupler}}
1027 \DeclareRobustCommand{\@stupler}
1028   {\ifexclavar{\@e@stupler}{\@@stupler}}
1029 \varcmd{\@tupler}{\mth}{\left.}{,}{\right\rangle}{}
1030 \varcmd{\@e@tupler}{\mth!}{\rangle}{}
1031 \varcmd{\@stupler}{\mth}{\left.}{;}{\right\rangle}{}
1032 \varcmd{\@e@stupler}{\mth!}{\rangle}{}

1033 %** Sets *****%

\set ...{\left| \begin{smallmatrix} 1^2 \\ 1^2 \end{smallmatrix} \right\} \{1^2 : 1^2\} \{1^2 \mid 1^2\} \{1^2 : 1^2\}}
\setl ...{\left| \begin{smallmatrix} 1^2 \\ 1^2 \end{smallmatrix} \right\}}
\setr ...{\left| \begin{smallmatrix} 1^2 : 1^2 \\ 1^2 \end{smallmatrix} \right\}}
...{\left| \begin{smallmatrix} 1^2 \\ 1^2 \end{smallmatrix} \right\}}
...{\left| \begin{smallmatrix} 1^2 : 1^2 \end{smallmatrix} \right\}}

1034 \DeclareRobustCommand{\set}
1035   {\ifstarvar{\@sset}{\@set}}
1036 \DeclareRobustCommand{\@set}
1037   {\ifexclavar{\@e@xset{\vert}}{\@@xset{\vert}}}}
1038 \DeclareRobustCommand{\@sset}
1039   {\ifexclavar{\@e@xset{\!:\!}}{\@@xset{\!:\!}}}}
1040 \DeclareRobustCommand{\@@xset}[3]
1041   {\mth{\argmid{\left\lbrace}{\argsep{#2}{\,\middle#1\,}{#3}}{\right\rbrace}}}
1042 \DeclareRobustCommand{\@e@xset}[3]
1043   {\mth!{\argmid{\lbrace}{\argsep{#2}{\,\,#1\,}{#3}}{\rbrace}}}
1044 \DeclareRobustCommand{\setl}
1045   {\ifstarvar{\@ssetl}{\@setl}}
1046 \DeclareRobustCommand{\@setl}
1047   {\ifexclavar{\@e@xsetl{\,\,\vert}}{\@@xsetl{\,\,\vert}}}}
1048 \DeclareRobustCommand{\@ssetl}
1049   {\ifexclavar{\@e@xsetl{\!:\!}}{\@@xsetl{\!:\!}}}}
1050 \DeclareRobustCommand{\@@xsetl}[2]
1051   {\mth{\argmid{\left\lbrace}{#2}{\,\,\right#1\,}}}
1052 \DeclareRobustCommand{\@e@xsetl}[2]
1053   {\mth!{\argmid{\lbrace}{#2}{\,\,\,#1\,}}}
1054 \DeclareRobustCommand{\setr}
1055   {\ifstarvar{\@setr}{\@setr}}
1056 \DeclareRobustCommand{\@setr}
1057   {\ifexclavar{\@e@setr}{\@@setr}}
1058 \DeclareRobustCommand{\@@setr}[1]
1059   {\mth{\argmid{\left.}{#1}{\right\rbrace}}}
1060 \DeclareRobustCommand{\@e@setr}[1]
1061   {\mth!{\argmid{\}{#1}{\rbrace}}}

```

```

\card ...
1062 \DeclareRobustCommand{\card}
1063   {\ifexclavar{\@ecard}{\@card}}
1064 \DeclareRobustCommand{\@card}[1]
1065   {\mth{\argmid{\left\lvert\right\lvert}{\#1}{\right\lvert}}}}
1066 \DeclareRobustCommand{\@ecard}[1]
1067   {\mth!\{\argmid{\left\lvert\right\lvert}{\#1}{\right\lvert}}}}

\pow ...
1068 \DeclareRobustCommand{\pow}
1069   {\ifstarvar{\@spow}{\@pow}}
1070 \DeclareRobustCommand{\@pow}[1]
1071   {\mth{2^{\defval{\#1}{\cdot}}}}
1072 \DeclareRobustCommand{\@spow}
1073   {\ifexclavar{\@e@spow}{\@@spow}}
1074 \DeclareRobustCommand{\@e@spow}[1]
1075   {\mthargfun!\mathscr{P}{\defval{\#1}{\cdot}}}}
1076 \DeclareRobustCommand{\@@spow}[1]
1077   {\mthargfun\mathscr{P}{\defval{\#1}{\cdot}}}}

1078 %** Relations *****%

\emptyrel ...
1079 \DeclareRobustCommand{\emptyrel}
1080   {\mth{\varnothing}}

1081 %*****%

\dom ...
\cod 1082 \usrmth{\dom}{\argfun}
\rng 1083 \usrmth{\cod}{\argfun}
\img 1084 \usrmth{\rng}{\argfun}
1085 \usrmth{\img}{\argfun}

\deg ...
1086 \usrmth{\deg}{\argfun}

1087 %*****%

\prj ...
1088 \DeclareRobustCommand{\prj}
1089   {\mth\lbp{\downarrow}}

\rst ...
1090 \DeclareRobustCommand{\rst}
1091   {\mth\lbp{\upharpoonright}}

\cmp ...
1092 \DeclareRobustCommand{\cmp}
1093   {\mth\lbp{\circ}}

1094 %** Functions *****%

\emptyfun ...
1095 \DeclareRobustCommand{\emptyfun}
1096   {\mth{\varnothing}}

1097 %*****%

\pto ...
\pmapsto 1098 \DeclareMathOperator{\pto}
1099   {\ensuremath{\rightharpoonup}}
1100 \DeclareMathOperator{\pmapsto}
1101   {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize$\llcorner$}}}}
1102   {\kern-1.5ex\rightharpoonup}}

```

```

1103 %%*****%

\fix ...
\ifp 1104 \usrmth{fix}{-}{fun}
\lfp 1105 \usrmth{ifp}{-}{fun}
\gfp 1106 \usrmth{lfp}{-}{fun}
1107 \usrmth{gfp}{-}{fun}

1108 %%*****%

\Aomega ...
\AOmega 1109 \usrmth{Aomega}{-}{argset}[\omega]
1110 \usrmth{AOmega}{-}{argset}[\Omega]

\Atheta ...
\Atheta 1111 \usrmth{Atheta}{-}{argset}[\theta]
1112 \usrmth{Atheta}{-}{argset}[\Theta]

\Aomicron ...
\AOmicron 1113 \usrmth{Aomicron}{-}{argset}[\omicron]
1114 \usrmth{AOmicron}{-}{argset}[\Omicron]

1115 %%** Numbers *****%

\SetB ...
1116 \DeclareRobustCommand{\SetB}
1117 {\mthset[mathbb]{B}}

\SetF ...
1118 \DeclareRobustCommand{\SetF}
1119 {\mthset[mathbb]{F}}

\SetN ...
\SetNI 1120 \DeclareRobustCommand{\SetN}
1121 {\mthset[mathbb]{N}}
1122 \DeclareRobustCommand{\SetNI}[1] []
1123 {\SetN[\infty #1]}

\SetZ ...
\SetZI 1124 \DeclareRobustCommand{\SetZ}
\SetZPI 1125 {\mthset[mathbb]{Z}}
\SetZNI 1126 \DeclareRobustCommand{\SetZI}[1] []
1127 {\SetZ[\pm\infty #1]}
1128 \DeclareRobustCommand{\SetZPI}[1] []
1129 {\SetZ[+\infty #1]}
1130 \DeclareRobustCommand{\SetZNI}[1] []
1131 {\SetZ[-\infty #1]}

\SetQ ...
\SetQI 1132 \DeclareRobustCommand{\SetQ}
\SetQPI 1133 {\mthset[mathbb]{Q}}
\SetQNI 1134 \DeclareRobustCommand{\SetQI}[1] []
1135 {\SetQ[\pm\infty #1]}
1136 \DeclareRobustCommand{\SetQPI}[1] []
1137 {\SetQ[+\infty #1]}
1138 \DeclareRobustCommand{\SetQNI}[1] []
1139 {\SetQ[-\infty #1]}

\SetR ...
\SetRI 1140 \DeclareRobustCommand{\SetR}
\SetRPI 1141 {\mthset[mathbb]{R}}
\SetRNI 1142 \DeclareRobustCommand{\SetRI}[1] []
1143 {\SetR[\pm\infty #1]}

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1144 \DeclareRobustCommand{\SetRPI}[1] []
1145   {\SetR[+\infty #1]}
1146 \DeclareRobustCommand{\SetRNI}[1] []
1147   {\SetR[-\infty #1]}

\SetC ...
\SetCI 1148 \DeclareRobustCommand{\SetC}
1149   {\mthset[mathbb]{C}}
1150 \DeclareRobustCommand{\SetCI}[1] []
1151   {\SetC[\infty #1]}

1152 %%*****%

\num ...
\numcc 1153 \DeclareRobustCommand{\num}[1]
\numco 1154   {\mth{[#1]}}
\numoc 1155 \DeclareRobustCommand{\numcc}[2]
\numoo 1156   {\mth{[\argsep{#1}{,}{#2}]}}
1157 \DeclareRobustCommand{\numco}[2]
1158   {\mth{[\argsep{#1}{,}{#2})}}
1159 \DeclareRobustCommand{\numoc}[2]
1160   {\mth{(\argsep{#1}{,}{#2})}}
1161 \DeclareRobustCommand{\numoo}[2]
1162   {\mth{(\argsep{#1}{,}{#2}))}}

1163 %%*****%

\abs ...
\norm 1164 \DeclareRobustCommand{\abs}
1165   {\ifexclavar{\@eabs}{\@abs}}
1166 \DeclareRobustCommand{\@abs}[1]
1167   {\mth{\argmid{\left\lvert}{#1}{\right\rvert}}}
1168 \DeclareRobustCommand{\@eabs}[1]
1169   {\mth!\{\argmid{\lvert}{#1}{\rvert}}}
1170 \DeclareRobustCommand{\norm}
1171   {\ifexclavar{\@enorm}{\@norm}}
1172 \DeclareRobustCommand{\@norm}[1]
1173   {\mth{\argmid{\left\lVert}{#1}{\right\lVert}}}
1174 \DeclareRobustCommand{\@enorm}[1]
1175   {\mth!\{\argmid{\lVert}{#1}{\rVert}}}

\floor ...
\ceil 1176 \DeclareRobustCommand{\floor}
1177   {\ifexclavar{\@efloor}{\@floor}}
1178 \DeclareRobustCommand{\@efloor}[1]
1179   {\mth{\argmid{\left\lfloor}{#1}{\right\rfloor}}}
1180 \DeclareRobustCommand{\@efloor}[1]
1181   {\mth!\{\argmid{\lfloor}{#1}{\rfloor}}}
1182 \DeclareRobustCommand{\ceil}
1183   {\ifexclavar{\@eceil}{\@ceil}}
1184 \DeclareRobustCommand{\@eceil}[1]
1185   {\mth{\argmid{\left\lceil}{#1}{\right\rceil}}}
1186 \DeclareRobustCommand{\@eceil}[1]
1187   {\mth!\{\argmid{\lceil}{#1}{\rceil}}}

1188 %%*****%

\arg ...
1189 \usrmth{arg}{\}{fun}

\evn ...
\odd 1190 \usrmth{evn}{\}{fun}
1191 \usrmth{odd}{\}{fun}

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\bst ...
\argbst 1192 \usrmth{bst}{-}{fun}
        1193 \usrmth{argbst}{-}{fun}[arg\,bst]

\min ...
\max 1194 \usrmth{min}{-}{fun}
\argmin 1195 \usrmth{max}{-}{fun}
\argmax 1196 \usrmth{argmin}{-}{fun}[arg\,min]
        1197 \usrmth{argmax}{-}{fun}[arg\,max]

\inf ...
\sup 1198 \usrmth{inf}{-}{fun}
        1199 \usrmth{sup}{-}{fun}

\gcd ...
\lcm 1200 \usrmth{gcd}{-}{fun}
        1201 \usrmth{lcm}{-}{fun}
        1202 %** Sequences *****%%

\emptyseq ...
1203 \DeclareRobustCommand{\emptyseq}
1204   {\mth{\varepsilon}}

\len ...
1205 \DeclareRobustCommand{\len}
1206   {\ifexclavar{\@elen}{\@len}}
1207 \DeclareRobustCommand{\@len}[1]
1208   {\mth{\argmid{\left\lvert\right\lvert}{#1}{\right\lvert}}}}
1209 \DeclareRobustCommand{\@elen}[1]
1210   {\mth!\{\argmid{\left\lvert\right\lvert}{#1}{\right\lvert}}}}

\fst ...
\lst 1211 \usrmth{fst}{-}{argfun}
        1212 \usrmth{lst}{-}{argfun}

1213 \fi
1214 %*****%%
1215 %*****%%
1216 %** Macros for Computational-Complexity Classes *****%%
1217 %*****%%
1218 \ifcom@

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

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

    • \defcomcls{CompClass}[NewClass];

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

1219 \DeclareRobustCommandx{\defcomcls}[2][2=]
1220   {\csdef{#1}{\txtoargcom{\defval{#2}{#1}}}}

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

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

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

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

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

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

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

• \defcomclgrp{CompClass}{NewClass};

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

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

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

```

```

\CoNCompClassH[sub][sup][arg] = CONNEWCLASS-HARDSUB(ARG)
\NCompClassC[sub][sup][arg] = NNEWCLASS-COMpleteSUB(ARG)
\CoNCompClassC[sub][sup][arg] = CONNEWCLASS-COMpleteSUB(ARG)

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

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

1221 \DeclareRobustCommandx{\defcomclsggrp}[2][2=]
1222   {\defcomclsgrpsem{#1}{\defval{#2}{#1}}}%
1223   \defcomclsgrpsem{#1}{\defval{#2}{#1}}[Co]}
1224 \DeclareRobustCommandx{\defcomclsgrpsem}[3][3=]
1225   {\defcomclsgrpred{#3#1}{#2}[#3]}%
1226   \defcomclsgrpred{#3D#1}{#2}[#3D]}%
1227   \defcomclsgrpred{#3N#1}{#2}[#3N]}%
1228   \defcomclsgrpred{#3U#1}{#2}[#3U]}%
1229   \defcomclsgrpred{#3A#1}{#2}[#3A]}%
1230 \DeclareRobustCommandx{\defcomclsgrpred}[3][3=]
1231   {\defcomclsgrpcomd{#1}{#2}[#3]}%
1232   \defcomclsgrpcomd{#1E}{#2}[#3][-easy]}%
1233   \defcomclsgrpcomd{#1H}{#2}[#3][-hard]}%
1234   \defcomclsgrpcomd{#1C}{#2}[#3][-complete]}%
1235 \DeclareRobustCommandx{\defcomclsgrpcomd}[4][3=, 4=]
1236   {\csdef{#1}{\txtoargcom{#3#2#4}}}%

\defcomhrc ... to do!
    • \defcomhrc{CompHierarchy};

      CompHierarchy[sub][sup][par] = COMHIERARCHYSUB[PAR]

    • \defcomhrc{CompHierarchy}[NewHierarchy];

      CompHierarchy[sub][sup][par] = NEWHIERARCHYSUB[PAR]

1237 \DeclareRobustCommandx{\defcomhrc}[2][2=]
1238   {\csdef{#1}{\txtoparcom{\defval{#2}{#1}}}%

1239   %%*****%

\Easy
\Hard 1240 \cmdtxtcom{Easy}
\Complete 1241 \cmdtxtcom{Hard}
1242 \cmdtxtcom{Complete}

1243 %%*****%

\FPT    • \FPT[sub][sup][arg] = FPTSUB(ARG)
\FPLin  • \FPLin[sub][sup][arg] = FPLSUB(ARG)
\FPQdr  • \FPQdr[sub][sup][arg] = FPQSUB(ARG)
\FPCub

```

- $\backslash\text{FPCub}[\text{sub}][\text{sup}][\text{arg}] = \text{FPC}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$

```

1244 \defcomcls{FPT}
1245 \defcomcls{FPLin}[FPL]
1246 \defcomcls{FPQdr}[FPQ]
1247 \defcomcls{FPCub}[FPC]

1248 %%*****%

\Time(E/H/C)      • \Time[sub][sup][arg] = \TIME_{SUB}^{SUP}(ARG)
\DTIME(E/H/C)     • \TimeE[sub][sup][arg] = \TIME-EASY_{SUB}^{SUP}(ARG)
\NTIME(E/H/C)     • \TimeH[sub][sup][arg] = \TIME-HARD_{SUB}^{SUP}(ARG)
\UTIME(E/H/C)     • \TimeC[sub][sup][arg] = \TIME-COMPLETE_{SUB}^{SUP}(ARG)
\ATIME(E/H/C)     • \DTIME[sub][sup][arg] = \DTIME_{SUB}^{SUP}(ARG)
                  • \DTIMEE[sub][sup][arg] = \DTIME-EASY_{SUB}^{SUP}(ARG)
                  • \DTIMEH[sub][sup][arg] = \DTIME-HARD_{SUB}^{SUP}(ARG)
                  • \DTIMEC[sub][sup][arg] = \DTIME-COMPLETE_{SUB}^{SUP}(ARG)
                  • \NTIME[sub][sup][arg] = \NTIME_{SUB}^{SUP}(ARG)
                  • \NTIMEE[sub][sup][arg] = \NTIME-EASY_{SUB}^{SUP}(ARG)
                  • \NTIMEH[sub][sup][arg] = \NTIME-HARD_{SUB}^{SUP}(ARG)
                  • \NTIMEC[sub][sup][arg] = \NTIME-COMPLETE_{SUB}^{SUP}(ARG)
                  • \UTIME[sub][sup][arg] = \UTIME_{SUB}^{SUP}(ARG)
                  • \UTIMEE[sub][sup][arg] = \UTIME-EASY_{SUB}^{SUP}(ARG)
                  • \UTIMEH[sub][sup][arg] = \UTIME-HARD_{SUB}^{SUP}(ARG)
                  • \UTIMEC[sub][sup][arg] = \UTIME-COMPLETE_{SUB}^{SUP}(ARG)
                  • \ATIME[sub][sup][arg] = \ATIME_{SUB}^{SUP}(ARG)
                  • \ATIMEE[sub][sup][arg] = \ATIME-EASY_{SUB}^{SUP}(ARG)
                  • \ATIMEH[sub][sup][arg] = \ATIME-HARD_{SUB}^{SUP}(ARG)
                  • \ATIMEC[sub][sup][arg] = \ATIME-COMPLETE_{SUB}^{SUP}(ARG)

1249 \defcomclsgrp{Time}

\Space(E/H/C)      • \Space[sub][sup][arg] = \SPACE_{SUB}^{SUP}(ARG)
\DSpace(E/H/C)     • \SpaceE[sub][sup][arg] = \SPACE-EASY_{SUB}^{SUP}(ARG)
\NSpace(E/H/C)     • \SpaceH[sub][sup][arg] = \SPACE-HARD_{SUB}^{SUP}(ARG)
\USpace(E/H/C)     • \SpaceC[sub][sup][arg] = \SPACE-COMPLETE_{SUB}^{SUP}(ARG)
\ASpace(E/H/C)     • \DSpace[sub][sup][arg] = \DSPACE_{SUB}^{SUP}(ARG)
                  • \DSpaceE[sub][sup][arg] = \DSPACE-EASY_{SUB}^{SUP}(ARG)
                  • \DSpaceH[sub][sup][arg] = \DSPACE-HARD_{SUB}^{SUP}(ARG)
                  • \DSpaceC[sub][sup][arg] = \DSPACE-COMPLETE_{SUB}^{SUP}(ARG)
                  • \NSpace[sub][sup][arg] = \NSPACE_{SUB}^{SUP}(ARG)
                  • \NSpaceE[sub][sup][arg] = \NSPACE-EASY_{SUB}^{SUP}(ARG)
                  • \NSpaceH[sub][sup][arg] = \NSPACE-HARD_{SUB}^{SUP}(ARG)
                  • \NSpaceC[sub][sup][arg] = \NSPACE-COMPLETE_{SUB}^{SUP}(ARG)
                  • \USpace[sub][sup][arg] = \USPACE_{SUB}^{SUP}(ARG)
                  • \USpaceE[sub][sup][arg] = \USPACE-EASY_{SUB}^{SUP}(ARG)
                  • \USpaceH[sub][sup][arg] = \USPACE-HARD_{SUB}^{SUP}(ARG)
                  • \USpaceC[sub][sup][arg] = \USPACE-COMPLETE_{SUB}^{SUP}(ARG)
                  • \ASpace[sub][sup][arg] = \ASPACE_{SUB}^{SUP}(ARG)
                  • \ASpaceE[sub][sup][arg] = \ASPACE-EASY_{SUB}^{SUP}(ARG)
                  • \ASpaceH[sub][sup][arg] = \ASPACE-HARD_{SUB}^{SUP}(ARG)
                  • \ASpaceC[sub][sup][arg] = \ASPACE-COMPLETE_{SUB}^{SUP}(ARG)

1250 \defcomclsgrp{Space}

\LogTime(E/H/C)    • \LogTime[sub][sup][arg] = \LOGTIME_{SUB}^{SUP}(ARG)
\DLogTime(E/H/C)  • \LogTimeE[sub][sup][arg] = \LOGTIME-EASY_{SUB}^{SUP}(ARG)
\NLogTime(E/H/C)  • \LogTimeH[sub][sup][arg] = \LOGTIME-HARD_{SUB}^{SUP}(ARG)
\ULogTime(E/H/C)  • \LogTimeC[sub][sup][arg] = \LOGTIME-COMPLETE_{SUB}^{SUP}(ARG)
\ALogTime(E/H/C)  • \DLogTime[sub][sup][arg] = \DLOGTIME_{SUB}^{SUP}(ARG)
                  • \DLogTimeE[sub][sup][arg] = \DLOGTIME-EASY_{SUB}^{SUP}(ARG)
                  • \DLogTimeH[sub][sup][arg] = \DLOGTIME-HARD_{SUB}^{SUP}(ARG)
                  • \DLogTimeC[sub][sup][arg] = \DLOGTIME-COMPLETE_{SUB}^{SUP}(ARG)

```

- $\backslash \text{NLogTime}[\text{sub}][\text{sup}][\text{arg}] = \text{NLOGTIME}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{NLogTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{NLOGTIME-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{NLogTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{NLOGTIME-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{NLogTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{NLOGTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
- $\backslash \text{ULogTime}[\text{sub}][\text{sup}][\text{arg}] = \text{ULOGTIME}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ULogTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{ULOGTIME-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ULogTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{ULOGTIME-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ULogTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{ULOGTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
- $\backslash \text{ALogTime}[\text{sub}][\text{sup}][\text{arg}] = \text{ALOGTIME}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ALogTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{ALOGTIME-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ALogTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{ALOGTIME-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
 $\backslash \text{ALogTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{ALOGTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$

```
1251 \defcomclsgrp{LogTime}
```

\LogSpace (E/H/C)	• \LogSpace[sub][sup][arg] = LOGSPACE ^{SUB} _{SUB} (ARG)
\DLogSpace (E/H/C)	\DLogSpaceE[sub][sup][arg] = LOGSPACE-EASY ^{SUB} _{SUB} (ARG)
\NLogSpace (E/H/C)	\LogSpaceH[sub][sup][arg] = LOGSPACE-HARD ^{SUB} _{SUB} (ARG)
\ULogSpace (E/H/C)	\LogSpaceC[sub][sup][arg] = LOGSPACE-COMPLETE ^{SUB} _{SUB} (ARG)
\ALogSpace (E/H/C)	• \DLogSpace[sub][sup][arg] = DLOGSPACE ^{SUB} _{SUB} (ARG)
	\DLogSpaceE[sub][sup][arg] = DLOGSPACE-EASY ^{SUB} _{SUB} (ARG)
	\DLogSpaceH[sub][sup][arg] = DLOGSPACE-HARD ^{SUB} _{SUB} (ARG)
	\DLogSpaceC[sub][sup][arg] = DLOGSPACE-COMPLETE ^{SUB} _{SUB} (ARG)
	• \NLogSpace[sub][sup][arg] = NLOGSPACE ^{SUB} _{SUB} (ARG)
	\NLogSpaceE[sub][sup][arg] = NLOGSPACE-EASY ^{SUB} _{SUB} (ARG)
	\NLogSpaceH[sub][sup][arg] = NLOGSPACE-HARD ^{SUB} _{SUB} (ARG)
	\NLogSpaceC[sub][sup][arg] = NLOGSPACE-COMPLETE ^{SUB} _{SUB} (ARG)
	• \ULogSpace[sub][sup][arg] = ULOGSPACE ^{SUB} _{SUB} (ARG)
	\ULogSpaceE[sub][sup][arg] = ULOGSPACE-EASY ^{SUB} _{SUB} (ARG)
	\ULogSpaceH[sub][sup][arg] = ULOGSPACE-HARD ^{SUB} _{SUB} (ARG)
	\ULogSpaceC[sub][sup][arg] = ULOGSPACE-COMPLETE ^{SUB} _{SUB} (ARG)
	• \ALogSpace[sub][sup][arg] = ALOGSPACE ^{SUB} _{SUB} (ARG)
	\ALogSpaceE[sub][sup][arg] = ALOGSPACE-EASY ^{SUB} _{SUB} (ARG)
	\ALogSpaceH[sub][sup][arg] = ALOGSPACE-HARD ^{SUB} _{SUB} (ARG)
	\ALogSpaceC[sub][sup][arg] = ALOGSPACE-COMPLETE ^{SUB} _{SUB} (ARG)

```
1252 \defcomclsgrp{LogSpace}
```

$\backslash \text{PTime}(E/H/C)$	• $\backslash \text{PTime}[\text{sub}][\text{sup}][\text{arg}] = \text{PTIME}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
$\backslash \text{DPTIME}(E/H/C)$	$\backslash \text{PTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{PTIME-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
$\backslash \text{NPTime}(E/H/C)$	$\backslash \text{PTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{PTIME-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
$\backslash \text{UPTime}(E/H/C)$	$\backslash \text{PTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{PTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
$\backslash \text{APTime}(E/H/C)$	• $\backslash \text{DPTIME}[\text{sub}][\text{sup}][\text{arg}] = \text{DPTIME}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{DPTIMEE}[\text{sub}][\text{sup}][\text{arg}] = \text{DPTIME-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{DPTIMEH}[\text{sub}][\text{sup}][\text{arg}] = \text{DPTIME-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{DPTIMEC}[\text{sub}][\text{sup}][\text{arg}] = \text{DPTIME-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	• $\backslash \text{NPTime}[\text{sub}][\text{sup}][\text{arg}] = \text{NPTime}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{NPTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{NPTime-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{NPTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{NPTime-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{NPTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{NPTime-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	• $\backslash \text{UPTime}[\text{sub}][\text{sup}][\text{arg}] = \text{UPTime}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{UPTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{UPTime-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{UPTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{UPTime-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{UPTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{UPTime-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	• $\backslash \text{APTime}[\text{sub}][\text{sup}][\text{arg}] = \text{APTime}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{APTimeE}[\text{sub}][\text{sup}][\text{arg}] = \text{APTime-EASY}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{APTimeH}[\text{sub}][\text{sup}][\text{arg}] = \text{APTime-HARD}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$
	$\backslash \text{APTimeC}[\text{sub}][\text{sup}][\text{arg}] = \text{APTime-COMPLETE}_{\text{SUB}}^{\text{SUP}}(\text{ARG})$

```
1253 \defcomclsgrp{PTime}
```



```

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

1263 \defcomhrc{DLH}{\mth{\Delta}}
1264 \defcomhrc{DBH}{\mth[\mathbf]{\Delta}}

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

1265 \defcomhrc{ELH}{\mth{\Sigma}}
1266 \defcomhrc{EBH}{\mth[\mathbf]{\Sigma}}

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

1267 \defcomhrc{ULH}{\mth{\Pi}}
1268 \defcomhrc{UBH}{\mth[\mathbf]{\Pi}}

1269 \fi
1270 %*****

1271 %*****
1272 %** Macros for Graphs *****
1273 %*****
1274 \ifgrp@

1275 %** Syntax *****

\GrpName ...
... 1276 \newcommand{\grpname}{G}
1277 \usrmthlatupp{Grp}{Name}{name}[\grpname]

\VerSet ...
... 1278 \newcommand{\versym}{v}
1279 \newcommand{\verset}{V}
1280 \cmdmthsetext{Ver}[\verset][\versym]
1281 \cmdmthsymelm{iver}[\versym_{I}]
1282 \cmdmthsymelm{fver}[\versym_{F}]

\EdgRel ...
1283 \newcommand{\edgrel}{E}
1284 \cmdmthrel{Edg}[\edgrel]

1285 %** Semantics *****

\PthSet ...
\pthFun 1286 \newcommand{\pthsym}{\pi}
1287 \newcommand{\pthset}{Pth}
1288 \cmdmthsetext{Pth}[\pthset][\pthsym]
1289 \usrmth{path}{-}{argfun}

\pre ...
\suc 1290 \usrmth{pre}{-}{oargfun}
1291 \usrmth{suc}{-}{oargfun}

1292 \fi
1293 %*****

1294 %*****
1295 %** Macros for Games *****
1296 %*****
1297 \ifgam@

1298 %** Logic Games *****

```

```

\SATG ...
... 1299 %% Satisfiability Games
1300 \cmdtxttoparname{SATG}[Sat]
1301
1302 %% Validity Games
1303 \cmdtxttoparname{VALG}[Val]
1304
1305 %% Evaluation Games
1306 \cmdtxttoparname{EVLG}[Evl]
1307
1308 %% Synthesis Games
1309 \cmdtxttoparname{SYNG}[Syn]
1310
1311 %% Model-Checking Games
1312 \cmdtxttoparname{MCG}[MC]
1313
1314 %% Ehrenfeucht-Fraisse Games
1315 \cmdtxttoparname{EFG}[EF]
1316 %** Syntax *****%%

\PlrSym ...
\OppSym 1317 \newcommand{\plrsym}{E}
1318 \cmdmthsym{Plr}[\plrsym]
1319 \newcommand{\oppsym}{A}
1320 \cmdmthsym{Opp}[\oppsym]

\ArenaName ...
... 1321 \newcommand{\arenaname}{A}
1322 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

\PosSet ...
... 1323 \newcommand{\possym}{v}
1324 \newcommand{\posset}{Ps}
1325 \cmdmthsetext{Pos}[\posset][\possym]
1326 \cmdmthsymelm{ipos}[\possym_{I}]
1327 \cmdmthsymelm{fpos}[\possym_{F}]
1328 \cmdmthset{PPos}[\posset_{\PlrSym}]
1329 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1330 \cmdmthset{OPos}[\posset_{\OppSym}]
1331 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\PlrFun ...
1332 \newcommand{\plrfun}{pl}
1333 \cmdmthfun{plr}[\plrfun]

\MovRel ...
1334 \newcommand{\movrel}{Mv}
1335 \cmdmthrel{Mov}[\movrel]

\GameName ...
... 1336 \newcommand{\gamename}{\Game}
1337 \usrmthlatupp{Game}{Name}{name}[\gamename]

\WinSet ...
1338 \newcommand{\winset}{Wn}
1339 \cmdmthset{Win}[\winset]

\ObsSet ...
\obsFun 1340 \newcommand{\obsset}{Ob}
1341 \cmdmthset{Obs}[\obsset]
1342 \cmdmthfun{obs}

```



```

1343 %%** Semantics *****%%

\HstSet ...
... 1344 \newcommand{\hstsym}{\varpi}
1345 \newcommand{\hstset}{Hst}
1346 \cmdmthsetext{Hst}[\hstset][\hstsym]
1347 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1348 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1349 \cmdmthset{OHst}[\hstset_{\OppSym}]
1350 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1351 \usrmth{play}{-}{oargfun}

\PlaySet ...
\playFun 1352 \newcommand{\playsym}{\pi}
1353 \newcommand{\playset}{Play}
1354 \cmdmthsetext{Play}[\playset][\playsym]
1355 \usrmth{hst}{-}{oargfun}

\StrSet ...
... 1356 \newcommand{\strsym}{\sigma}
1357 \newcommand{\strset}{Str}
1358 \cmdmthsetext{Str}[\strset][\strsym]
1359 \cmdmthset{PStr}[\strset_{\PlrSym}]
1360 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1361 \cmdmthset{OStr}[\strset_{\OppSym}]
1362 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet ...
\prfFun 1363 \newcommand{\prfsym}{\xi}
1364 \newcommand{\prfset}{Prf}
1365 \cmdmthsetext{Prf}[\prfset][\prfsym]

\ent ...
\esc 1366 \usrmth{ent}{-}{oargfun}
1367 \usrmth{esc}{-}{oargfun}

\int ...
\out 1368 \usrmth{int}{-}{oargfun}
1369 \usrmth{out}{-}{oargfun}

\atr ...
\rch 1370 \usrmth{atr}{-}{oargfun}
1371 \usrmth{rch}{-}{oargfun}

\lift ...
1372 \usrmth{lift}{-}{oargfun}

\sol ...
1373 \usrmth{sol}{-}{oargfun}

1374 %%** Qualitative Games on Graph *****%%

\BG ...
... 1375 %% Buchi Games
1376 \cmdtxttoparname{BG}
1377
1378 %% Co-Buchi Games
1379 \cmdtxttoparname{CG}
1380
1381 %% Parity Games
1382 \cmdtxttoparname{PG}
1383
1384 %% Rabin Games

```

```

1385 \cmdtxttoparname{RG}
1386
1387 %% Streett Games
1388 \cmdtxttoparname{SG}
1389
1390 %% Muller Games
1391 \cmdtxttoparname{MG}
1392 %** Syntax *****%%

\Evnsym ...
\OddSym 1393 \newcommand{\evnsym}{0}
1394 \cmdmthsym{Evn}[\evnsym]
1395 \newcommand{\oddsym}{1}
1396 \cmdmthsym{Odd}[\oddsym]

\PrtSet ...
\prtFun 1397 \newcommand{\prtsym}{p}
1398 \newcommand{\prtset}{Pr}
1399 \cmdmthsetext{Prt}[\prtset][\prtsym]
1400 \cmdmthfun{prt}[pr]
1401 %** Semantics *****%%
...
1402 %** Quantitative Games on Graph *****%%

\EG ...
... 1403 %% Energy Games
1404 \cmdtxttoparname{EG}
1405
1406 %% Mean-Payoff Games
1407 \cmdtxttoparname{MPG}
1408
1409 %% Discounted-Payoff Games
1410 \cmdtxttoparname{DPG}
1411 %** Syntax *****%%

\MaxSym ...
\MinSym 1412 \newcommand{\maxsym}{\oplus}
1413 \cmdmthsym{Max}[\maxsym]
1414 \newcommand{\minsym}{\boxminus}
1415 \cmdmthsym{Min}[\minsym]

\WghSet ...
\wghFun 1416 \newcommand{\wghsym}{w}
1417 \newcommand{\wghset}{Wg}
1418 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1419 \cmdmthfun{wgh}[wg]
1420 %** Semantics *****%%
...
1421 \fi
1422 %*****%%
1423 %*****%%
1424 %** Macros for Logics *****%%
1425 %*****%%
1426 \iflog@
1427 %** Propositional Logics *****%%

```

```

\BF ...
\QBF 1428 % Boolean Formulae
... 1429 \cmdtxttoparname{BF}
1430
1431 % Quantified Boolean Formulae
1432 \DeclareRobustCommand{\QBF}
1433   {\txtname{Q}\BF}
1434 \DeclareRobustCommand{\EBF}
1435   {\ensuremath{\exists}\BF}
1436 \DeclareRobustCommand{\UBF}
1437   {\ensuremath{\forall}\BF}
1438 %** Syntax ****%/

\LogSig ...
... 1439 \newcommand{\logsig}{L}
1440 \usrmthlatupp{Log}{Sig}{sig}[\logsig]

\Tt ...
\Ff 1441 \newcommand{\ttsym}{\top}
1442 \usrmth{Tt}{\}{sym}[\ttsym]
1443 \newcommand{\ffsym}{\bot}
1444 \usrmth{Ff}{\}{sym}[\ffsym]

\LNeg ...
\LNot 1445 \newcommand{\lnegsym}{\neg}
1446 \usrmth{LNeg}{\}{luop}[\lnegsym]
1447 \newcommand{\lnotsym}{\sim}
1448 \usrmth{LNot}{\}{luop}[\lnotsym]

\LCon ...
\LDis 1449 \newcommand{\lconsym}{\land}
1450 \usrmth{LCon}{\}{lbop}[\lconsym]
1451 \newcommand{\ldissym}{\lor}
1452 \usrmth{LDis}{\}{lbop}[\ldissym]

\LImp ...
\LCoI 1453 \newcommand{\limpsym}{\rightarrow}
1454 \usrmth{LImp}{\}{lbop}[\limpsym]
1455 \newcommand{\lcoisym}{\leftrightarrow}
1456 \usrmth{LCoI}{\}{lbop}[\lcoisym]

\LExs ...
\LAll 1457 \newcommand{\lexssym}{\exists}
1458 \usrmth{LExs}{\}{luop}[\lexssym]
1459 \newcommand{\lallsym}{\forall}
1460 \usrmth{LAll}{\}{luop}[\lallsym]

\APSet ...
... 1461 \newcommand{\apsym}{p}
1462 \newcommand{\apset}{AP}
1463 \cmdmthsetext{AP}[\apset][\apsym]
1464 \usrmth{ap}{\}{argfun}

\sub ...
1465 \usrmth{sub}{\}{argfun}

\Cnt ...
\Qnt 1466 \usrmth{Cnt}{\}{sym}[C]
\Sym 1467 \usrmth{Qnt}{\}{sym}[Q]
1468 \usrmth{Sym}{\}{sym}[\odot]

```

```

\QAE ...
\QEA 1469 \usrmth{QAE}{-}{sym}[\forall\exists]
      1470 \usrmth{QEA}{-}{sym}[\exists\forall]

\QntSet ...
... 1471 \newcommand{\qntsym}{\wp}
      1472 \newcommand{\qntset}{Qn}
      1473 \cmdmthsetext{Qnt}[\qntset][\qntsym]

\free ...
\bound 1474 \usrmth{free}{-}{argfun}
        1475 \usrmth{bound}{-}{argfun}

\dep ...
\alt 1476 \usrmth{dep}{-}{argfun}
      1477 \usrmth{alt}{-}{argfun}

\cnf ...
\dnf 1478 \cmdtxtabr{cnf}
... 1479 \cmdtxtabr{dnf}
      1480 \cmdtxtabr{pnf}
      1481 \cmdtxtabr{nnf}

      1482 %** Semantics *****%%

\LogStr ...
... 1483 \newcommand{\logstr}{L}
      1484 \usrmthlatupp{Log}{Str}{str}[\logstr]

\ValSet ...
... 1485 \newcommand{\valsym}{\xi}
      1486 \newcommand{\valset}{Val}
      1487 \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet ...
... 1488 \newcommand{\asgsym}{\chi}
      1489 \newcommand{\asgset}{Asg}
      1490 \cmdmthsetext{Asg}[\asgset][\asgsym]

      1491 %** First-Order Logics I *****%%

\FOL ...
... 1492 % First-Order Logic
      1493 \cmdtxtoparname{FOL}[Fol]
      1494 \cmdtxtoparname{FO}[FO]
      1495
      1496 % Monadic First-Order Logic
      1497 \DeclareRobustCommand{\MFOL}
      1498   {\{\txtname{M}\}\FOL}
      1499 \DeclareRobustCommand{\MFO}
      1500   {\{\txtname{M}\}\FO}

      1501 %** Syntax *****%%

\VarSig ...
... 1502 \newcommand{\varsig}{V}
      1503 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
      1504 \newcommand{\varsym}{x}
      1505 \newcommand{\varset}{Vr}
      1506 \cmdmthsetext{Var}[\varset][\varsym]
      1507 \usrmth{var}{-}{argfun}[vr]
      1508 \usrmth{dim}{-}{argfun}[dm]

```

```

\ConSig ...
... 1509 \newcommand{\consig}{C}
1510 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1511 \newcommand{\consym}{c}
1512 \newcommand{\conset}{Cn}
1513 \cmdmthsetext{Con}[\conset][\consym]
1514 \usrmth{con}{-}{argfun}[cn]

\FunSig ...
... 1515 \newcommand{\funsig}{F}
1516 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1517 \newcommand{\funsym}{f}
1518 \newcommand{\funset}{Fn}
1519 \cmdmthsetext{Fun}[\funset][\funsym]
1520 \usrmth{fun}{-}{argfun}[fn]
1521 \usrmth{art}{-}{argfun}[ar]

\TerSig ...
... 1522 \newcommand{\tersig}{T}
1523 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1524 \newcommand{\tersym}{t}
1525 \newcommand{\terset}{Tr}
1526 \cmdmthsetext{Ter}[\terset][\tersym]
1527 \usrmth{ter}{-}{argfun}

\RelSig ...
... 1528 \newcommand{\relsig}{R}
1529 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1530 \newcommand{\relsym}{r}
1531 \newcommand{\relset}{Rl}
1532 \cmdmthsetext{Rel}[\relset][\relsym]
1533 \usrmth{rel}{-}{argfun}[rl]

\skm ...
1534 \usrmth{skm}{-}{argfun}

1535 %%** Semantics *****%%

\ConStr ...
... 1536 \newcommand{\constr}{C}
1537 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr ...
... 1538 \newcommand{\funstr}{F}
1539 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr ...
... 1540 \newcommand{\terstr}{T}
1541 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr ...
... 1542 \newcommand{\relstr}{R}
1543 \usrmthlatupp{Rel}{Str}{str}[\relstr]
1544 %%** First-Order Logics II *****%%

\DF ...
\IF 1545 % Dependence-Friendly Logic
... 1546 \cmdtxtopname{DF}
1547
1548 % Independence-Friendly Logic
1549 \cmdtxtopname{IF}
1550

```

```

1551 % Dependence/Independence-Friendly Logic
1552 \cmdtxtoparname{DIF}
1553
1554 % Dependence Logic
1555 \cmdtxtoparname{DL}
1556
1557 % Team Logic
1558 \cmdtxtoparname{TL}
1559
1560 % Alternating Dependence-Friendly Logic
1561 \cmdtxtoparname{ADF}
1562
1563 % Alternating Independence-Friendly Logic
1564 \cmdtxtoparname{AIF}
1565
1566 % Alternating Dependence/Independence-Friendly Logic
1567 \cmdtxtoparname{ADIF}
1568
1568 %** Syntax *****%%
\LEExs ...
\LAAll 1569 \newcommand{\leexssym}{\Sigma}
1570 \usrmth{LEExs}{\luop}{\leexssym}
1571 \newcommand{\laallsym}{\Pi}
1572 \usrmth{LAAll}{\luop}{\laallsym}
1573 %** Semantics *****%%
...
1574 %** Second-Order Logics I *****%%
\SOL ...
... 1575 % Second-Order Logic
1576 \cmdtxtoparname{SOL}[Sol]
1577 \cmdtxtoparname{SO}
1578
1579 % Weak Second-Order Logic
1580 \DeclareRobustCommand{\WSOL}
1581   {\{\txtrname{W}\}\SOL}
1582 \DeclareRobustCommand{\WSO}
1583   {\{\txtrname{W}\}\SO}
1584
1585 % coWeak Second-Order Logic
1586 \DeclareRobustCommand{\coWSOL}
1587   {\{\txtrname{coW}\}\SOL}
1588 \DeclareRobustCommand{\coWSO}
1589   {\{\txtrname{coW}\}\SO}
1590
1591 % Monadic Second-Order Logic
1592 \DeclareRobustCommand{\MSOL}
1593   {\{\txtrname{M}\}\SOL}
1594 \DeclareRobustCommand{\MSO}
1595   {\{\txtrname{M}\}\SO}
1596
1597 % Weak Monadic Second-Order Logic
1598 \DeclareRobustCommand{\WMSOL}
1599   {\{\txtrname{W}\}\MSOL}
1600 \DeclareRobustCommand{\WMSO}
1601   {\{\txtrname{W}\}\MSO}
1602
1603 % coWeak Monadic Second-Order Logic
1604 \DeclareRobustCommand{\coWMSOL}
1605   {\{\txtrname{coW}\}\MSOL}

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```

1606 \DeclareRobustCommand{\coWMSO}
1607   {\txtname{coW}}\MSO}

1608 %** Syntax *****%

\FVarSet ...
... 1609 \newcommand{\fvarsym}{x}
1610 \newcommand{\fvarset}{FVr}
1611 \cmdmthsettext{FVar}[\fvarset][\fvarsym]

\SVarSet ...
... 1612 \newcommand{\svarsym}{X}
1613 \newcommand{\svarset}{SVr}
1614 \cmdmthsettext{SVar}[\svarset][\svarsym]

1615 %** Semantics *****%
...

1616 %** Second-Order Logics II *****%

\TL ...
\CL 1617 % Tree Logic
\PL 1618 \cmdtxttoparname{TL}
... 1619
1620 % Weak Tree Logic
1621 \DeclareRobustCommand{\WTL}
1622   {\txtname{W}}\TL}
1623
1624 % coWeak Tree Logic
1625 \DeclareRobustCommand{\coWTL}
1626   {\txtname{coW}}\TL}
1627
1628 % Monadic Tree Logic
1629 \DeclareRobustCommand{\MTL}
1630   {\txtname{M}}\TL}
1631
1632 % Weak Monadic Tree Logic
1633 \DeclareRobustCommand{\WMTL}
1634   {\txtname{W}}\MTL}
1635
1636 % coWeak Monadic Tree Logic
1637 \DeclareRobustCommand{\coWMTL}
1638   {\txtname{coW}}\MTL}
1639
1640 % Chain Logic
1641 \cmdtxttoparname{CL}
1642
1643 % Weak Chain Logic
1644 \DeclareRobustCommand{\WCL}
1645   {\txtname{W}}\CL}
1646
1647 % coWeak Chain Logic
1648 \DeclareRobustCommand{\coWCL}
1649   {\txtname{coW}}\CL}
1650
1651 % Monadic Chain Logic
1652 \DeclareRobustCommand{\MCL}
1653   {\txtname{M}}\CL}
1654
1655 % Weak Monadic Chain Logic
1656 \DeclareRobustCommand{\WMCL}
1657   {\txtname{W}}\MCL}
1658
1659 % coWeak Monadic Chain Logic

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```

1660 \DeclareRobustCommand{\coWMCL}
1661   {\txtname{coW}}\MCL}
1662
1663 % Path Logic
1664 \cmdtxttoparname{PL}
1665
1666 % Weak Path Logic
1667 \DeclareRobustCommand{\WPL}
1668   {\txtname{W}}\PL}
1669
1670 % coWeak Path Logic
1671 \DeclareRobustCommand{\coWPL}
1672   {\txtname{coW}}\PL}
1673
1674 % Monadic Path Logic
1675 \DeclareRobustCommand{\MPL}
1676   {\txtname{M}}\PL}
1677
1678 % Weak Monadic Path Logic
1679 \DeclareRobustCommand{\WMPL}
1680   {\txtname{W}}\MPL}
1681
1682 % coWeak Monadic Path Logic
1683 \DeclareRobustCommand{\coWMPL}
1684   {\txtname{coW}}\MPL}
1685 %** Syntax *****%
...
1686 %** Semantics *****%
...
1687 %** Modal Logics I *****%

\ML ...
\GML 1688 % Modal Logic
... 1689 \cmdtxttoparname{ML}
1690
1691 % Graded Modal Logic
1692 \DeclareRobustCommand{\GML}
1693   {\txtname{G}}\ML}
1694
1695 % Quantified Modal Logic
1696 \DeclareRobustCommand{\QML}
1697   {\txtname{Q}}\ML}
1698 \DeclareRobustCommand{\EML}
1699   {\ensuremath{\exists}\ML}
1700 \DeclareRobustCommand{\UML}
1701   {\ensuremath{\forall}\ML}
1702 %** Syntax *****%

\Opr ...
1703 \usrmth{Opr}{-}{sym}[Op]

\DMod ...
\BMod 1704 \usrmth{DMod}{-}{sym}[\Diamond]
1705 \usrmth{BMod}{-}{sym}[\Box]

\Exs ...
\All 1706 \DeclareRobustCommand{\Exs}
1707   {\ifstarvar{\@sexs}{\@exs}}
1708 \DeclareRobustCommand{\@sexs}[1]
1709   {\mth{\DMod}{#1}}

```



```

1710 \DeclareRobustCommand{\@exs}[1]
1711   {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
1712 \DeclareRobustCommand{\All}
1713   {\ifstarvar{\@sall}{\@all}}
1714 \DeclareRobustCommand{\@sall}[1]
1715   {\mth{\BMod}[#1]}
1716 \DeclareRobustCommand{\@all}[1]
1717   {\mth{\defval{\argmid{\left[]{\#1}{\right]}}{\BMod}}}
1718 %** Semantics *****%

\KrpStr ...
... 1719 \newcommand{\krpstr}{K}
1720 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

\WrlSet ...
... 1721 \newcommand{\wrlsym}{w}
1722 \newcommand{\wrlset}{W}
1723 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1724 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

\AccRel ...
\TrnRel 1725 \newcommand{\accsym}{R}
1726 \cmdmthrel{Acc}[\accsym]
1727 \cmdmthrel{Trn}[\accsym]

\labFun ...
1728 \newcommand{\labsym}{\lambda}
1729 \cmdmthfun{lab}[\labsym]

\PthSet ...
... 1730 \providecommand{\pthsym}{\pi}
1731 \providecommand{\pthset}{Pth}
1732 \cmdmthsetext{Pth}[\pthset][\pthsym]
1733 \usrmth{path}{\}{argfun}
1734 %** Modal Logics II *****%

\MC ...
\GMC 1735 % Mu Calculus
... 1736 \cmdtxttoparname{MC}[\ensuremath{\mu}-Calculus]
1737
1738 % Graded Mu Calculus
1739 \DeclareRobustCommand{\GMC}
1740   {\{\txtname{G}\}\MC}
1741
1742 % Quantified Mu Calculus
1743 \DeclareRobustCommand{\QMC}
1744   {\{\txtname{Q}\}\MC}
1745 \DeclareRobustCommand{\EMC}
1746   {\ensuremath{\exists}\MC}
1747 \DeclareRobustCommand{\UMC}
1748   {\ensuremath{\forall}\MC}
1749
1750 % Alternation-Free Mu Calculus
1751 \DeclareRobustCommand{\AFMC}
1752   {\{\txtname{AF}\}\MC}
1753
1754 % Alternation-Free Graded Mu Calculus
1755 \DeclareRobustCommand{\AFGMC}
1756   {\{\txtname{AF}\}\GMC}
1757
1758 % Quantified Alternation-Free Mu Calculus
1759 \DeclareRobustCommand{\QAFMC}

```

```

1760  {\txtname{Q}}\AFMC}
1761 \DeclareRobustCommand{\EAFMC}
1762  {\ensuremath{\exists}\AFMC}
1763 \DeclareRobustCommand{\UAFMC}
1764  {\ensuremath{\forall}\AFMC}
1765
1766 %%** Syntax *****%%
...
1767 %%** Semantics *****%%
...
1768 %%** Temporal Logics I *****%%

\PTL ...
\LTL 1769 % Propositional Temporal Logic
... 1770 \cmdtxtopname{PTL}
1771
1772 % Quantified Propositional Temporal Logic
1773 \DeclareRobustCommand{\QPTL}
1774  {\txtname{Q}}\PTL}
1775 \DeclareRobustCommand{\EPTL}
1776  {\ensuremath{\exists}\PTL}
1777 \DeclareRobustCommand{\UPTL}
1778  {\ensuremath{\forall}\PTL}
1779
1780 % Linear Temporal Logic
1781 \cmdtxtopname{LTL}
1782
1783 % Quantified Linear Temporal Logic
1784 \DeclareRobustCommand{\QLTL}
1785  {\txtname{Q}}\LTL}
1786 \DeclareRobustCommand{\ELTL}
1787  {\ensuremath{\exists}\LTL}
1788 \DeclareRobustCommand{\ULTL}
1789  {\ensuremath{\forall}\LTL}
1790
1790 %%** Syntax *****%%

\X ...
... 1791 \usrmth{X}{-}{sym}[X\,]
1792 \usrmth{F}{-}{sym}[F\,]
1793 \usrmth{G}{-}{sym}[G\,]
1794 \usrmth{U}{-}{sym}[\,U\,]
1795 \usrmth{R}{-}{sym}[\,R\,]

\Y ...
... 1796 \usrmth{Y}{-}{sym}[G\,]
1797 \usrmth{P}{-}{sym}[P\,]\let\SavePildcrow\P
1798 \usrmth{H}{-}{sym}[H\,]\let\SaveDoubleAcute\H
1799 \usrmth{S}{-}{sym}[\,S\,]\let\SaveSectionSymbol\S
1800 \usrmth{B}{-}{sym}[\,B\,]
1801
1801 %%** Semantics *****%%
...
1802 %%** Temporal Logics II *****%%

\PDL ...
\CTL 1803 % Propositional Dynamic Logic
... 1804 \cmdtxtopname{PDL}
1805
1806 % Computation Tree Logic
1807 \cmdtxtopname{CTL}

```

```

1808
1809 % Weak Computation Tree Logic
1810 \DeclareRobustCommand{\WCTL}
1811   {\textname{W}}\CTL}
1812
1813 % Quantified Computation Tree Logic
1814 \DeclareRobustCommand{\QCTL}
1815   {\textname{Q}}\CTL}
1816 \DeclareRobustCommand{\ECTL}
1817   {\ensuremath{\exists}\CTL}
1818 \DeclareRobustCommand{\UCTL}
1819   {\ensuremath{\forall}\CTL}
1820
1821 % Improved Computation Tree Logic
1822 \cmdtxtopname{CTLP}[CTL$^{+}$]
1823
1824 % Weak Improved Computation Tree Logic
1825 \DeclareRobustCommand{\WCTLP}
1826   {\textname{W}}\CTLP}
1827
1828 % Quantified Improved Computation Tree Logic
1829 \DeclareRobustCommand{\QCTLP}
1830   {\textname{Q}}\CTLP}
1831 \DeclareRobustCommand{\ECTLP}
1832   {\ensuremath{\exists}\CTLP}
1833 \DeclareRobustCommand{\UCTLP}
1834   {\ensuremath{\forall}\CTLP}
1835
1836 % Full Computation Tree Logic
1837 \cmdtxtopname{CTLS}[CTL*]
1838
1839 % Weak Full Computation Tree Logic
1840 \DeclareRobustCommand{\WCTLS}
1841   {\textname{W}}\CTLS}
1842
1843 % Quantified Full Computation Tree Logic
1844 \DeclareRobustCommand{\QCTLS}
1845   {\textname{Q}}\CTLS}
1846 \DeclareRobustCommand{\ECTLS}
1847   {\ensuremath{\exists}\CTLS}
1848 \DeclareRobustCommand{\UCTLS}
1849   {\ensuremath{\forall}\CTLS}
1850 %** Syntax *****%

\E ...
\A 1851 \usrnth{E}{\sym}
    1852 \usrnth{A}{\sym}
1853 %** Semantics *****%

...

1854 %** Game Logics I *****%

\ATL ...
... 1855 % Alternating Temporal Logic
    1856 \cmdtxtopname{ATL}
    1857
    1858 % Weak Alternating Tree Logic
    1859 \DeclareRobustCommand{\WATL}
    1860   {\textname{W}}\ATL}
    1861
    1862 % Quantified Alternating Temporal Logic
    1863 \DeclareRobustCommand{\QATL}
    1864   {\textname{Q}}\ATL}

```

```

1865 \DeclareRobustCommand{\EATL}
1866   {\ensuremath{\exists}\ATL}
1867 \DeclareRobustCommand{\UATL}
1868   {\ensuremath{\forall}\ATL}
1869
1870 % Improved Alternating Temporal Logic
1871 \cmdtxtopname{ATLP}[ATL$^{+}$]
1872
1873 % Weak Improved Alternating Tree Logic
1874 \DeclareRobustCommand{\WATLP}
1875   {\{\textname{W}\}\ATLP}
1876
1877 % Quantified Improved Alternating Temporal Logic
1878 \DeclareRobustCommand{\QATLP}
1879   {\{\textname{Q}\}\ATLP}
1880 \DeclareRobustCommand{\EATLP}
1881   {\ensuremath{\exists}\ATLP}
1882 \DeclareRobustCommand{\UATLP}
1883   {\ensuremath{\forall}\ATLP}
1884
1885 % Full Alternating Temporal Logic
1886 \cmdtxtopname{ATLS}[ATL*]
1887
1888 % Weak Full Alternating Tree Logic
1889 \DeclareRobustCommand{\WATLS}
1890   {\{\textname{W}\}\ATLS}
1891
1892 % Quantified Full Alternating Temporal Logic
1893 \DeclareRobustCommand{\QATLS}
1894   {\{\textname{Q}\}\ATLS}
1895 \DeclareRobustCommand{\EATLS}
1896   {\ensuremath{\exists}\ATLS}
1897 \DeclareRobustCommand{\UATLS}
1898   {\ensuremath{\forall}\ATLS}
1899 %** Syntax *****%

```

\EExs ...

```

\AA11 1900 \DeclareRobustCommand{\EExs}[1]
1901   {\mth{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}
1902 \DeclareRobustCommand{\AA11}[1]
1903   {\mth{\argmid{\left[\left[]{\defval{#1}{\emptyset}}{\right]\right}}}}
1904 %** Semantics *****%

```

\CGS ...

```

1905 \cmdtxtname{CGS}

```

\CGSStr ...

```

... 1906 \newcommand{\cgsstr}{G}
1907 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

```

\AgnSet ...

```

... 1908 \newcommand{\agnsym}{a}
1909 \newcommand{\agnset}{Ag}
1910 \cmdmthsetext{Agn}[\agnset][\agnsym]

```

\ActSet ...

```

... 1911 \newcommand{\actsym}{c}
1912 \newcommand{\actset}{Ac}
1913 \cmdmthsetext{Act}[\actset][\actsym]

```

\PosSet ...

```

... 1914 \providecommand{\possym}{v}

```

```

1915 \providecommand{\posset}{Ps}
1916 \cmdmthsettext{Pos}[\posset][\possym]
1917 \cmdmthsymelm{ipos}[\possym_{I}]
1918 \cmdmthsymelm{fpos}[\possym_{F}]
1919 \cmdmthset{PPos}[\posset_{\PlrSym}]
1920 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1921 \cmdmthset{OPos}[\posset_{\OppSym}]
1922 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\SttSet ...
... 1923 \newcommand{\sttsym}{s}
1924 \newcommand{\sttset}{St}
1925 \cmdmthsettext{Stt}[\sttset][\sttsym]
1926 \cmdmthset{IStt}[\sttset_{I}]
1927 \cmdmthsymelm{istt}[\sttsym_{I}]
1928 \cmdmthset{FStt}[\sttset_{F}]
1929 \cmdmthsymelm{fstt}[\sttsym_{F}]

\DecSet ...
... 1930 \newcommand{\decsym}{d}
1931 \newcommand{\decset}{Dc}
1932 \cmdmthsettext{Dec}[\decset][\decsym]

\movFun ...
\movRel 1933 \newcommand{\movsym}{\tau}
1934 \cmdmthfun{mov}[\movsym]
1935 \cmdmthrel{mov}[\movsym]

\trnFun ...
\trnRel 1936 \newcommand{\trnsym}{\delta}
1937 \cmdmthfun{trn}[\trnsym]
1938 \cmdmthrel{trn}[\trnsym]

\PrfSet ...
1939 \providecommand{\prfsym}{\xi}
1940 \providecommand{\prfset}{Prf}
1941 \cmdmthsettext{Prf}[\prfset][\prfsym]

\HstSet ...
... 1942 \providecommand{\hstsym}{\varpi}
1943 \providecommand{\hstset}{Hst}
1944 \cmdmthsettext{Hst}[\hstset][\hstsym]
1945 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1946 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1947 \cmdmthset{OHst}[\hstset_{\OppSym}]
1948 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1949 \usrmth{hst}{\argfun}

\PlaySet ...
... 1950 \providecommand{\playsym}{\pi}
1951 \providecommand{\playset}{Play}
1952 \cmdmthsettext{Play}[\playset][\playsym]
1953 \usrmth{play}{\argfun}

\PlnSet ...
... 1954 \providecommand{\plnsym}{\rho}
1955 \providecommand{\plnset}{Pln}
1956 \cmdmthsettext{Pln}[\plnset][\plnsym]
1957 \cmdmthset{PPln}[\plnset_{\PlrSym}]
1958 \cmdmthsymelm{pPln}[\plnsym_{\PlrSym}]
1959 \cmdmthset{OPln}[\plnset_{\OppSym}]
1960 \cmdmthsymelm{oPln}[\plnsym_{\OppSym}]

```

```

\StrSet ...
... 1961 \providecommand{\strsym}{\sigma}
    1962 \providecommand{\strset}{\Str}
    1963 \cmdmthsetext{\Str}[\strset][\strsym]
    1964 \cmdmthset{PStr}[\strset_{\PlrSym}]
    1965 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
    1966 \cmdmthset{OStr}[\strset_{\OppSym}]
    1967 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

    1968 %** Game Logics II *****%%

\PL ...
... 1969 % Plan Logic
    1970 \cmdtxttoparname{\PL}
    1971
    1972 \DeclareRobustCommand{\EPL}
    1973   {\ensuremath{\exists}\PL}
    1974 \DeclareRobustCommand{\UPL}
    1975   {\ensuremath{\forall}\PL}
    1976
    1977 \DeclareRobustCommand{\FPL}
    1978   {\{\textname{F}\}\PL}
    1979
    1980 \DeclareRobustCommand{\EFPL}
    1981   {\ensuremath{\exists}\FPL}
    1982 \DeclareRobustCommand{\UFPL}
    1983   {\ensuremath{\forall}\FPL}
    1984
    1985 % One-Goal Plan Logic
    1986 \DeclareRobustCommandx{\OGPL}[3][1=, 2=, 3=]
    1987   {\PL[#1][#2][1g\arglef{,}{#3}]}
    1988
    1989 \DeclareRobustCommand{\EOGPL}
    1990   {\ensuremath{\exists}\OGPL}
    1991 \DeclareRobustCommand{\UOGPL}
    1992   {\ensuremath{\forall}\OGPL}
    1993
    1994 \DeclareRobustCommand{\FOGPL}
    1995   {\{\textname{F}\}\OGPL}
    1996
    1997 \DeclareRobustCommand{\EFOGPL}
    1998   {\ensuremath{\exists}\FOGPL}
    1999 \DeclareRobustCommand{\UFOGPL}
    2000   {\ensuremath{\forall}\FOGPL}
    2001
    2002 % Conjunctive-Goal Plan Logic
    2003 \DeclareRobustCommandx{\CGPL}[3][1=, 2=, 3=]
    2004   {\PL[#1][#2][cg\arglef{,}{#3}]}
    2005
    2006 \DeclareRobustCommand{\ECGPL}
    2007   {\ensuremath{\exists}\CGPL}
    2008 \DeclareRobustCommand{\UCGPL}
    2009   {\ensuremath{\forall}\CGPL}
    2010
    2011 \DeclareRobustCommand{\FCGPL}
    2012   {\{\textname{F}\}\CGPL}
    2013
    2014 \DeclareRobustCommand{\EFCGPL}
    2015   {\ensuremath{\exists}\FCGPL}
    2016 \DeclareRobustCommand{\UFCGPL}
    2017   {\ensuremath{\forall}\FCGPL}
    2018
    2019 % Disjunctive-Goal Plan Logic
    2020 \DeclareRobustCommandx{\DGPL}[3][1=, 2=, 3=]

```

```

2021   {\PL[#1][#2][dg\argleft{,}{#3}]}
2022
2023 \DeclareRobustCommand{\EDGPL}
2024   {\ensuremath{\exists}\DGPL}
2025 \DeclareRobustCommand{\UDGPL}
2026   {\ensuremath{\forall}\DGPL}
2027
2028 \DeclareRobustCommand{\FDGPL}
2029   {\{\textname{F}\}\DGPL}
2030
2031 \DeclareRobustCommand{\EFDGPL}
2032   {\ensuremath{\exists}\FDGPL}
2033 \DeclareRobustCommand{\UFDGPL}
2034   {\ensuremath{\forall}\FDGPL}
2035
2036 % Alternating-Goal Plan Logic
2037 \DeclareRobustCommandx{\AGPL}[3][1=, 2=, 3=]
2038   {\PL[#1][#2][ag\argleft{,}{#3}]}
2039
2040 \DeclareRobustCommand{\EAGPL}
2041   {\ensuremath{\exists}\AGPL}
2042 \DeclareRobustCommand{\UAGPL}
2043   {\ensuremath{\forall}\AGPL}
2044
2045 \DeclareRobustCommand{\FAGPL}
2046   {\{\textname{F}\}\AGPL}
2047
2048 \DeclareRobustCommand{\EFAGPL}
2049   {\ensuremath{\exists}\FAGPL}
2050 \DeclareRobustCommand{\UFAGPL}
2051   {\ensuremath{\forall}\FAGPL}
2052
2053 % Extended-Goal Plan Logic
2054 \DeclareRobustCommandx{\EGPL}[3][1=, 2=, 3=]
2055   {\PL[#1][#2][eg\argleft{,}{#3}]}
2056
2057 \DeclareRobustCommand{\EEGPL}
2058   {\ensuremath{\exists}\EGPL}
2059 \DeclareRobustCommand{\UEGPL}
2060   {\ensuremath{\forall}\EGPL}
2061
2062 \DeclareRobustCommand{\FEGPL}
2063   {\{\textname{F}\}\EGPL}
2064
2065 \DeclareRobustCommand{\EFEGPL}
2066   {\ensuremath{\exists}\FEGPL}
2067 \DeclareRobustCommand{\UFEGPL}
2068   {\ensuremath{\forall}\FEGPL}
2069
2070 % Boolean-Goal Plan Logic
2071 \DeclareRobustCommandx{\BGPL}[3][1=, 2=, 3=]
2072   {\PL[#1][#2][bg\argleft{,}{#3}]}
2073
2074 \DeclareRobustCommand{\EBGPL}
2075   {\ensuremath{\exists}\BGPL}
2076 \DeclareRobustCommand{\UBGPL}
2077   {\ensuremath{\forall}\BGPL}
2078
2079 \DeclareRobustCommand{\FBGPL}
2080   {\{\textname{F}\}\BGPL}
2081
2082 \DeclareRobustCommand{\EFBGPL}
2083   {\ensuremath{\exists}\FBGPL}

```

```

2084 \DeclareRobustCommand{\UFBGPL}
2085   {\ensuremath{\forall}\text{FBGPL}}
2086
2087 % Undefined-Goal Plan Logic
2088 \DeclareRobustCommandx{\XGPL}[3][1=, 2=, 3=]
2089   {\PL[#1][#2][xg\argleft{,}{#3}]}
2090
2091 \DeclareRobustCommand{\EXGPL}
2092   {\ensuremath{\exists}\text{XGPL}}
2093 \DeclareRobustCommand{\UXGPL}
2094   {\ensuremath{\forall}\text{XGPL}}
2095
2096 \DeclareRobustCommand{\FXGPL}
2097   {\{\textname{F}\}\text{XGPL}}
2098
2099 \DeclareRobustCommand{\EFXGPL}
2100   {\ensuremath{\exists}\text{FXGPL}}
2101 \DeclareRobustCommand{\UFXGPL}
2102   {\ensuremath{\forall}\text{FXGPL}}
2103
\SL ...
... 2103 % Strategy Logic
2104 \cmdtxttopname{SL}
2105
2106 \DeclareRobustCommand{\ESL}
2107   {\ensuremath{\exists}\text{SL}}
2108 \DeclareRobustCommand{\USL}
2109   {\ensuremath{\forall}\text{SL}}
2110
2111 \DeclareRobustCommand{\FSL}
2112   {\{\textname{F}\}\text{SL}}
2113
2114 \DeclareRobustCommand{\EFSL}
2115   {\ensuremath{\exists}\text{FSL}}
2116 \DeclareRobustCommand{\UFSL}
2117   {\ensuremath{\forall}\text{FSL}}
2118
2119 % One-Goal Strategy Logic
2120 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
2121   {\SL[#1][#2][lg\argleft{,}{#3}]}
2122
2123 \DeclareRobustCommand{\EOGSL}
2124   {\ensuremath{\exists}\text{OGSL}}
2125 \DeclareRobustCommand{\UOGSL}
2126   {\ensuremath{\forall}\text{OGSL}}
2127
2128 \DeclareRobustCommand{\FOGSL}
2129   {\{\textname{F}\}\text{OGSL}}
2130
2131 \DeclareRobustCommand{\EFOGSL}
2132   {\ensuremath{\exists}\text{FOGSL}}
2133 \DeclareRobustCommand{\UFOGSL}
2134   {\ensuremath{\forall}\text{FOGSL}}
2135
2136 % Conjunctive-Goal Strategy Logic
2137 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
2138   {\SL[#1][#2][cg\argleft{,}{#3}]}
2139
2140 \DeclareRobustCommand{\ECGSL}
2141   {\ensuremath{\exists}\text{CGSL}}
2142 \DeclareRobustCommand{\UCGSL}
2143   {\ensuremath{\forall}\text{CGSL}}
2144
2145 \DeclareRobustCommand{\FCGSL}

```



```

2146  {{\txtname{F}}\CGSL}
2147
2148 \DeclareRobustCommand{\EFCGSL}
2149  {\ensuremath{\exists}\FCGSL}
2150 \DeclareRobustCommand{\UFCGSL}
2151  {\ensuremath{\forall}\FCGSL}
2152
2153 % Disjunctive-Goal Strategy Logic
2154 \DeclareRobustCommandx{\DGSL}[3][1=, 2=, 3=]
2155  {\SL[#1][#2][dg\argleft{,}{#3}]}
2156
2157 \DeclareRobustCommand{\EDGSL}
2158  {\ensuremath{\exists}\DGSL}
2159 \DeclareRobustCommand{\UDGSL}
2160  {\ensuremath{\forall}\DGSL}
2161
2162 \DeclareRobustCommand{\FDGSL}
2163  {{\txtname{F}}\DGSL}
2164
2165 \DeclareRobustCommand{\EFDGSL}
2166  {\ensuremath{\exists}\FDGSL}
2167 \DeclareRobustCommand{\UFDGSL}
2168  {\ensuremath{\forall}\FDGSL}
2169
2170 % Alternating-Goal Strategy Logic
2171 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
2172  {\SL[#1][#2][ag\argleft{,}{#3}]}
2173
2174 \DeclareRobustCommand{\EAGSL}
2175  {\ensuremath{\exists}\AGSL}
2176 \DeclareRobustCommand{\UAGSL}
2177  {\ensuremath{\forall}\AGSL}
2178
2179 \DeclareRobustCommand{\FAGSL}
2180  {{\txtname{F}}\AGSL}
2181
2182 \DeclareRobustCommand{\EFAGSL}
2183  {\ensuremath{\exists}\FAGSL}
2184 \DeclareRobustCommand{\UFAGSL}
2185  {\ensuremath{\forall}\FAGSL}
2186
2187 % Extended-Goal Strategy Logic
2188 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
2189  {\SL[#1][#2][eg\argleft{,}{#3}]}
2190
2191 \DeclareRobustCommand{\EEGSL}
2192  {\ensuremath{\exists}\EGSL}
2193 \DeclareRobustCommand{\UEGSL}
2194  {\ensuremath{\forall}\EGSL}
2195
2196 \DeclareRobustCommand{\FEGSL}
2197  {{\txtname{F}}\EGSL}
2198
2199 \DeclareRobustCommand{\EFEGSL}
2200  {\ensuremath{\exists}\FEGSL}
2201 \DeclareRobustCommand{\UFEGSL}
2202  {\ensuremath{\forall}\FEGSL}
2203
2204 % Boolean-Goal Strategy Logic
2205 \DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
2206  {\SL[#1][#2][bg\argleft{,}{#3}]}
2207
2208 \DeclareRobustCommand{\EBGSL}

```

```

2209 {\ensuremath{\exists}\BGS}
2210 \DeclareRobustCommand{\UBGS}
2211 {\ensuremath{\forall}\BGS}
2212
2213 \DeclareRobustCommand{\FBGS}
2214 {\{\textname{F}\}\BGS}
2215
2216 \DeclareRobustCommand{\EFBGS}
2217 {\ensuremath{\exists}\FBGS}
2218 \DeclareRobustCommand{\UFBGS}
2219 {\ensuremath{\forall}\FBGS}
2220
2221 % Nested-Goal Strategy Logic
2222 \DeclareRobustCommandx{\NGS}[3][1=, 2=, 3=]
2223 {\SL[#1][#2][ng\arglef{,}{#3}]}
2224
2225 \DeclareRobustCommand{\ENGSL}
2226 {\ensuremath{\exists}\NGSL}
2227 \DeclareRobustCommand{\UNGSL}
2228 {\ensuremath{\forall}\NGSL}
2229
2230 \DeclareRobustCommand{\FNGSL}
2231 {\{\textname{F}\}\NGSL}
2232
2233 \DeclareRobustCommand{\EFNGSL}
2234 {\ensuremath{\exists}\FNGSL}
2235 \DeclareRobustCommand{\UFNGSL}
2236 {\ensuremath{\forall}\FNGSL}
2237
2238 % Undefined-Goal Strategy Logic
2239 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
2240 {\SL[#1][#2][xg\arglef{,}{#3}]}
2241
2242 \DeclareRobustCommand{\EXGSL}
2243 {\ensuremath{\exists}\XGSL}
2244 \DeclareRobustCommand{\UXGSL}
2245 {\ensuremath{\forall}\XGSL}
2246
2247 \DeclareRobustCommand{\FXGSL}
2248 {\{\textname{F}\}\XGSL}
2249
2250 \DeclareRobustCommand{\EFXGSL}
2251 {\ensuremath{\exists}\FXGSL}
2252 \DeclareRobustCommand{\UFXGSL}
2253 {\ensuremath{\forall}\FXGSL}
2254 %** Syntax *****%

```

\BndSet ...

```

... 2255 \newcommand{\bndsym}{\flat}
2256 \newcommand{\bndset}{\Bn}
2257 \cmdmthsetext{Bnd}[\bndset][\bndsym]
2258 \cmdmthsymelm{idbnd}[\bndsym_{\text{id}}]
2259 \usrmth{bnd}{\}{argfun}

```

\psn ...

```

2260 \usrmth{psn}{\}{argfun}

2261 %** Semantics *****%

```

\nxt ...

```

2262 \usrmth{nxt}{\}{argfun}

2263 \fi
2264 %*****%

```

```

2265 %*****%
2266 %** Macros for Automata *****%
2267 %*****%
2268 \ifaut@

2269 %** Finite Word Automata *****%

\DFA ...
... 2270 \cmdtxtoparname{DFA}\cmdtxtoparname{NFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}
2271
2272 \cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}
2273
2274 \cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
2275 \cmdtxtoparname{DWW}\cmdtxtoparname{NWW}\cmdtxtoparname{UWW}\cmdtxtoparname{AWW}
2276 \cmdtxtoparname{DBW}\cmdtxtoparname{NBW}\cmdtxtoparname{UBW}\cmdtxtoparname{ABW}
2277 \cmdtxtoparname{DCW}\cmdtxtoparname{NCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}
2278 \cmdtxtoparname{DPW}\cmdtxtoparname{NPW}\cmdtxtoparname{UPW}\cmdtxtoparname{APW}
2279 \cmdtxtoparname{DRW}\cmdtxtoparname{NRW}\cmdtxtoparname{URW}\cmdtxtoparname{ARW}
2280 \cmdtxtoparname{DSW}\cmdtxtoparname{NSW}\cmdtxtoparname{USW}\cmdtxtoparname{ASW}
2281 \cmdtxtoparname{DMW}\cmdtxtoparname{NMW}\cmdtxtoparname{UMW}\cmdtxtoparname{AMW}

\GFG ...
... 2282 \cmdtxtoparname{GFG}
2283
2284 \cmdtxtoparname{PD}
2285 \cmdtxtoparname{PN}
2286
2287 \cmdtxtoparname{LD}
2288 \cmdtxtoparname{LN}

2289 %** Syntax *****%

\AutName ...
... 2290 \newcommand{\autname}{A}
2291 \usrmthlatupp{Aut}{Name}{name}[\autname]
2292 \newcommand{\autset}{Aut}
2293 \cmdmthset{Aut}[\autset]

\WAutSet ...
2294 \newcommand{\wautset}{WAut}
2295 \cmdmthset{WAut}[\wautset]

\SymSet ...
... 2296 \newcommand{\symsym}{\sigma}
2297 \newcommand{\symset}{\Sigma}
2298 \cmdmthsetext{Sym}[\symset][\symsym]

\SttSet ...
... 2299 \providecommand{\sttsym}{q}
2300 \providecommand{\sttset}{Q}
2301 \cmdmthsetext{Stt}[\sttset][\sttsym]
2302 \cmdmthset{IStt}[\sttset_I]
2303 \cmdmthsymelm{istt}[\sttsym_I]
2304 \cmdmthset{FStt}[\sttset_F]
2305 \cmdmthsymelm{fstt}[\sttsym_F]

\trnFun ...
\trnRel 2306 \providecommand{\trnsym}{\delta}
2307 \cmdmthfun{trn}[\trnsym]
2308 \cmdmthrel{trn}[\trnsym]

2309 %** Semantics *****%

```

```

\WrdSet ...
... 2310 \newcommand{\wrdsym}{w}
2311 \newcommand{\wrdsym}{w}
2312 \cmdmthsetext{Wrd}{\wrdsym} [\wrdsym]

\Lang ...
2313 \usrmth{Lang}{-}{argfun} [L]

2314 %** Finite Tree Automata *****%

\DTA ...
... 2315 \cmdtxtopname{DTA}\cmdtxtopname{NTA}\cmdtxtopname{UTA}\cmdtxtopname{ATA}
2316
2317 \cmdtxtopname{DFT}\cmdtxtopname{NFT}\cmdtxtopname{UFT}\cmdtxtopname{AFT}
2318 \cmdtxtopname{DWT}\cmdtxtopname{NWT}\cmdtxtopname{UWT}\cmdtxtopname{AWT}
2319 \cmdtxtopname{DBT}\cmdtxtopname{NBT}\cmdtxtopname{UBT}\cmdtxtopname{ABT}
2320 \cmdtxtopname{DCT}\cmdtxtopname{NCT}\cmdtxtopname{UCT}\cmdtxtopname{ACT}
2321 \cmdtxtopname{DPT}\cmdtxtopname{NPT}\cmdtxtopname{UPT}\cmdtxtopname{APT}
2322 \cmdtxtopname{DRT}\cmdtxtopname{NRT}\cmdtxtopname{URT}\cmdtxtopname{ART}
2323 \cmdtxtopname{DST}\cmdtxtopname{NST}\cmdtxtopname{UST}\cmdtxtopname{AST}
2324 \cmdtxtopname{DMT}\cmdtxtopname{NMT}\cmdtxtopname{UMT}\cmdtxtopname{AMT}
2325 %** Syntax *****%

\TAutSet ...
2326 \newcommand{\tautset}{TAut}
2327 \cmdmthset{TAut}{\tautset}

\DirSet ...
... 2328 \newcommand{\dirsym}{d}
2329 \newcommand{\dirset}{\Lambda}
2330 \cmdmthsetext{Dir}{\dirset} [\dirsym]

2331 %** Semantics *****%

\TreeSet ...
... 2332 \newcommand{\treesym}{T}
2333 \newcommand{\treeset}{Tr}
2334 \cmdmthsetext{Tree}{\treeset} [\treesym]

\wot ...
2335 \usrmth{wot}{-}{argfun}

2336 \fi
2337 %*****%

2338 %*****%
2339 %** Format Tricks *****%
2340 %*****%
2341 \iffirm@
2342 \RequirePackage{multicol}

... ..
2343 %...

2344 \fi
2345 %*****%

2346 %*****%
2347 %** Figure Tricks *****%
2348 %*****%
2349 \iffig@

2350 \RequirePackage{tikz}
2351 \usetikzlibrary{calc,arrows,shapes,patterns,graphs,matrix}

```

```

2352 \tikzstyle{every node} =
2353   [draw = none, fill = none, black, thin]
2354 \tikzstyle{every edge} +=
2355   [black, thick]

2356 \tikzstyle{noall} =
2357   [draw = none, fill = none]
2358 \tikzstyle{nodraw} =
2359   [draw = none, fill = white]
2360 \tikzstyle{nofill} =
2361   [draw = black, fill = none]

2362 \ifwrpfig@
2363   % Wrapfig Package
2364   \RequirePackage{wrapfig}
2365 \fi

2366 \fi
2367 %%*****%

2368 %%*****%
2369 %%** Table Tricks *****%
2370 %%*****%
2371 \iftab@

... ..
2372 %%...

2373 \fi
2374 %%*****%

2375 %%*****%
2376 %%** Algorithm Tricks *****%
2377 %%*****%
2378 \ifalg@

2379 \RequirePackage[ruled,vlined]{algorithm2e}
2380 \DontPrintSemicolon
2381 \SetInd{0.25em}{0.5em}
2382 \setlength{\algomargin}{1.25em}

\Signature ...
2383 \SetKw{Signature}{signature}

\Macro ...
\Function 2384 \SetKwFor{Macro}{macro}{}{}
\Procedure 2385 \SetKwFor{Function}{function}{}{}
2386 \SetKwFor{Procedure}{procedure}{}{}

\Let ...
2387 \SetKwFor{Let}{let}{in}{}

\True ...
\False 2388 \SetKw{True}{true}
2389 \SetKw{False}{false}

\From ...
\To 2390 \SetKw{From}{from}
\DownTo 2391 \SetKw{To}{to}
2392 \SetKw{DownTo}{downto}

\GoTo ...
\Break 2393 \SetKw{GoTo}{goto}
\Continue 2394 \SetKw{Break}{break}
2395 \SetKw{Continue}{continue}

```

```

\Guess ...
\ExsGuess 2396 \SetKw{Guess}{guess}
\AllGuess 2397 \SetKw{ExsGuess}{$\exists$-guess}
          2398 \SetKw{AllGuess}{$\forall$-guess}

\MIf ...
\MElseIf 2399 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}
\MElse
\nlr ...
    2400 \newrobustcmd{\nlr}[1]
    2401   {\addtocounter{AlgoLine}{1}%
    2402    \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

    2403 \fi
    2404 %%*****%
    2405 \endinput
    2406 \</package>

```

2 Change History

v0.0	General: First public release 1	v0.24	General: Correction of fragile macros 1
v0.1	General: Algorithm tricks 1	v0.25	General: Few additions and corrections 1
v0.10	General: Small refinements 1	v0.26	General: Few additions 1
v0.11	General: Few additions and corrections 1	v0.27	General: Small addition to ‘Algorithm tricks’ 1
v0.12	General: New starred variants 1	v0.28	General: Few additions 1
v0.13	General: Further starred variants 1	v0.29	General: Correction of fragile macros 1
v0.14	General: Few additions and corrections 1	v0.3	General: Few problems solved 1
v0.15	General: Refactoring of dtx sources 1	v0.30	General: Improvements and new command variants 1
v0.16	General: Small refinements and few additions 1	v0.31	General: Small improvements 1
v0.17	General: Few additions 1	v0.4	General: Refactoring, corrections, and extensions 1
v0.18	General: Few new starred variants 1	v0.5	General: Figure tricks 1
v0.19	General: Additional starred variants 1	v0.6	General: Small refinements 1
v0.2	General: Changes in ‘Auxiliary tricks’ 1	v0.7	General: Refinements, corrections, and extensions 1
v0.20	General: New binary operators 1	v0.8	General: Few refinements and corrections . . . 1
v0.21	General: Refactoring of function macros 1	v0.9	General: Small addition to ‘Algorithm tricks’ 1
v0.22	General: Few additions 1		
v0.23	General: New ‘Graphs’ section and small improvements 1		

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1940, 1942, 1943, 1950, 1951, 1954, 1955, 1961, 1962, 2299, 2300, 2306	991, 999, 1001, 1009, 1011, 1019, 1021, 1029, 1031, 1041, 1051, 1059, 1065, 1167, 1173, 1179, 1185, 1208, 1717, 1903	\setr 1034 \SetRI 1140 \SetRNI 1140 \SetRPI 1140 \SetZ 1124 \SetZI 1124 \SetZNI 1124 \SetZPI 1124 \sffamily 572 \Sigma .. 1265, 1266, 1569, 2297 \sigma 1356, 1961, 2296 \Signature 2383 \sim 1447 \skm 1534 \SL 2103 \SO 1583, 1589, 1595 \SOL 1575 \sol 1373 \Space(E/H/C) 1250 \stackrel 913 \StrSet 1356, 1961 \strset 1357, 1358, 1359, 1361, 1962, 1963, 1964, 1966 \strsym 1356, 1358, 1360, 1362, 1961, 1963, 1965, 1967 \SttSet 1923, 2299 \sttset 1924, 1925, 1926, 1928, 2300, 2301, 2302, 2304 \sttsym 1923, 1925, 1927, 1929, 2299, 2301, 2303, 2305 \stx 897 \sub 1465 \suc 1290 \sup 1198 \SVarSet 1612 \svarset 1613, 1614 \svarsym 1612, 1614 \Sym 1466 \SymSet 2296 \symset 2297, 2298 \symsym 2296, 2298
\prtFun 1397 \PrtSet 1397 \prtset 1398, 1399 \prtsym 1397, 1399 \psn 2260 \PSpace(E/H/C) 1254 \pthFun 1286 \PthSet 1286, 1730 \pthset . 1287, 1288, 1731, 1732 \pthsym . 1286, 1288, 1730, 1732 \PTime(E/H/C) 1253 PTL 1769 pto 1098	\Rightarrow 924, 926 \rightarrow 919, 1453 \rightharpoonup .. 1099, 1102 \rmfamily 381, 585 \rng 1082 \Role 891 \role 889 \rrbracket 948, 950 \rst 1090 \rVert 1173, 1175 \rvert 1065, 1067, 1167, 1169, 1208, 1210	\setr 1034 \SetRI 1140 \SetRNI 1140 \SetRPI 1140 \SetZ 1124 \SetZI 1124 \SetZNI 1124 \SetZPI 1124 \sffamily 572 \Sigma .. 1265, 1266, 1569, 2297 \sigma 1356, 1961, 2296 \Signature 2383 \sim 1447 \skm 1534 \SL 2103 \SO 1583, 1589, 1595 \SOL 1575 \sol 1373 \Space(E/H/C) 1250 \stackrel 913 \StrSet 1356, 1961 \strset 1357, 1358, 1359, 1361, 1962, 1963, 1964, 1966 \strsym 1356, 1358, 1360, 1362, 1961, 1963, 1965, 1967 \SttSet 1923, 2299 \sttset 1924, 1925, 1926, 1928, 2300, 2301, 2302, 2304 \sttsym 1923, 1925, 1927, 1929, 2299, 2301, 2303, 2305 \stx 897 \sub 1465 \suc 1290 \sup 1198 \SVarSet 1612 \svarset 1613, 1614 \svarsym 1612, 1614 \Sym 1466 \SymSet 2296 \symset 2297, 2298 \symsym 2296, 2298
Q	S	T
\QAE 1469 \QAFMC 1759 \QATL 1863 \QATLP 1878 \QATLS 1893 \QBF 1428 \QCTL 1814 \QCTLP 1829 \QCTLS 1844 \QEA 1469 \QLTL 1784 \QMC 1743 \QML 1696 \Qnt 1466 \QntSet 1471 \qntset 1472, 1473 \qntsym 1471, 1473 \QPSpace(E/H/C) 1256 \QPTIME(E/H/C) 1255 \QPTL 1773	\S 1799 \SATG 1299 \SaveDoubleAcute 1798 \SavePilcrow 1797 \SaveSectionSymbol 1799 \scshape 572, 585 \seqofcmd 187, 200, 204 \seqofgrklet 207, 531 \seqofgrklow 199, 208, 211, 527, 647, 661 \seqofgrkupp 203, 208, 213, 529 \seqoflatlet 196, 525, 647, 661 \seqoflatlow 192, 197, 211, 521 \seqoflatupp 194, 197, 213, 523, 605, 619, 633 \seqoflet 214, 537, 675, 695, 709, 723, 737, 783, 797, 812, 826 \seqoflow 210, 215, 533 \seqoftag 183, 193, 195 \seqofupp 212, 215, 535 \sequence 973 \sequence1 973 \sequencer 973 \set 1034 \SetB 1116 \SetC 1148 \SetCI 1148 \seteq 911 \SetF 1118 \SetInd 2381 \SetKw 2383, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398 \SetKwFor 2384, 2385, 2386, 2387 \SetKwIF 2399 \setl 1034 \setlength 2382 \SetN 1120 \SetNI 1120 \SetQ 1132 \SetQI 1132 \SetQNI 1132 \SetQPI 1132 \SetR 1140	\tab@false 120, 122 \tab@true 121 \tau 1933 \TAutSet 2326 \tautset 2326, 2327 \terset 1525, 1526 \TerSig 1522 \tersig 1522, 1523 \TerStr 1540 \terstr 1540, 1541 \tersym 1524, 1526 \text 310, 368, 913, 2258 \textstyle 767, 769 \textup 913 \thestring .. 688, 689, 690, 691 \Theta 1112 \theta 1111
R		
\raisebox 1101 \rangle 1009, 1010, 1011, 1012, 1029, 1030, 1031, 1032, 1711, 1901 \rbrace . 1041, 1043, 1059, 1061 \rceil 1185, 1187 \rch 1370 \relax 135 \relset 1531, 1532 \RelSig 1528 \relsig 1528, 1529 \RelStr 1542 \relstr 1542, 1543 \relsym 1530, 1532 \RequirePackage 3, 5, 6, 7, 224, 225, 226, 232, 237, 238, 243, 248, 263, 278, 284, 286, 2342, 2350, 2364, 2379 \resp 898 \rfloor 1179, 1181 \rho 1954 \right 435, 459, 948, 979, 981, 989,		

\UTime(E/H/C)	1249	\viceversa	865	\WMSOL	1598
\UXGPL	2093	\viz	867	\WMTL	1633
\UXGSL	2244	\vs	866	\wot	2335
V		W		\wp	1471
\ValSet	1485	\WATL	1859	\WPL	1667
\valset	1486 , 1487	\WATLP	1874	\WrdSet	2310
\valsym	1485 , 1487	\WATLS	1889	\wrdsset	2311 , 2312
\varcmd	173 , 971 , 972 , 979 , 980 , 981 , 982 , 989 , 990 , 991 , 992 , 999 , 1000 , 1001 , 1002 , 1009 , 1010 , 1011 , 1012 , 1019 , 1020 , 1021 , 1022 , 1029 , 1030 , 1031 , 1032	\WAutSet	2294	\wrdsym	2310 , 2312
\varepsilon	1204	\wautset	2294 , 2295	\WrlSet	1721
\varnothing	1080 , 1096	\WCL	1644	\wrlset	1722 , 1723
\varpi	1344 , 1942	\WCTL	1810	\wrlsym	1721 , 1723 , 1724
\varset	1505 , 1506	\WCTLP	1825	\wrpfig@false	116
\VarSig	1502	\WCTLs	1840	\wrpfig@true	115
\varsig	1502 , 1503	\wghFun	1416	\wrt	899
\varsym	1504 , 1506	\WghSet	1416	\WSO	1582
\vec	962	\wghset	1417 , 1418	\WSOL	1580
\VerSet	1278	\wghsym	1416 , 1418	\WTL	1621
\verset	1279 , 1280	\WH	1261	X	
\versym	1278 , 1280 , 1281 , 1282	\widehat	959	\X	1791
\vert	1037 , 1047	\widetilde	955	\XGPL	2088 , 2092 , 2094 , 2097
\Viceversa	882	\WinSet	1338	\XGSL	2239 , 2243 , 2245 , 2248
		\winset	1338 , 1339	\xi	1363 , 1485 , 1939
		\Wlogx	903	\xspace	310 , 312
		\wlogx	900	Y	
		\WMCL	1656	\Y	1796
		\WMPL	1679		
		\WMSO	1600		