

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

Fabio Mogavero  
fm@fabiomogavero.com

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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
```

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\*This document describes version v0.28 of the fmocdmac package, last revised 2024/01/10.

```

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

```

```

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

```

### Option-processing code:

```

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

```

### Package main body:

```

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

```

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

```

143 \csdef{omicron}{o}

```

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

```

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

```

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

- `\empchk{}{B} = ""`
- `\empchk{A}{B} = "B"`

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

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

- `\defval{}{B} = "B"`
- `\defval{A}{B} = "A"`

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

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

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

- `\arglef{A}{} = ""`
- `\arglef{A}{B} = "AB"`

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

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

- `\argrig{}{B} = ""`
- `\argrig{A}{B} = "AB"`

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

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

- `\argmid{A}{}{C} = ""`
- `\argmid{A}{B}{C} = "ABC"`

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

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

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

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

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

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

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

```

174 %%*****%

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

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

183 %%*****%

\seqoflatlow Sequence of Latin lowercase letters: \seqoflatlow{<A>}{<B>} ... to do!
184 \DeclareRobustCommand{\seqoflatlow}
185   {\seqoftag{a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z}}

\seqoflatupp Sequence of Latin uppercase letters: \seqoflatupp{<A>}{<B>} ... to do!
186 \DeclareRobustCommand{\seqoflatupp}
187   {\seqoftag{A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X,Y,Z}}

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

190 %%*****%

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

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

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

201 %%*****%

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

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

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

208 %%*****%

```

```

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

```

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

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

```

```

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

```

`\newtxt` ... to do!

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

```

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

```

`\newtxtsty` ... to do!

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

```

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

```

\newtxtarg ... to do!

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

```

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

```

\newtxtargsty ... to do!

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

```

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

```

\newtxtoarg ... to do!

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

```

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

```

\newtxtoargsty ... to do!

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



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

```

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

```

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

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

```

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

```

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

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

```

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

```

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

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

```

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

```

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

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

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

```

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

```

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

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

```

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

```

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

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

```

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

```

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

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

```

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

```

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

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

```

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

```

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

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

```

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

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

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

374 %%*****%

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

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

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

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

```

\cmdtxtopar ... to do!

```

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

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

```

\cmdtxtall ... to do!

```

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

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

402 %%*****%

```

\usrtxt ... to do!

```

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

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

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

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

```

\newmth ... to do!

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

```

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

```

\newmthsty ... to do!

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

```

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

```

\newmtharg ... to do!

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

```

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

```

\newmthargsty ... to do!

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

```

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

```

\newmthoarg ... to do!

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

- ```

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

```

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

- `\newmthpar[\mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”
- `\newmthpar[\mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”
- `\newmthpar[\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”
- `\newmthpar*[\mathrm]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”
- `\newmthpar*[\mathsf]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”
- `\newmthpar*[\mathtt]{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2]` = “Name<sup>sup</sup><sub>sub</sub>Ext1[Par<sup>Ex<sup>Ex</sup></sup>]Ext2”

```

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

```

\newmthopar ... to do!

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

```

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

```

\newmthoparsty ... to do!

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

```

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

```

\mthsubsup ... to do!

```

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

```

```

474 %%*****

```

\mth ... to do!

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

```

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

```

\mtharg ... to do!





```

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

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

\cmdmtharg ... to do!

• \cmdmtharg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthargNewCmd{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExsubExt1)Ext2
\mthargNewCmd*{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExsubExt1)Ext2

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

\cmdmthoarg ... to do!

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

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

\cmdmthpar ... to do!

• \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthparNewCmd{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExsubExt1]Ext2
\mthparNewCmd*{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExsubExt1]Ext2

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

\cmdmthopar ... to do!

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

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

\cmdmthall ... to do!

• \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
\mthNewCmd{Name}[sub][sup][Ext] = NamesupsubExt
\mthargNewCmd{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExsubExt1)Ext2
\mthargNewCmd*{Name}[sub][sup][Ext1]{ArgEx{Ex}}[Ext2] = NamesupsubExt1(ArgExsubExt1)Ext2
\mthoargNewCmd{Name}[sub][sup][ArgEx{Ex}} = Namesupsub(ArgExsubArgEx{Ex})
\mthoargNewCmd*{Name}[sub][sup][ArgEx{Ex}} = Namesupsub(ArgExsubArgEx{Ex})
\mthparNewCmd{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExsubExt1]Ext2
\mthparNewCmd*{Name}[sub][sup][Ext1]{ParEx{Ex}}[Ext2] = NamesupsubExt1[ParExsubExt1]Ext2
\mthoparNewCmd{Name}[sub][sup][ParEx{Ex}} = Namesupsub[ParExsubParEx{Ex}]
\mthoparNewCmd*{Name}[sub][sup][ParEx{Ex}} = Namesupsub[ParExsubParEx{Ex}]

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

505 %%*****%

```

\usrmth ... to do!

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

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

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

508 \@ifstar%

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

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

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

\usrmthlatlow ... to do!

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

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

\usrmthlatupp ... to do!

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

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

\usrmthlatlet ... to do!

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

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

\usrmthgrklow ... to do!

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

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

\usrmthgrkupp ... to do!

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

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

\usrmthgrklet ... to do!

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

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

\usrmthlow ... to do!

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

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

\usrmthupp ... to do!

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

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

```

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

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

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

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

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

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

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

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

\txtabr ... to do!
...

```

- $\text{\texttt{\textit{txtab}}}\{Name\}[sub][sup][Ext] = Name_{sub}^{sup}Ext$
- $\text{\texttt{\textit{xtargab}}}\{Name\}[sub][sup][Ext1]\{Arg\}[Ext2] = Name_{sub}^{sup}Ext1(Arg)Ext2$
- $\text{\texttt{\textit{xtparab}}}\{Name\}[sub][sup][Ext1]\{Par\}[Ext2] = Name_{sub}^{sup}Ext1[Par]Ext2$

547 %% Style for Abbreviations

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

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

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

549  $\text{\texttt{\textit{DeclareRobustCommand}}}\{\text{\texttt{\textit{cmdtxtab}}}\}[2][2=]$

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

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

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

551  $\text{\texttt{\textit{DeclareRobustCommand}}}\{\text{\texttt{\textit{cmdxtargab}}}\}[2][2=]$

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

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

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

553  $\text{\texttt{\textit{DeclareRobustCommand}}}\{\text{\texttt{\textit{cmdtxtoargab}}}\}[2][2=]$

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

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

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

555  $\text{\texttt{\textit{DeclareRobustCommand}}}\{\text{\texttt{\textit{cmdtxtparab}}}\}[2][2=]$

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

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

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

557  $\text{\texttt{\textit{DeclareRobustCommand}}}\{\text{\texttt{\textit{cmdtxtoparab}}}\}[2][2=]$

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

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

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

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

560 %% Style for Names

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

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

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

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

`\cmdtxtargname ... to do!`

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

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

`\cmdtxtoargname ... to do!`

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

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

`\cmdtxtparname ... to do!`

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

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

`\cmdtxtoparname ... to do!`

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

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

`\txtcom ... to do!`

...

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

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

`\cmdtxtcom ... to do!`

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

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

`\cmdtxtargcom ... to do!`

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

```

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

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

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

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

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

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

\AName ... to do!
... A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
592 \seqoflatupp{Name}{mthname}

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

```

```

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

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

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

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

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

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

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

\cmdmthargfam ... to do!

```

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

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

`\cmdmthoargfam ... to do!`

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

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

`\cmdmthparfam ... to do!`

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

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

`\cmdmthoparfam ... to do!`

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

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

`\mthcls ... to do!`

...

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

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

`\Acls ... to do!`

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

618 `\seqoflatupp{Cls}{mthcls}`

`\cmdmthcls ... to do!`

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

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

`\cmdmthargcls ... to do!`

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



```

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

\cmdmthoargcls ... to do!

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

\cmdmthparcls ... to do!

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

\cmdmthoparcls ... to do!

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

\mthsig ... to do!
...
    • \mthsig{Name}[sub][sup][Ext] =  $\mathcal{ame}_{sub}^{sup}Ext$ 
    • \mthargsig{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1\left(Arg^{Ex^{Ex}}\right)Ext2$ 
    • \mthargsig*{Name}[sub][sup][Ext1]{Arg^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1(Arg^{Ex^{Ex}})Ext2$ 
    • \mthparsig{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1\left[Par^{Ex^{Ex}}\right]Ext2$ 
    • \mthparsig*{Name}[sub][sup][Ext1]{Par^{Ex^{Ex}}}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1[Par^{Ex^{Ex}}]Ext2$ 
629 %% Style for Signatures
630 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}

\asig ... to do!
... a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
  A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
  α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϱ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
631 \seqoflatlet{Sig}{mthsig}\seqofgrklow{Sig}{mthsig}

\cmdmthsig ... to do!

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

\cmdmthargsig ... to do!

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

```

```

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

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

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

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

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

\vaStr ... to do!
...
    a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
    A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
    α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
644 \seqoflatlet{Str}{mthstr}\seqofgrklow{Str}{mthstr}

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

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

```

```

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

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

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

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

\mthset ... to do!
...
    • \mthset{Name}[sub][sup][Ext] = NamesupExt
    • \mthargset{Name}[sub][sup][Ext1]{ArgEx{ExEx}}[Ext2] = NamesupExt1(ArgExExt1Ex)Ext2
    • \mthargset*{Name}[sub][sup][Ext1]{ArgEx{ExEx}}[Ext2] = NamesupExt1(ArgExExt1Ex)Ext2
    • \mthparset{Name}[sub][sup][Ext1]{ParEx{ExEx}}[Ext2] = NamesupExt1[ParExExt1Ex]Ext2
    • \mthparset*{Name}[sub][sup][Ext1]{ParEx{ExEx}}[Ext2] = NamesupExt1[ParExExt1Ex]Ext2
655 %% Style for Sets
656 \cmdmthall{set}\newcommand{\mthstyset}{\mathrm}

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

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

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

```

```

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

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

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

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

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

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

\rel ... to do!
...
a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, L, T, U, V, W, X, Y, Z
α, β, γ, δ, ε, ζ, η, θ, ϑ, ι, κ, λ, μ, ν, ξ, ο, π, ϖ, ρ, ϑ, σ, ς, τ, υ, φ, ϕ, χ, ψ, ω
A, B, Γ, Δ, E, E, Z, H, Θ, Θ, I, K, K, A, M, N, Ξ, O, Π, Π, P, P, Σ, Σ, T, Υ, Φ, Φ, X, Ψ, Ω
676 \seqoflet{Rel}{mthrel}

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

```

```

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

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

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

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

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

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

\mathFun ... to do!
...
A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
 $\alpha, \beta, \gamma, \delta, \epsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \varpi, \rho, \varrho, \sigma, \varsigma, \tau, \upsilon, \phi, \varphi, \chi, \psi, \omega$ 
A, B,  $\Gamma, \Delta, E, Z, H, \Theta, \vartheta, I, K, \Lambda, M, N, \Xi, O, \Pi, \textit{II}, P, \Sigma, \varSigma, T, \Upsilon, \Phi, \varPhi, X, \Psi, \Omega$ 
689 \seqoflet{Fun}{mthfun}

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

```

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

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

`\cmdmthargfun ... to do!`

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

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

`\cmdmthoargfun ... to do!`

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

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

`\cmdmthparfun ... to do!`

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

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

`\cmdmthoparfun ... to do!`

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

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

`\mthsym ... to do!`

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

`\aSym ... to do!`

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

`\cmdmthsym ... to do!`

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

`\cmdmthargelm ... to do!`

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

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

`\cmdmthoargelm ... to do!`

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

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

`\cmdmthparelm ... to do!`

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

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

`\cmdmthoparelm ... to do!`

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

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

```
726 %%
```

`\cmdmthsymelm ... to do!`

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

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

`\cmdmthargsymelm ... to do!`

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



```

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

```

\cmdmthoargsymelm ... to do!

```

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

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

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

```

\cmdmthparsymelm ... to do!

```

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

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

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

```

\cmdmthoparsymelm ... to do!

```

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

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

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

```

```

742 %%*****%

```

\mthluop ... to do!

```

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

```

```

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

```

\cmdmthluop ... to do!

```

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

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

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

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

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

```

```

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

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

754 %%*****%

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

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

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

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

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

\cmdmthparsnt ... to do!

```

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

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

`\cmdmthoparsnt ... to do!`

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

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

`\mthfrm ... to do!`

...

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

768 `%% Style for Formulae`  
769 `\cmdmthall{frm}\newcommand{\mthstyfrm}{\mathit}`

`\aFrm ... to do!`

...

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

770 `\seqoflet{Frm}{mthfrm}`

`\cmdmthfrm ... to do!`

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

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

`\cmdmthargfrm ... to do!`

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

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

`\cmdmthoargfrm ... to do!`

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

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

`\cmdmthparfrm ... to do!`

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

```

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

\cmdmthoparfrm ... to do!



- \cmdmthoparfrm{cmdName};  

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

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



```

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

781 %%*****
```


```

```

\mthmat ... to do!
...


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



```

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


```

```

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

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

```

\cmdmthmat ... to do!



- \cmdmthmat{cmdName};  

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

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



```

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


```

```

\cmdmthargmat ... to do!



- \cmdmthargmat{cmdName};  

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

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



```

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


```

```

\cmdmthoargmat ... to do!



- \cmdmthoargmat{cmdName};  

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

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



```

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


```

```

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

\Eg • \Eg = *E.g.*

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

\Errata • \Errata = *Errata*

848 \cmdtxtabr{Errata}

\Erratum • \Erratum = *Erratum*

849 \cmdtxtabr{Erratum}

\Mutatismutandis • \Mutatismutandis = *Mutatis mutandis*

850 \cmdtxtabr{Mutatismutandis}[Mutatis mutandis]

\Percontra • \Percontra = *Per contra*

851 \cmdtxtabr{Percontra}[Per contra]

\Primafacie • \Primafacie = *Prima facie*

852 \cmdtxtabr{Primafacie}[Prima facie]

\Viceversa • \Viceversa = *Vice versa*

853 \cmdtxtabr{Viceversa}[Vice versa]

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

...

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

...

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

\ala • \ala = *à la*

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

\naif • \naif = *naïf*

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

\naive • \naive = *naïve*

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

\role • \role = *rôle*

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

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

\Role • \Role = *Rôle*

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

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

\aka • \aka = *a.k.a.*

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

\contd • \contd = *contd.*

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

\iff • \iff = *iff*

866 \cmdtxtabr{iff}

\iht • \iht = *i.h.t.*

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



```

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

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

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

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

872 %%*****

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

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

875 \fi
876 %%*****

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

881 %** General Notation *****

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

888 %%*****

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

\lcoimp ...
... 891 \DeclareRobustCommand{\lcoimp}
892   {\mthlbop{\leftrightarrow}}

893 %%*****

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

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

```

```

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

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

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

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

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

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

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

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

```

```

947 \varcmd{@ssequence1}{\mth*}{\{, \}}{}
948 \DeclareRobustCommand{\sequencer}
949 {\@ifstar{\@ssequencer}{\@sequencer}}
950 \varcmd{@sequencer}{\mth}{\left.}{,}{\right]}{}
951 \varcmd{@ssequencer}{\mth*}{\{, \}}{}
952 \DeclareRobustCommand{\sequencex}
953 {\@ifstar{\@ssequencex}{\@sequencex}}
954 \varcmd{@sequencex}{\mth}{\left[;}{\right]}{}
955 \varcmd{@ssequencex}{\mth*}{\{; \}}{}
956 \DeclareRobustCommand{\sequencexl}
957 {\@ifstar{\@ssequencexl}{\@sequencexl}}
958 \varcmd{@sequencexl}{\mth}{\left[;}{\right.]}{}
959 \varcmd{@ssequencexl}{\mth*}{\{; \}}{}
960 \DeclareRobustCommand{\sequencexr}
961 {\@ifstar{\@ssequencexr}{\@sequencexr}}
962 \varcmd{@sequencexr}{\mth}{\left.}{;}{\right]}{}
963 \varcmd{@ssequencexr}{\mth*}{\{; \}}{}

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

988 %** Sets *****%

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

```

```

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

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

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

1021 %** Relations ****

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

1024 %*****

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

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

1030 %*****

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

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

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

1037 %** Functions ****

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

1040 %*****

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

```

```

1046 %%*****%

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

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

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

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

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

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

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

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

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

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

```

```

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

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

1095 %%*****%

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

1106 %%*****%

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

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

1131 %%*****%

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

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

```

```

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

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

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

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

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

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

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

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

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

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

• \defcomcls{CompClass}[NewClass];

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

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

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

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

```

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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)

• \defcomclsgrp{CompClass}[NewClass];

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

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

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

```



```

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

```

```

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

```

```

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

```

```

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

```

\defcomhrc ... to do!

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

```

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

```

```

1182 %%*****%

```

\Easy

```

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

```

```

1186 %%*****%

```

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

```

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

\Time    • \Time[sub][sup][arg] = TIMESUBSUB(ARG)
...      \TimeE[sub][sup][arg] = TIME-EASYSUBSUB(ARG)
          \TimeH[sub][sup][arg] = TIME-HARDSUBSUB(ARG)
          \TimeC[sub][sup][arg] = TIME-COMpleteSUBSUB(ARG)

    • \DTime[sub][sup][arg] = DTIMESUBSUB(ARG)
      \DTimeE[sub][sup][arg] = DTIME-EASYSUBSUB(ARG)
      \DTimeH[sub][sup][arg] = DTIME-HARDSUBSUB(ARG)
      \DTimeC[sub][sup][arg] = DTIME-COMpleteSUBSUB(ARG)

    • \NTime[sub][sup][arg] = NTIMESUBSUB(ARG)
      \NTimeE[sub][sup][arg] = NTIME-EASYSUBSUB(ARG)
      \NTimeH[sub][sup][arg] = NTIME-HARDSUBSUB(ARG)
      \NTimeC[sub][sup][arg] = NTIME-COMpleteSUBSUB(ARG)

    • \UTime[sub][sup][arg] = UTIMESUBSUB(ARG)
      \UTimeE[sub][sup][arg] = UTIME-EASYSUBSUB(ARG)
      \UTimeH[sub][sup][arg] = UTIME-HARDSUBSUB(ARG)
      \UTimeC[sub][sup][arg] = UTIME-COMpleteSUBSUB(ARG)

    • \ATime[sub][sup][arg] = ATIMESUBSUB(ARG)
      \ATimeE[sub][sup][arg] = ATIME-EASYSUBSUB(ARG)
      \ATimeH[sub][sup][arg] = ATIME-HARDSUBSUB(ARG)
      \ATimeC[sub][sup][arg] = ATIME-COMpleteSUBSUB(ARG)
1192 \defcomclsgrp{Time}

\Space    • \Space[sub][sup][arg] = SPACESUBSUB(ARG)
...      \SpaceE[sub][sup][arg] = SPACE-EASYSUBSUB(ARG)
          \SpaceH[sub][sup][arg] = SPACE-HARDSUBSUB(ARG)
          \SpaceC[sub][sup][arg] = SPACE-COMpleteSUBSUB(ARG)

    • \DSpace[sub][sup][arg] = DSPACESUBSUB(ARG)
      \DSpaceE[sub][sup][arg] = DSPACE-EASYSUBSUB(ARG)
      \DSpaceH[sub][sup][arg] = DSPACE-HARDSUBSUB(ARG)
      \DSpaceC[sub][sup][arg] = DSPACE-COMpleteSUBSUB(ARG)

    • \NSpace[sub][sup][arg] = NSPACESUBSUB(ARG)
      \NSpaceE[sub][sup][arg] = NSPACE-EASYSUBSUB(ARG)
      \NSpaceH[sub][sup][arg] = NSPACE-HARDSUBSUB(ARG)
      \NSpaceC[sub][sup][arg] = NSPACE-COMpleteSUBSUB(ARG)

    • \USpace[sub][sup][arg] = USPACESUBSUB(ARG)
      \USpaceE[sub][sup][arg] = USPACE-EASYSUBSUB(ARG)
      \USpaceH[sub][sup][arg] = USPACE-HARDSUBSUB(ARG)
      \USpaceC[sub][sup][arg] = USPACE-COMpleteSUBSUB(ARG)

    • \ASpace[sub][sup][arg] = ASPACESUBSUB(ARG)
      \ASpaceE[sub][sup][arg] = ASPACE-EASYSUBSUB(ARG)
      \ASpaceH[sub][sup][arg] = ASPACE-HARDSUBSUB(ARG)
      \ASpaceC[sub][sup][arg] = ASPACE-COMpleteSUBSUB(ARG)
1193 \defcomclsgrp{Space}

\LogTime   • \LogTime[sub][sup][arg] = LOGTIMESUBSUB(ARG)
...      \LogTimeE[sub][sup][arg] = LOGTIME-EASYSUBSUB(ARG)
          \LogTimeH[sub][sup][arg] = LOGTIME-HARDSUBSUB(ARG)
          \LogTimeC[sub][sup][arg] = LOGTIME-COMpleteSUBSUB(ARG)

    • \DLogTime[sub][sup][arg] = DLOGTIMESUBSUB(ARG)
      \DLogTimeE[sub][sup][arg] = DLOGTIME-EASYSUBSUB(ARG)
      \DLogTimeH[sub][sup][arg] = DLOGTIME-HARDSUBSUB(ARG)
      \DLogTimeC[sub][sup][arg] = DLOGTIME-COMpleteSUBSUB(ARG)

```



- \PSPACE[sub][sup][arg] = PSPACE<sup>SUB</sup>(ARG)
- \PSPACEE[sub][sup][arg] = PSPACE-EASY<sup>SUB</sup>(ARG)
- \PSPACEH[sub][sup][arg] = PSPACE-HARD<sup>SUB</sup>(ARG)
- \PSPACEC[sub][sup][arg] = PSPACE-COMPLETE<sup>SUB</sup>(ARG)
- \DSPACE[sub][sup][arg] = DSPACE<sup>SUB</sup>(ARG)
- \DSPACEE[sub][sup][arg] = DSPACE-EASY<sup>SUB</sup>(ARG)
- \DSPACEH[sub][sup][arg] = DSPACE-HARD<sup>SUB</sup>(ARG)
- \DSPACEC[sub][sup][arg] = DSPACE-COMPLETE<sup>SUB</sup>(ARG)
- \NPSPACE[sub][sup][arg] = NPSPACE<sup>SUB</sup>(ARG)
- \NPSPACEE[sub][sup][arg] = NPSPACE-EASY<sup>SUB</sup>(ARG)
- \NPSPACEH[sub][sup][arg] = NPSPACE-HARD<sup>SUB</sup>(ARG)
- \NPSPACEC[sub][sup][arg] = NPSPACE-COMPLETE<sup>SUB</sup>(ARG)
- \UPSPACE[sub][sup][arg] = UPSPACE<sup>SUB</sup>(ARG)
- \UPSPACEE[sub][sup][arg] = UPSPACE-EASY<sup>SUB</sup>(ARG)
- \UPSPACEH[sub][sup][arg] = UPSPACE-HARD<sup>SUB</sup>(ARG)
- \UPSPACEC[sub][sup][arg] = UPSPACE-COMPLETE<sup>SUB</sup>(ARG)
- \APSPACE[sub][sup][arg] = APSPACE<sup>SUB</sup>(ARG)
- \APSPACEE[sub][sup][arg] = APSPACE-EASY<sup>SUB</sup>(ARG)
- \APSPACEH[sub][sup][arg] = APSPACE-HARD<sup>SUB</sup>(ARG)
- \APSPACEC[sub][sup][arg] = APSPACE-COMPLETE<sup>SUB</sup>(ARG)

```

\QPTIME
...
• \QPTIME[sub][sup][arg] = QPTIMESUB(ARG)
  \QPTIMEE[sub][sup][arg] = QPTIME-EASYSUB(ARG)
  \QPTIMEH[sub][sup][arg] = QPTIME-HARDSUB(ARG)
  \QPTIMEC[sub][sup][arg] = QPTIME-COMPLETESUB(ARG)
• \DQPTIME[sub][sup][arg] = DQPTIMESUB(ARG)
  \DQPTIMEE[sub][sup][arg] = DQPTIME-EASYSUB(ARG)
  \DQPTIMEH[sub][sup][arg] = DQPTIME-HARDSUB(ARG)
  \DQPTIMEC[sub][sup][arg] = DQPTIME-COMPLETESUB(ARG)
• \NQPTIME[sub][sup][arg] = NQPTIMESUB(ARG)
  \NQPTIMEE[sub][sup][arg] = NQPTIME-EASYSUB(ARG)
  \NQPTIMEH[sub][sup][arg] = NQPTIME-HARDSUB(ARG)
  \NQPTIMEC[sub][sup][arg] = NQPTIME-COMPLETESUB(ARG)
• \UQPTIME[sub][sup][arg] = UQPTIMESUB(ARG)
  \UQPTIMEE[sub][sup][arg] = UQPTIME-EASYSUB(ARG)
  \UQPTIMEH[sub][sup][arg] = UQPTIME-HARDSUB(ARG)
  \UQPTIMEC[sub][sup][arg] = UQPTIME-COMPLETESUB(ARG)
• \AQPTIME[sub][sup][arg] = AQPTIMESUB(ARG)
  \AQPTIMEE[sub][sup][arg] = AQPTIME-EASYSUB(ARG)
  \AQPTIMEH[sub][sup][arg] = AQPTIME-HARDSUB(ARG)
  \AQPTIMEC[sub][sup][arg] = AQPTIME-COMPLETESUB(ARG)

```

$$\begin{aligned} \backslash \text{QPSpace} & \bullet \backslash \text{QPSpace}[\text{sub}][\text{sup}][\text{arg}] = \text{QPSpace}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \dots \\ & \backslash \text{QPSpaceE}[\text{sub}][\text{sup}][\text{arg}] = \text{QPSpace-EASY}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{QPSpaceH}[\text{sub}][\text{sup}][\text{arg}] = \text{QPSpace-HARD}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{QPSpaceC}[\text{sub}][\text{sup}][\text{arg}] = \text{QPSpace-COMplete}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \bullet \backslash \text{DQPSpace}[\text{sub}][\text{sup}][\text{arg}] = \text{DQPSpace}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{DQPSpaceE}[\text{sub}][\text{sup}][\text{arg}] = \text{DQPSpace-EASY}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{DQPSpaceH}[\text{sub}][\text{sup}][\text{arg}] = \text{DQPSpace-HARD}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{DQPSpaceC}[\text{sub}][\text{sup}][\text{arg}] = \text{DQPSpace-COMplete}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \bullet \backslash \text{NQPSpace}[\text{sub}][\text{sup}][\text{arg}] = \text{NQPSpace}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{NQPSpaceE}[\text{sub}][\text{sup}][\text{arg}] = \text{NQPSpace-EASY}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{NQPSpaceH}[\text{sub}][\text{sup}][\text{arg}] = \text{NQPSpace-HARD}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{NQPSpaceC}[\text{sub}][\text{sup}][\text{arg}] = \text{NQPSpace-COMplete}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \bullet \backslash \text{UQPSpace}[\text{sub}][\text{sup}][\text{arg}] = \text{UQPSpace}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{UQPSpaceE}[\text{sub}][\text{sup}][\text{arg}] = \text{UQPSpace-EASY}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{UQPSpaceH}[\text{sub}][\text{sup}][\text{arg}] = \text{UQPSpace-HARD}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \\ & \backslash \text{UQPSpaceC}[\text{sub}][\text{sup}][\text{arg}] = \text{UQPSpace-COMplete}^{\text{SUP}}_{\text{SUB}}(\text{ARG}) \end{aligned}$$



```

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

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

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

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

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

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

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

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

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

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

1228 %** Semantics *****

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

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

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

```

```

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

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

```



```

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

\EvnSym ...
\OddSym 1336 \newcommand{\evnsym}{0}
1337 \cmdmthsym{Evns}[\evnsym]
1338 \newcommand{\oddsym}{1}
1339 \cmdmthsym{Odds}[\oddsym]

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

...

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

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

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

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

...

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

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

```

```

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

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

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

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

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

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

```

```

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

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

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

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

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

      1478 %%** Semantics *****%%

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

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

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

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

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

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

```

```

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

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

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

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

```

```

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

1551 %** Syntax *****%%

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

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

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

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

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

```

```

1603 \DeclareRobustCommand{\coWMCL}
1604   {\txtname{coW}\MCL}
1605
1606 % Path Logic
1607 \cmdtxttoparname{PL}
1608
1609 % Weak Path Logic
1610 \DeclareRobustCommand{\WPL}
1611   {\txtname{W}\PL}
1612
1613 % coWeak Path Logic
1614 \DeclareRobustCommand{\coWPL}
1615   {\txtname{coW}\PL}
1616
1617 % Monadic Path Logic
1618 \DeclareRobustCommand{\MPL}
1619   {\txtname{M}\PL}
1620
1621 % Weak Monadic Path Logic
1622 \DeclareRobustCommand{\WMPL}
1623   {\txtname{W}\MPL}
1624
1625 % coWeak Monadic Path Logic
1626 \DeclareRobustCommand{\coWMPL}
1627   {\txtname{coW}\MPL}
1628 %** Syntax *****%
...
1629 %** Semantics *****%
...
1630 %** Modal Logics I *****%

\ML ...
\GML 1631 % Modal Logic
... 1632 \cmdtxttoparname{ML}
1633
1634 % Graded Modal Logic
1635 \DeclareRobustCommand{\GML}
1636   {\txtname{G}\ML}
1637
1638 % Quantified Modal Logic
1639 \DeclareRobustCommand{\QML}
1640   {\txtname{Q}\ML}
1641 \DeclareRobustCommand{\EML}
1642   {\ensuremath{\exists}\ML}
1643 \DeclareRobustCommand{\UML}
1644   {\ensuremath{\forall}\ML}
1645 %** Syntax *****%

\Opr ...
1646 \usrmth{Opr}{\sym}[Op]

\DMod ...
\BMod 1647 \usrmth{DMod}{\sym}[\Diamond]
1648 \usrmth{BMod}{\sym}[\Box]

\Exs ...
\All 1649 \DeclareRobustCommand{\Exs}
1650   {\@ifstar{\@sexs}{\@exs}}
1651 \DeclareRobustCommand{\@sexs}[1]
1652   {\mth{DMod}[#1]}

```

```

1653 \DeclareRobustCommand{\@exs}[1]
1654   {\mth{\defval{\argmid{\langle}{#1}{\rangle}}{\DMod}}}
1655 \DeclareRobustCommand{\All}
1656   {\@ifstar{\@sall}{\@all}}
1657 \DeclareRobustCommand{\@sall}[1]
1658   {\mth{\BMod}[#1]}
1659 \DeclareRobustCommand{\@all}[1]
1660   {\mth{\defval{\argmid{\left[]}{#1}{\right]}}{\BMod}}}
1661 %** Semantics *****%

\KrpStr ...
... 1662 \newcommand{\krpstr}{K}
1663 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

\WrlSet ...
... 1664 \newcommand{\wrlsym}{w}
1665 \newcommand{\wrlset}{W}
1666 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1667 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

\AccRel ...
\TrnRel 1668 \newcommand{\accsym}{R}
1669 \cmdmthrel{Acc}[\accsym]
1670 \cmdmthrel{Trn}[\accsym]

\labFun ...
1671 \newcommand{\labsym}{\lambda}
1672 \cmdmthfun{lab}[\labsym]

\PthSet ...
... 1673 \providecommand{\pthsym}{\pi}
1674 \providecommand{\pthset}{Pth}
1675 \cmdmthsetext{Pth}[\pthset][\pthsym]
1676 \usrmth{path}{\}{argfun}
1677 %** Modal Logics II *****%

\MC ...
\GMC 1678 % Mu Calculus
... 1679 \cmdtxttoparname{MC}[\ensuremath{\mu}-Calculus]
1680
1681 % Graded Mu Calculus
1682 \DeclareRobustCommand{\GMC}
1683   {\{\txtname{G}\}\MC}
1684
1685 % Quantified Mu Calculus
1686 \DeclareRobustCommand{\QMC}
1687   {\{\txtname{Q}\}\MC}
1688 \DeclareRobustCommand{\EMC}
1689   {\ensuremath{\exists}\MC}
1690 \DeclareRobustCommand{\UMC}
1691   {\ensuremath{\forall}\MC}
1692
1693 % Alternation-Free Mu Calculus
1694 \DeclareRobustCommand{\AFMC}
1695   {\{\txtname{AF}\}\MC}
1696
1697 % Alternation-Free Graded Mu Calculus
1698 \DeclareRobustCommand{\AFGMC}
1699   {\{\txtname{AF}\}\GMC}
1700
1701 % Quantified Alternation-Free Mu Calculus
1702 \DeclareRobustCommand{\QAFMC}

```



```

1703   {\txtname{Q}}\AFMC}
1704 \DeclareRobustCommand{\EAFMC}
1705   {\ensuremath{\exists}\AFMC}
1706 \DeclareRobustCommand{\UAFMC}
1707   {\ensuremath{\forall}\AFMC}
1708
1709 %%** Syntax *****%%
...
1710 %%** Semantics *****%%
...
1711 %%** Temporal Logics I *****%%

\PTL ...
\LTL 1712 % Propositional Temporal Logic
... 1713 \cmdtxtopname{PTL}
1714
1715 % Quantified Propositional Temporal Logic
1716 \DeclareRobustCommand{\QPTL}
1717   {\txtname{Q}}\PTL}
1718 \DeclareRobustCommand{\EPTL}
1719   {\ensuremath{\exists}\PTL}
1720 \DeclareRobustCommand{\UPTL}
1721   {\ensuremath{\forall}\PTL}
1722
1723 % Linear Temporal Logic
1724 \cmdtxtopname{LTL}
1725
1726 % Quantified Linear Temporal Logic
1727 \DeclareRobustCommand{\QLTL}
1728   {\txtname{Q}}\LTL}
1729 \DeclareRobustCommand{\ELTL}
1730   {\ensuremath{\exists}\LTL}
1731 \DeclareRobustCommand{\ULTL}
1732   {\ensuremath{\forall}\LTL}
1733 %%** Syntax *****%%

\X ...
... 1734 \usrmth{X}{-}{sym}[X\,,]
1735 \usrmth{F}{-}{sym}[F\,,]
1736 \usrmth{G}{-}{sym}[G\,,]
1737 \usrmth{U}{-}{sym}[\,,U\,,]
1738 \usrmth{R}{-}{sym}[\,,R\,,]

\Y ...
... 1739 \usrmth{Y}{-}{sym}[G\,,]
1740 \usrmth{P}{-}{sym}[P\,,]\let\SavePildcrow\P
1741 \usrmth{H}{-}{sym}[H\,,]\let\SaveDoubleAcute\H
1742 \usrmth{S}{-}{sym}[\,,S\,,]\let\SaveSectionSymbol\S
1743 \usrmth{B}{-}{sym}[\,,B\,,]
1744 %%** Semantics *****%%
...
1745 %%** Temporal Logics II *****%%

\PDL ...
\CTL 1746 % Propositional Dynamic Logic
... 1747 \cmdtxtopname{PDL}
1748
1749 % Computation Tree Logic
1750 \cmdtxtopname{CTL}

```

```

1751
1752 % Weak Computation Tree Logic
1753 \DeclareRobustCommand{\WCTL}
1754   {\textname{W}}\CTL}
1755
1756 % Quantified Computation Tree Logic
1757 \DeclareRobustCommand{\QCTL}
1758   {\textname{Q}}\CTL}
1759 \DeclareRobustCommand{\ECTL}
1760   {\ensuremath{\exists}\CTL}
1761 \DeclareRobustCommand{\UCTL}
1762   {\ensuremath{\forall}\CTL}
1763
1764 % Improved Computation Tree Logic
1765 \cmdtxtopname{CTLP}[CTL$^{+}$]
1766
1767 % Weak Improved Computation Tree Logic
1768 \DeclareRobustCommand{\WCTLP}
1769   {\textname{W}}\CTLP}
1770
1771 % Quantified Improved Computation Tree Logic
1772 \DeclareRobustCommand{\QCTLP}
1773   {\textname{Q}}\CTLP}
1774 \DeclareRobustCommand{\ECTLP}
1775   {\ensuremath{\exists}\CTLP}
1776 \DeclareRobustCommand{\UCTLP}
1777   {\ensuremath{\forall}\CTLP}
1778
1779 % Full Computation Tree Logic
1780 \cmdtxtopname{CTLS}[CTL*]
1781
1782 % Weak Full Computation Tree Logic
1783 \DeclareRobustCommand{\WCTLS}
1784   {\textname{W}}\CTLS}
1785
1786 % Quantified Full Computation Tree Logic
1787 \DeclareRobustCommand{\QCTLS}
1788   {\textname{Q}}\CTLS}
1789 \DeclareRobustCommand{\ECTLS}
1790   {\ensuremath{\exists}\CTLS}
1791 \DeclareRobustCommand{\UCTLS}
1792   {\ensuremath{\forall}\CTLS}
1793 %** Syntax *****%

\E ...
\A 1794 \usrnth{E}{\sym}
    1795 \usrnth{A}{\sym}
    1796 %** Semantics *****%
    ...
    1797 %** Game Logics I *****%

\ATL ...
... 1798 % Alternating Temporal Logic
    1799 \cmdtxtopname{ATL}
    1800
    1801 % Weak Alternating Tree Logic
    1802 \DeclareRobustCommand{\WATL}
    1803   {\textname{W}}\ATL}
    1804
    1805 % Quantified Alternating Temporal Logic
    1806 \DeclareRobustCommand{\QATL}
    1807   {\textname{Q}}\ATL}

```

```

1808 \DeclareRobustCommand{\EATL}
1809   {\ensuremath{\exists}\ATL}
1810 \DeclareRobustCommand{\UATL}
1811   {\ensuremath{\forall}\ATL}
1812
1813 % Improved Alternating Temporal Logic
1814 \cmdtxtopname{ATLP}[ATL$^{+}$]
1815
1816 % Weak Improved Alternating Tree Logic
1817 \DeclareRobustCommand{\WATLP}
1818   {\{\textname{W}\}\ATLP}
1819
1820 % Quantified Improved Alternating Temporal Logic
1821 \DeclareRobustCommand{\QATLP}
1822   {\{\textname{Q}\}\ATLP}
1823 \DeclareRobustCommand{\EATLP}
1824   {\ensuremath{\exists}\ATLP}
1825 \DeclareRobustCommand{\UATLP}
1826   {\ensuremath{\forall}\ATLP}
1827
1828 % Full Alternating Temporal Logic
1829 \cmdtxtopname{ATLS}[ATL*]
1830
1831 % Weak Full Alternating Tree Logic
1832 \DeclareRobustCommand{\WATLS}
1833   {\{\textname{W}\}\ATLS}
1834
1835 % Quantified Full Alternating Temporal Logic
1836 \DeclareRobustCommand{\QATLS}
1837   {\{\textname{Q}\}\ATLS}
1838 \DeclareRobustCommand{\EATLS}
1839   {\ensuremath{\exists}\ATLS}
1840 \DeclareRobustCommand{\UATLS}
1841   {\ensuremath{\forall}\ATLS}
1842 %** Syntax *****%

```

\EExs ...

```

\AA11 1843 \DeclareRobustCommand{\EExs}[1]
1844   {\mth{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}
1845 \DeclareRobustCommand{\AA11}[1]
1846   {\mth{\argmid{\left[\left[]{\defval{#1}{\emptyset}}{\right]\right]}}}
1847 %** Semantics *****%

```

\CGS ...

```

1848 \cmdtxtname{CGS}

```

\CGSStr ...

```

... 1849 \newcommand{\cgsstr}{G}
1850 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

```

\AgnSet ...

```

... 1851 \newcommand{\agnsym}{a}
1852 \newcommand{\agnset}{Ag}
1853 \cmdmthsetext{Agn}[\agnset][\agnsym]

```

\ActSet ...

```

... 1854 \newcommand{\actsym}{c}
1855 \newcommand{\actset}{Ac}
1856 \cmdmthsetext{Act}[\actset][\actsym]

```

\PosSet ...

```

... 1857 \providecommand{\possym}{v}

```

```

1858 \providecommand{\posset}{Ps}
1859 \cmdmthsettext{Pos}[\posset][\possym]
1860 \cmdmthsymelm{ipos}[\possym_{I}]
1861 \cmdmthsymelm{fpos}[\possym_{F}]
1862 \cmdmthset{PPos}[\posset_{\PlrSym}]
1863 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1864 \cmdmthset{OPos}[\posset_{\OppSym}]
1865 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\SttSet ...
... 1866 \newcommand{\sttsym}{s}
1867 \newcommand{\sttset}{St}
1868 \cmdmthsettext{Stt}[\sttset][\sttsym]
1869 \cmdmthset{IStt}[\sttset_{I}]
1870 \cmdmthsymelm{istt}[\sttsym_{I}]
1871 \cmdmthset{FStt}[\sttset_{F}]
1872 \cmdmthsymelm{fstt}[\sttsym_{F}]

\DecSet ...
... 1873 \newcommand{\decsym}{d}
1874 \newcommand{\decset}{Dc}
1875 \cmdmthsettext{Dec}[\decset][\decsym]

\movFun ...
\movRel 1876 \newcommand{\movsym}{\tau}
1877 \cmdmthfun{mov}[\movsym]
1878 \cmdmthrel{mov}[\movsym]

\trnFun ...
\trnRel 1879 \newcommand{\trnsym}{\delta}
1880 \cmdmthfun{trn}[\trnsym]
1881 \cmdmthrel{trn}[\trnsym]

\PrfSet ...
1882 \providecommand{\prfsym}{\xi}
1883 \providecommand{\prfset}{Prf}
1884 \cmdmthsettext{Prf}[\prfset][\prfsym]

\HstSet ...
... 1885 \providecommand{\hstsym}{\varpi}
1886 \providecommand{\hstset}{Hst}
1887 \cmdmthsettext{Hst}[\hstset][\hstsym]
1888 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1889 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1890 \cmdmthset{OHst}[\hstset_{\OppSym}]
1891 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1892 \usrmth{hst}{\argfun}

\PlaySet ...
... 1893 \providecommand{\playsym}{\pi}
1894 \providecommand{\playset}{Play}
1895 \cmdmthsettext{Play}[\playset][\playsym]
1896 \usrmth{play}{\argfun}

\PlnSet ...
... 1897 \providecommand{\plnsym}{\rho}
1898 \providecommand{\plnset}{Pln}
1899 \cmdmthsettext{Pln}[\plnset][\plnsym]
1900 \cmdmthset{PPln}[\plnset_{\PlrSym}]
1901 \cmdmthsymelm{pPln}[\plnsym_{\PlrSym}]
1902 \cmdmthset{OPln}[\plnset_{\OppSym}]
1903 \cmdmthsymelm{oPln}[\plnsym_{\OppSym}]

```

```

\StrSet ...
... 1904 \providecommand{\strsym}{\sigma}
     1905 \providecommand{\strset}{\Str}
     1906 \cmdmthsetext{\Str}[\strset][\strsym]
     1907 \cmdmthset{PStr}[\strset_{\PlrSym}]
     1908 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
     1909 \cmdmthset{OStr}[\strset_{\OppSym}]
     1910 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

     1911 %** Game Logics II *****%%

\PL ...
... 1912 % Plan Logic
     1913 \cmdtxttoparname{\PL}
     1914
     1915 \DeclareRobustCommand{\EPL}
     1916   {\ensuremath{\exists}\PL}
     1917 \DeclareRobustCommand{\UPL}
     1918   {\ensuremath{\forall}\PL}
     1919
     1920 \DeclareRobustCommand{\FPL}
     1921   {\{\textname{F}\}\PL}
     1922
     1923 \DeclareRobustCommand{\EFPL}
     1924   {\ensuremath{\exists}\FPL}
     1925 \DeclareRobustCommand{\UFPL}
     1926   {\ensuremath{\forall}\FPL}
     1927
     1928 % One-Goal Plan Logic
     1929 \DeclareRobustCommandx{\OGPL}[3][1=, 2=, 3=]
     1930   {\PL[#1][#2][1g\arglef{,}{#3}]}
     1931
     1932 \DeclareRobustCommand{\EOGPL}
     1933   {\ensuremath{\exists}\OGPL}
     1934 \DeclareRobustCommand{\UOGPL}
     1935   {\ensuremath{\forall}\OGPL}
     1936
     1937 \DeclareRobustCommand{\FOGPL}
     1938   {\{\textname{F}\}\OGPL}
     1939
     1940 \DeclareRobustCommand{\EFOGPL}
     1941   {\ensuremath{\exists}\FOGPL}
     1942 \DeclareRobustCommand{\UFOGPL}
     1943   {\ensuremath{\forall}\FOGPL}
     1944
     1945 % Conjunctive-Goal Plan Logic
     1946 \DeclareRobustCommandx{\CGPL}[3][1=, 2=, 3=]
     1947   {\PL[#1][#2][cg\arglef{,}{#3}]}
     1948
     1949 \DeclareRobustCommand{\ECGPL}
     1950   {\ensuremath{\exists}\CGPL}
     1951 \DeclareRobustCommand{\UCGPL}
     1952   {\ensuremath{\forall}\CGPL}
     1953
     1954 \DeclareRobustCommand{\FCGPL}
     1955   {\{\textname{F}\}\CGPL}
     1956
     1957 \DeclareRobustCommand{\EFCGPL}
     1958   {\ensuremath{\exists}\FCGPL}
     1959 \DeclareRobustCommand{\UFCGPL}
     1960   {\ensuremath{\forall}\FCGPL}
     1961
     1962 % Disjunctive-Goal Plan Logic
     1963 \DeclareRobustCommandx{\DGPL}[3][1=, 2=, 3=]

```

```

1964 {\PL[#1][#2][dg\argleft{,}{#3}]}
1965
1966 \DeclareRobustCommand{\EDGPL}
1967 {\ensuremath{\exists}\DGPL}
1968 \DeclareRobustCommand{\UDGPL}
1969 {\ensuremath{\forall}\DGPL}
1970
1971 \DeclareRobustCommand{\FDGPL}
1972 {\{\textname{F}\}\DGPL}
1973
1974 \DeclareRobustCommand{\EFDGPL}
1975 {\ensuremath{\exists}\FDGPL}
1976 \DeclareRobustCommand{\UFDGPL}
1977 {\ensuremath{\forall}\FDGPL}
1978
1979 % Alternating-Goal Plan Logic
1980 \DeclareRobustCommandx{\AGPL}[3][1=, 2=, 3=]
1981 {\PL[#1][#2][ag\argleft{,}{#3}]}
1982
1983 \DeclareRobustCommand{\EAGPL}
1984 {\ensuremath{\exists}\AGPL}
1985 \DeclareRobustCommand{\UAGPL}
1986 {\ensuremath{\forall}\AGPL}
1987
1988 \DeclareRobustCommand{\FAGPL}
1989 {\{\textname{F}\}\AGPL}
1990
1991 \DeclareRobustCommand{\EFAGPL}
1992 {\ensuremath{\exists}\FAGPL}
1993 \DeclareRobustCommand{\UFAGPL}
1994 {\ensuremath{\forall}\FAGPL}
1995
1996 % Extended-Goal Plan Logic
1997 \DeclareRobustCommandx{\EGPL}[3][1=, 2=, 3=]
1998 {\PL[#1][#2][eg\argleft{,}{#3}]}
1999
2000 \DeclareRobustCommand{\EEGPL}
2001 {\ensuremath{\exists}\EGPL}
2002 \DeclareRobustCommand{\UEGPL}
2003 {\ensuremath{\forall}\EGPL}
2004
2005 \DeclareRobustCommand{\FEGPL}
2006 {\{\textname{F}\}\EGPL}
2007
2008 \DeclareRobustCommand{\EFEGPL}
2009 {\ensuremath{\exists}\FEGPL}
2010 \DeclareRobustCommand{\UFEGPL}
2011 {\ensuremath{\forall}\FEGPL}
2012
2013 % Boolean-Goal Plan Logic
2014 \DeclareRobustCommandx{\BGPL}[3][1=, 2=, 3=]
2015 {\PL[#1][#2][bg\argleft{,}{#3}]}
2016
2017 \DeclareRobustCommand{\EBGPL}
2018 {\ensuremath{\exists}\BGPL}
2019 \DeclareRobustCommand{\UBGPL}
2020 {\ensuremath{\forall}\BGPL}
2021
2022 \DeclareRobustCommand{\FBGPL}
2023 {\{\textname{F}\}\BGPL}
2024
2025 \DeclareRobustCommand{\EFBGPL}
2026 {\ensuremath{\exists}\FBGPL}

```

```

2027 \DeclareRobustCommand{\UFBGPL}
2028   {\ensuremath{\forall}\text{FBGPL}}
2029
2030 % Undefined-Goal Plan Logic
2031 \DeclareRobustCommandx{\XGPL}[3][1=, 2=, 3=]
2032   {\PL[#1][#2][xg\argleft{,}{#3}]}
2033
2034 \DeclareRobustCommand{\EXGPL}
2035   {\ensuremath{\exists}\text{XGPL}}
2036 \DeclareRobustCommand{\UXGPL}
2037   {\ensuremath{\forall}\text{XGPL}}
2038
2039 \DeclareRobustCommand{\FXGPL}
2040   {\{\textname{F}\}\text{XGPL}}
2041
2042 \DeclareRobustCommand{\EFXGPL}
2043   {\ensuremath{\exists}\text{FXGPL}}
2044 \DeclareRobustCommand{\UFXGPL}
2045   {\ensuremath{\forall}\text{FXGPL}}
2046
\SL ...
... 2046 % Strategy Logic
2047 \cmdtxttopname{SL}
2048
2049 \DeclareRobustCommand{\ESL}
2050   {\ensuremath{\exists}\text{SL}}
2051 \DeclareRobustCommand{\USL}
2052   {\ensuremath{\forall}\text{SL}}
2053
2054 \DeclareRobustCommand{\FSL}
2055   {\{\textname{F}\}\text{SL}}
2056
2057 \DeclareRobustCommand{\EFSL}
2058   {\ensuremath{\exists}\text{FSL}}
2059 \DeclareRobustCommand{\UFSL}
2060   {\ensuremath{\forall}\text{FSL}}
2061
2062 % One-Goal Strategy Logic
2063 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
2064   {\SL[#1][#2][lg\argleft{,}{#3}]}
2065
2066 \DeclareRobustCommand{\EOGSL}
2067   {\ensuremath{\exists}\text{OGSL}}
2068 \DeclareRobustCommand{\UOGSL}
2069   {\ensuremath{\forall}\text{OGSL}}
2070
2071 \DeclareRobustCommand{\FOGSL}
2072   {\{\textname{F}\}\text{OGSL}}
2073
2074 \DeclareRobustCommand{\EFOGSL}
2075   {\ensuremath{\exists}\text{FOGSL}}
2076 \DeclareRobustCommand{\UFOGSL}
2077   {\ensuremath{\forall}\text{FOGSL}}
2078
2079 % Conjunctive-Goal Strategy Logic
2080 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
2081   {\SL[#1][#2][cg\argleft{,}{#3}]}
2082
2083 \DeclareRobustCommand{\ECGSL}
2084   {\ensuremath{\exists}\text{CGSL}}
2085 \DeclareRobustCommand{\UCGSL}
2086   {\ensuremath{\forall}\text{CGSL}}
2087
2088 \DeclareRobustCommand{\FCGSL}

```

```

2089  {{\txtname{F}}\CGSL}
2090
2091 \DeclareRobustCommand{\EFCGSL}
2092  {\ensuremath{\exists}\FCGSL}
2093 \DeclareRobustCommand{\UFCGSL}
2094  {\ensuremath{\forall}\FCGSL}
2095
2096 % Disjunctive-Goal Strategy Logic
2097 \DeclareRobustCommandx{\DGSL}[3][1=, 2=, 3=]
2098  {\SL[#1][#2][dg\arglef{,}{#3}]}
2099
2100 \DeclareRobustCommand{\EDGSL}
2101  {\ensuremath{\exists}\DGSL}
2102 \DeclareRobustCommand{\UDGSL}
2103  {\ensuremath{\forall}\DGSL}
2104
2105 \DeclareRobustCommand{\FDGSL}
2106  {{\txtname{F}}\DGSL}
2107
2108 \DeclareRobustCommand{\EFDGSL}
2109  {\ensuremath{\exists}\FDGSL}
2110 \DeclareRobustCommand{\UFDGSL}
2111  {\ensuremath{\forall}\FDGSL}
2112
2113 % Alternating-Goal Strategy Logic
2114 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
2115  {\SL[#1][#2][ag\arglef{,}{#3}]}
2116
2117 \DeclareRobustCommand{\EAGSL}
2118  {\ensuremath{\exists}\AGSL}
2119 \DeclareRobustCommand{\UAGSL}
2120  {\ensuremath{\forall}\AGSL}
2121
2122 \DeclareRobustCommand{\FAGSL}
2123  {{\txtname{F}}\AGSL}
2124
2125 \DeclareRobustCommand{\EFAGSL}
2126  {\ensuremath{\exists}\FAGSL}
2127 \DeclareRobustCommand{\UFAGSL}
2128  {\ensuremath{\forall}\FAGSL}
2129
2130 % Extended-Goal Strategy Logic
2131 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
2132  {\SL[#1][#2][eg\arglef{,}{#3}]}
2133
2134 \DeclareRobustCommand{\EEGSL}
2135  {\ensuremath{\exists}\EGSL}
2136 \DeclareRobustCommand{\UEGSL}
2137  {\ensuremath{\forall}\EGSL}
2138
2139 \DeclareRobustCommand{\FEGSL}
2140  {{\txtname{F}}\EGSL}
2141
2142 \DeclareRobustCommand{\EFEGSL}
2143  {\ensuremath{\exists}\FEGSL}
2144 \DeclareRobustCommand{\UFEGSL}
2145  {\ensuremath{\forall}\FEGSL}
2146
2147 % Boolean-Goal Strategy Logic
2148 \DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
2149  {\SL[#1][#2][bg\arglef{,}{#3}]}
2150
2151 \DeclareRobustCommand{\EBGSL}

```



```

2152 {\ensuremath{\exists}\BGS}
2153 \DeclareRobustCommand{\UBGS}
2154 {\ensuremath{\forall}\BGS}
2155
2156 \DeclareRobustCommand{\FBGS}
2157 {\{\textname{F}\}\BGS}
2158
2159 \DeclareRobustCommand{\EFBGS}
2160 {\ensuremath{\exists}\FBGS}
2161 \DeclareRobustCommand{\UFBGS}
2162 {\ensuremath{\forall}\FBGS}
2163
2164 % Nested-Goal Strategy Logic
2165 \DeclareRobustCommandx{\NGS}[3][1=, 2=, 3=]
2166 {\SL[#1][#2][ng\arglef{,}{#3}]}
2167
2168 \DeclareRobustCommand{\ENGSL}
2169 {\ensuremath{\exists}\NGSL}
2170 \DeclareRobustCommand{\UNGSL}
2171 {\ensuremath{\forall}\NGSL}
2172
2173 \DeclareRobustCommand{\FNGSL}
2174 {\{\textname{F}\}\NGSL}
2175
2176 \DeclareRobustCommand{\EFNGSL}
2177 {\ensuremath{\exists}\FNGSL}
2178 \DeclareRobustCommand{\UFNGSL}
2179 {\ensuremath{\forall}\FNGSL}
2180
2181 % Undefined-Goal Strategy Logic
2182 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
2183 {\SL[#1][#2][xg\arglef{,}{#3}]}
2184
2185 \DeclareRobustCommand{\EXGSL}
2186 {\ensuremath{\exists}\XGSL}
2187 \DeclareRobustCommand{\UXGSL}
2188 {\ensuremath{\forall}\XGSL}
2189
2190 \DeclareRobustCommand{\FXGSL}
2191 {\{\textname{F}\}\XGSL}
2192
2193 \DeclareRobustCommand{\EFXGSL}
2194 {\ensuremath{\exists}\FXGSL}
2195 \DeclareRobustCommand{\UFXGSL}
2196 {\ensuremath{\forall}\FXGSL}
2197 %** Syntax *****%

```

\BndSet ...

```

... 2198 \newcommand{\bndsym}{\flat}
2199 \newcommand{\bndset}{\Bn}
2200 \cmdmthsetext{Bnd}[\bndset][\bndsym]
2201 \cmdmthsymelm{idbnd}[\bndsym_{\text{id}}]
2202 \usrmth{bnd}{\argfun}

```

\psn ...

```

2203 \usrmth{psn}{\argfun}

2204 %** Semantics *****%

```

\nxt ...

```

2205 \usrmth{nxt}{\argfun}

2206 \fi
2207 %*****%

```

```

2208 %*****%
2209 %** Macros for Automata *****%
2210 %*****%
2211 \ifaut@
2212 %** Finite Word Automata *****%

\DFA ...
... 2213 \cmdtxtoparname{DFA}\cmdtxtoparname{NFA}\cmdtxtoparname{UFA}\cmdtxtoparname{AFA}
2214
2215 \cmdtxtoparname{DWA}\cmdtxtoparname{NWA}\cmdtxtoparname{UWA}\cmdtxtoparname{AWA}
2216
2217 \cmdtxtoparname{DFW}\cmdtxtoparname{NFW}\cmdtxtoparname{UFW}\cmdtxtoparname{AFW}
2218 \cmdtxtoparname{DWW}\cmdtxtoparname{NWW}\cmdtxtoparname{UWW}\cmdtxtoparname{AWW}
2219 \cmdtxtoparname{DBW}\cmdtxtoparname{NBW}\cmdtxtoparname{UBW}\cmdtxtoparname{ABW}
2220 \cmdtxtoparname{DCW}\cmdtxtoparname{NCW}\cmdtxtoparname{UCW}\cmdtxtoparname{ACW}
2221 \cmdtxtoparname{DPW}\cmdtxtoparname{NPW}\cmdtxtoparname{UPW}\cmdtxtoparname{APW}
2222 \cmdtxtoparname{DRW}\cmdtxtoparname{NRW}\cmdtxtoparname{URW}\cmdtxtoparname{ARW}
2223 \cmdtxtoparname{DSW}\cmdtxtoparname{NSW}\cmdtxtoparname{USW}\cmdtxtoparname{ASW}
2224 \cmdtxtoparname{DMW}\cmdtxtoparname{NMW}\cmdtxtoparname{UMW}\cmdtxtoparname{AMW}

\GFG ...
... 2225 \cmdtxtoparname{GFG}
2226
2227 \cmdtxtoparname{PD}
2228 \cmdtxtoparname{PN}
2229
2230 \cmdtxtoparname{LD}
2231 \cmdtxtoparname{LN}
2232 %** Syntax *****%

\AutName ...
... 2233 \newcommand{\autname}{A}
2234 \usrnhtlatupp{Aut}{Name}{name}[\autname]
2235 \newcommand{\autset}{Aut}
2236 \cmdmthset{Aut}[\autset]

\WAutSet ...
2237 \newcommand{\wautset}{WAut}
2238 \cmdmthset{WAut}[\wautset]

\SymSet ...
... 2239 \newcommand{\symsym}{\sigma}
2240 \newcommand{\symset}{\Sigma}
2241 \cmdmthsetext{Sym}[\symset][\symsym]

\SttSet ...
... 2242 \providecommand{\sttsym}{q}
2243 \providecommand{\sttset}{Q}
2244 \cmdmthsetext{Stt}[\sttset][\sttsym]
2245 \cmdmthset{IStt}[\sttset_I]
2246 \cmdmthsymelm{istt}[\sttsym_I]
2247 \cmdmthset{FStt}[\sttset_F]
2248 \cmdmthsymelm{fstt}[\sttsym_F]

\trnFun ...
\trnRel 2249 \providecommand{\trnsym}{\delta}
2250 \cmdmthfun{trn}[\trnsym]
2251 \cmdmthrel{trn}[\trnsym]
2252 %** Semantics *****%

```

```

\WrdSet ...
... 2253 \newcommand{\wrdsym}{w}
      2254 \newcommand{\wrdsym}{w}
      2255 \cmdmthsetext{Wrd}{\wrdsym} [\wrdsym]

\Lang ...
      2256 \usrmth{Lang}{-}{argfun} [L]

      2257 %** Finite Tree Automata *****%

\DTA ...
... 2258 \cmdtxtoparname{DTA}\cmdtxtoparname{NTA}\cmdtxtoparname{UTA}\cmdtxtoparname{ATA}
      2259
      2260 \cmdtxtoparname{DFT}\cmdtxtoparname{NFT}\cmdtxtoparname{UFT}\cmdtxtoparname{AFT}
      2261 \cmdtxtoparname{DWT}\cmdtxtoparname{NWT}\cmdtxtoparname{UWT}\cmdtxtoparname{AWT}
      2262 \cmdtxtoparname{DBT}\cmdtxtoparname{NBT}\cmdtxtoparname{UBT}\cmdtxtoparname{ABT}
      2263 \cmdtxtoparname{DCT}\cmdtxtoparname{NCT}\cmdtxtoparname{UCT}\cmdtxtoparname{ACT}
      2264 \cmdtxtoparname{DPT}\cmdtxtoparname{NPT}\cmdtxtoparname{UPT}\cmdtxtoparname{APT}
      2265 \cmdtxtoparname{DRT}\cmdtxtoparname{NRT}\cmdtxtoparname{URT}\cmdtxtoparname{ART}
      2266 \cmdtxtoparname{DST}\cmdtxtoparname{NST}\cmdtxtoparname{UST}\cmdtxtoparname{AST}
      2267 \cmdtxtoparname{DMT}\cmdtxtoparname{NMT}\cmdtxtoparname{UMT}\cmdtxtoparname{AMT}
      2268 %** Syntax *****%

\TAutSet ...
      2269 \newcommand{\tautset}{TAut}
      2270 \cmdmthset{TAut}{\tautset}

\DirSet ...
... 2271 \newcommand{\dirsym}{d}
      2272 \newcommand{\dirset}{\Lambda}
      2273 \cmdmthsetext{Dir}{\dirset} [\dirsym]

      2274 %** Semantics *****%

\TreeSet ...
... 2275 \newcommand{\treesym}{T}
      2276 \newcommand{\treeset}{Tr}
      2277 \cmdmthsetext{Tree}{\treeset} [\treesym]

\wot ...
      2278 \usrmth{wot}{-}{argfun}

      2279 \fi
      2280 %*****%

      2281 %*****%
      2282 %** Format Tricks *****%
      2283 %*****%
      2284 \iffirm@

... ..
      2285 %...

      2286 \fi
      2287 %*****%

      2288 %*****%
      2289 %** Figure Tricks *****%
      2290 %*****%
      2291 \iffig@

      2292 \RequirePackage{tikz}
      2293 \usetikzlibrary{arrows,shapes,patterns,graphs,matrix}

```

```

2294 \tikzstyle{every node} =
2295   [draw = none, fill = none, black, thin]
2296 \tikzstyle{every edge} +=
2297   [black, thick]

2298 \tikzstyle{noall} =
2299   [draw = none, fill = none]
2300 \tikzstyle{nodraw} =
2301   [draw = none, fill = white]
2302 \tikzstyle{nofill} =
2303   [draw = black, fill = none]

2304 \ifwrpfig@
2305   % Wrapfig Package
2306   \RequirePackage{wrapfig}
2307 \fi

2308 \fi
2309 %%*****%

2310 %%*****%
2311 %%** Table Tricks *****%
2312 %%*****%
2313 \iftab@

... ..

2314 %%...

2315 \fi
2316 %%*****%

2317 %%*****%
2318 %%** Algorithm Tricks *****%
2319 %%*****%
2320 \ifalg@

2321 \RequirePackage[ruled,vlined]{algorithm2e}
2322 \DontPrintSemicolon
2323 \SetInd{0.25em}{0.5em}
2324 \setlength{\algomargin}{1.25em}

\Signature ...
2325 \SetKw{Signature}{signature}

\Macro ...
... 2326 \SetKwFor{Macro}{macro}{}{}
2327 \SetKwFor{Function}{function}{}{}
2328 \SetKwFor{Procedure}{procedure}{}{}

\Let ...
2329 \SetKwFor{Let}{let}{in}{}

\True ...
\False 2330 \SetKw{True}{true}
2331 \SetKw{False}{false}

\From ...
... 2332 \SetKw{From}{from}
2333 \SetKw{To}{to}
2334 \SetKw{DownTo}{downto}

\GoTo ...
... 2335 \SetKw{GoTo}{goto}
2336 \SetKw{Break}{break}
2337 \SetKw{Continue}{continue}

```

```

\Guess ...
... 2338 \SetKw{Guess}{guess}
      2339 \SetKw{ExsGuess}{$\exists$-guess}
      2340 \SetKw{AllGuess}{$\forall$-guess}

\MIf ...
... 2341 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

\nlr ...
      2342 \DeclareRobustCommand{\nlr}[1]
      2343   {\addtocounter{AlgoLine}{1}%
      2344    \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

      2345 \fi
      2346 %%*****%

      2347 \endinput
      2348 \</package>

```

## 2 Change History

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

## 3 Index

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| \Box              | 1648                                                                                                                                                                                                                                                                                       |  |
| \boxminus         | 1357                                                                                                                                                                                                                                                                                       |  |
| \bst              | 1135                                                                                                                                                                                                                                                                                       |  |
| <b>C</b>          |                                                                                                                                                                                                                                                                                            |  |
| \card             | 1013                                                                                                                                                                                                                                                                                       |  |
| \caselower        | 669                                                                                                                                                                                                                                                                                        |  |
| \cdot             | 1020                                                                                                                                                                                                                                                                                       |  |
| \ceil             | 1119                                                                                                                                                                                                                                                                                       |  |
| \cequiv           | 911                                                                                                                                                                                                                                                                                        |  |
| \cf               | 821                                                                                                                                                                                                                                                                                        |  |
| \CGPL             | 1946, 1950, 1952, 1955                                                                                                                                                                                                                                                                     |  |
| \CGS              | 1848                                                                                                                                                                                                                                                                                       |  |
| \CGSL             | 2080, 2084, 2086, 2089                                                                                                                                                                                                                                                                     |  |
| \CGSStr           | 1849                                                                                                                                                                                                                                                                                       |  |
| \cgsstr           | 1849, 1850                                                                                                                                                                                                                                                                                 |  |
| \chgbar@false     | 44                                                                                                                                                                                                                                                                                         |  |
| \chgbar@true      | 45                                                                                                                                                                                                                                                                                         |  |
| \chi              | 1431                                                                                                                                                                                                                                                                                       |  |
| \circ             | 1036                                                                                                                                                                                                                                                                                       |  |
| \CL               | 1560                                                                                                                                                                                                                                                                                       |  |
| \cmdmth           | 488, 504, 744, 745, 751                                                                                                                                                                                                                                                                    |  |
| \cmdmthall        | 503, 591, 604, 617, 630, 643, 656, 675, 688, 701, 714, 756, 769, 783, 796                                                                                                                                                                                                                  |  |
| \cmdmtharg        | 491, 504                                                                                                                                                                                                                                                                                   |  |
| \cmdmthargcls     | 621                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargelm     | 718, 732                                                                                                                                                                                                                                                                                   |  |
| \cmdmthargfam     | 608                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargfrm     | 773                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargfun     | 692                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargmat     | 787                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargname    | 595                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargrel     | 679                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargset     | 660                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargsig     | 634                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargsnt     | 760                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargstr     | 647                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargsym     | 705, 731                                                                                                                                                                                                                                                                                   |  |
| \cmdmthargsymelm  | 730                                                                                                                                                                                                                                                                                        |  |
| \cmdmthargvec     | 800                                                                                                                                                                                                                                                                                        |  |
| \cmdmthcls        | 619                                                                                                                                                                                                                                                                                        |  |
| \cmdmthelm        | 716, 729                                                                                                                                                                                                                                                                                   |  |
| \cmdmthfam        | 606                                                                                                                                                                                                                                                                                        |  |
| \cmdmthfrm        | 771                                                                                                                                                                                                                                                                                        |  |
| \cmdmthfun        | 690, 1276, 1285, 1343, 1362, 1672, 1877, 1880, 2250                                                                                                                                                                                                                                        |  |
| \cmdmthlbop       | 748                                                                                                                                                                                                                                                                                        |  |
| \cmdmthlrel       | 752                                                                                                                                                                                                                                                                                        |  |
| \cmdmthluop       | 746                                                                                                                                                                                                                                                                                        |  |
| \cmdmthmat        | 785                                                                                                                                                                                                                                                                                        |  |
| \cmdmthname       | 593                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoarg       | 494, 504                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoargcls    | 623                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargelm    | 720, 735                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoargfam    | 610                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargfrm    | 775                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargfun    | 694                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargmat    | 789                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargname   | 597                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargrel    | 681                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargset    | 662                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargsig    | 636                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargsnt    | 762                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargstr    | 649                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargsym    | 707, 734                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoargsymelm | 733                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoargvec    | 802                                                                                                                                                                                                                                                                                        |  |
| \cmdmthopar       | 500, 504                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoparcls    | 627                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparelm    | 724, 741                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoparfam    | 614                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparfrm    | 779                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparfun    | 698                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparmat    | 793                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparname   | 601                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparrel    | 685                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparset    | 666                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparsig    | 640                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparsnt    | 766                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparstr    | 653                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparsym    | 711, 740                                                                                                                                                                                                                                                                                   |  |
| \cmdmthoparsymelm | 739                                                                                                                                                                                                                                                                                        |  |
| \cmdmthoparvec    | 806                                                                                                                                                                                                                                                                                        |  |
| \cmdmthpar        | 497, 504                                                                                                                                                                                                                                                                                   |  |
| \cmdmthparcls     | 625                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparelm     | 722, 738                                                                                                                                                                                                                                                                                   |  |
| \cmdmthparfam     | 612                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparfrm     | 777                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparfun     | 696                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparmat     | 791                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparname    | 599                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparrel     | 683                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparset     | 664                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparsig     | 638                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparsnt     | 764                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparstr     | 651                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparsym     | 709, 737                                                                                                                                                                                                                                                                                   |  |
| \cmdmthparsymelm  | 736                                                                                                                                                                                                                                                                                        |  |
| \cmdmthparvec     | 804                                                                                                                                                                                                                                                                                        |  |
| \cmdmthrel        | 677, 1227, 1278, 1669, 1670, 1878, 1881, 2251                                                                                                                                                                                                                                              |  |
| \cmdmthset        | 658, 669, 1271, 1273, 1282, 1284, 1290, 1292, 1302, 1304, 1862, 1864, 1869, 1871, 1888, 1890, 1900, 1902, 1907, 1909, 2236, 2238, 2245, 2247, 2270                                                                                                                                         |  |
| \cmdmthsetext     | 668, 1223, 1231,                                                                                                                                                                                                                                                                           |  |
|                   | 1268, 1289, 1297, 1301, 1308, 1342, 1361, 1406, 1416, 1430, 1433, 1449, 1456, 1462, 1469, 1475, 1554, 1557, 1666, 1675, 1853, 1856, 1859, 1868, 1875, 1884, 1887, 1895, 1899, 1906, 2200, 2241, 2244, 2255, 2273, 2277                                                                     |  |
| \cmdmthsig        | 632                                                                                                                                                                                                                                                                                        |  |
| \cmdmthsnr        | 758                                                                                                                                                                                                                                                                                        |  |
| \cmdmthstr        | 645                                                                                                                                                                                                                                                                                        |  |
| \cmdmthsym        | 703, 728, 1261, 1263, 1337, 1339, 1356, 1358                                                                                                                                                                                                                                               |  |
| \cmdmthsymelm     | 727, 1224, 1225, 1269, 1270, 1272, 1274, 1291, 1293, 1303, 1305, 1667, 1860, 1861, 1863, 1865, 1870, 1872, 1889, 1891, 1901, 1903, 1908, 1910, 2201, 2246, 2248                                                                                                                            |  |
| \cmdmthvec        | 798                                                                                                                                                                                                                                                                                        |  |
| \cmdtxt           | 375, 401                                                                                                                                                                                                                                                                                   |  |
| \cmdtxtabr        | 549, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 857, 858, 859, 860, 862, 864, 865, 866, 867, 868, 869, 870, 871, 873, 874, 1421, 1422, 1423, 1424 |  |
| \cmdtxtall        | 400, 536, 548, 561, 573                                                                                                                                                                                                                                                                    |  |
| \cmdtxtarg        | 380, 401                                                                                                                                                                                                                                                                                   |  |
| \cmdtxtargabr     | 551                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtargcom     | 576                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtargdef     | 539                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtargname    | 564                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtcom        | 574, 1183, 1184, 1185                                                                                                                                                                                                                                                                      |  |
| \cmdtxtdef        | 537                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtname       | 562, 1848                                                                                                                                                                                                                                                                                  |  |
| \cmdtxtoarg       | 385, 401                                                                                                                                                                                                                                                                                   |  |
| \cmdtxtoargabr    | 553                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtoargcom    | 578                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtoargdef    | 541                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtoargname   | 566                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtopar       | 395, 401                                                                                                                                                                                                                                                                                   |  |
| \cmdtxtoparabr    | 557                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtoparcom    | 582                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtopardef    | 545                                                                                                                                                                                                                                                                                        |  |
| \cmdtxtoparname   | 570, 1243, 1246, 1249, 1252, 1255, 1258, 1319, 1322, 1325, 1328, 1331, 1334, 1347, 1350, 1353, 1372, 1436, 1437, 1489, 1492, 1495, 1498, 1501, 1504, 1507, 1510, 1519, 1520,                                                                                                               |  |



|                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1561, 1584, 1607, 1632,<br>1679, 1713, 1724, 1747,<br>1750, 1765, 1780, 1799,<br>1814, 1829, 1913, 2047,<br>2213, 2215, 2217, 2218,<br>2219, 2220, 2221, 2222,<br>2223, 2224, 2225, 2227,<br>2228, 2230, 2231, 2258,<br>2260, 2261, 2262, 2263,<br>2264, 2265, 2266, 2267 | <code>\DeclareMathOperator</code> 1041, 1043                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1843, 1845, 1915, 1917,<br>1920, 1923, 1925, 1932,<br>1934, 1937, 1940, 1942,<br>1949, 1951, 1954, 1957,<br>1959, 1966, 1968, 1971,<br>1974, 1976, 1983, 1985,<br>1988, 1991, 1993, 2000,<br>2002, 2005, 2008, 2010,<br>2017, 2019, 2022, 2025,<br>2027, 2034, 2036, 2039,<br>2042, 2044, 2049, 2051,<br>2054, 2057, 2059, 2066,<br>2068, 2071, 2074, 2076,<br>2083, 2085, 2088, 2091,<br>2093, 2100, 2102, 2105,<br>2108, 2110, 2117, 2119,<br>2122, 2125, 2127, 2134,<br>2136, 2139, 2142, 2144,<br>2151, 2153, 2156, 2159,<br>2161, 2168, 2170, 2173,<br>2176, 2178, 2185, 2187,<br>2190, 2193, 2195, 2342                                                                                                                                                                                                                                                                                                                                                                                                          |
| <code>\cmdtxtpar</code> ..... 390, 401                                                                                                                                                                                                                                    | <code>\DeclareOption</code> 12, 13, 17, 21,<br>25, 29, 33, 37, 41, 45,<br>49, 54, 55, 60, 61, 67,<br>68, 72, 73, 78, 79, 84,<br>85, 89, 90, 94, 95, 99,<br>100, 105, 106, 111, 112,<br>116, 121, 122, 127, 128, 131                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <code>\DeclareRobustCommand</code> ...                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <code>\cmdtxtparabr</code> ..... 555                                                                                                                                                                                                                                      | 152, 157, 159, 161, 163,<br>166, 175, 179, 184, 186,<br>188, 191, 195, 199, 202,<br>204, 206, 299, 305, 311,<br>317, 323, 329, 335, 341,<br>347, 353, 359, 362, 364,<br>366, 368, 370, 375, 380,<br>385, 390, 395, 400, 412,<br>418, 424, 430, 436, 442,<br>448, 454, 460, 466, 472,<br>475, 477, 479, 481, 483,<br>488, 491, 494, 497, 500,<br>503, 814, 882, 886, 889,<br>891, 894, 896, 898, 900,<br>902, 904, 907, 909, 911,<br>913, 916, 918, 920, 923,<br>925, 927, 929, 931, 933,<br>935, 940, 944, 948, 952,<br>956, 960, 964, 968, 972,<br>976, 980, 984, 989, 991,<br>993, 995, 997, 999, 1001,<br>1003, 1005, 1007, 1009,<br>1011, 1013, 1015, 1017,<br>1019, 1022, 1031, 1033,<br>1035, 1038, 1059, 1061,<br>1063, 1065, 1067, 1069,<br>1071, 1073, 1075, 1077,<br>1079, 1081, 1083, 1085,<br>1087, 1089, 1091, 1093,<br>1096, 1098, 1100, 1102,<br>1104, 1107, 1109, 1111,<br>1113, 1115, 1117, 1119,<br>1121, 1123, 1125, 1127,<br>1129, 1146, 1148, 1150,<br>1152, 1375, 1377, 1379,<br>1440, 1442, 1523, 1525,<br>1529, 1531, 1535, 1537,<br>1541, 1543, 1547, 1549,<br>1564, 1568, 1572, 1576,<br>1580, 1587, 1591, 1595,<br>1599, 1603, 1610, 1614,<br>1618, 1622, 1626, 1635,<br>1639, 1641, 1643, 1649,<br>1651, 1653, 1655, 1657,<br>1659, 1682, 1686, 1688,<br>1690, 1694, 1698, 1702,<br>1704, 1706, 1716, 1718,<br>1720, 1727, 1729, 1731,<br>1753, 1757, 1759, 1761,<br>1768, 1772, 1774, 1776,<br>1783, 1787, 1789, 1791,<br>1802, 1806, 1808, 1810,<br>1817, 1821, 1823, 1825,<br>1832, 1836, 1838, 1840, | <code>\DeclareRobustCommandx</code> ..<br>.. 301, 303, 307, 309,<br>313, 315, 319, 321, 325,<br>327, 331, 333, 337, 339,<br>343, 345, 349, 351, 355,<br>357, 403, 414, 416, 420,<br>422, 426, 428, 432, 434,<br>438, 440, 444, 446, 450,<br>452, 456, 458, 462, 464,<br>468, 470, 506, 512, 514,<br>516, 518, 520, 522, 524,<br>526, 528, 537, 539, 541,<br>543, 545, 549, 551, 553,<br>555, 557, 562, 564, 566,<br>568, 570, 574, 576, 578,<br>580, 582, 593, 595, 597,<br>599, 601, 606, 608, 610,<br>612, 614, 619, 621, 623,<br>625, 627, 632, 634, 636,<br>638, 640, 645, 647, 649,<br>651, 653, 658, 660, 662,<br>664, 666, 668, 677, 679,<br>681, 683, 685, 690, 692,<br>694, 696, 698, 703, 705,<br>707, 709, 711, 716, 718,<br>720, 722, 724, 727, 730,<br>733, 736, 739, 746, 748,<br>752, 758, 760, 762, 764,<br>766, 771, 773, 775, 777,<br>779, 785, 787, 789, 791,<br>793, 798, 800, 802, 804,<br>806, 1929, 1946, 1963,<br>1980, 1997, 2014, 2031,<br>2063, 2080, 2097, 2114,<br>2131, 2148, 2165, 2182 |
| <code>\cmdtxtparcom</code> ..... 580                                                                                                                                                                                                                                      | <code>\DeclareRobustCommandx</code> ..                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <code>\DecSet</code> ..... 1873                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\cmdtxtpardef</code> ..... 543                                                                                                                                                                                                                                      | <code>\decset</code> ..... 1874, 1875                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <code>\decsym</code> ..... 1873, 1875                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <code>\cmdtxtparname</code> ..... 568                                                                                                                                                                                                                                     | <code>\dedicto</code> ..... 843                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <code>\dedicto</code> ..... 822                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\cmodels</code> ..... 907                                                                                                                                                                                                                                           | <code>\defacto</code> ..... 844                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\cmp</code> ..... 1035                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\cnf</code> ..... 1421                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\Cnt</code> ..... 1409                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\cod</code> ..... 1025                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\coimplies</code> ..... 902                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\Coloneqq</code> ..... 887                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\coloneqq</code> ..... 887                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\com@false</code> ..... 56, 77, 79                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <code>\coWMCL</code> ..... 1603                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <code>\coWMPL</code> ..... 1626                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| \FBGPL        | 2022, 2026, 2028                                                                                                                                                                                                                                                                                           | \gam@false    | 56, 62, 88, 90                                 | \implied                    | 898                                                                                                                                        |
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| \FCGSL        | 2088, 2092, 2094                                                                                                                                                                                                                                                                                           | \GameName     | 1279                                           | \infty                      | 1066, 1070, 1072, 1074, 1078, 1080, 1082, 1086, 1088, 1090, 1094                                                                           |
| \FDGPL        | 1971, 1975, 1977                                                                                                                                                                                                                                                                                           | \gamename     | 1279, 1280                                     | \int                        | 1311                                                                                                                                       |
| \FDGSL        | 2105, 2109, 2111                                                                                                                                                                                                                                                                                           | \gcd          | 1143                                           | \interdisplaylinepenalty    | 219                                                                                                                                        |
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| \FEGSL        | 2139, 2143, 2145                                                                                                                                                                                                                                                                                           | \GMC          | 1678                                           | <b>K</b>                    |                                                                                                                                            |
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| \ffsym        | 1386, 1387                                                                                                                                                                                                                                                                                                 | \GoTo         | 2335                                           | \KrpStr                     | 1662                                                                                                                                       |
| \fi           | 153, 155, 164, 220, 225, 231, 236, 251, 256, 271, 279, 280, 284, 286, 584, 808, 875, 1156, 1212, 1235, 1364, 2206, 2279, 2286, 2307, 2308, 2315, 2345                                                                                                                                                      | \grp@false    | 83, 85                                         | \krpstr                     | 1662, 1663                                                                                                                                 |
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[illegible]

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| <code>\playsym</code> . . . . .        | <a href="#">1295</a> , <a href="#">1297</a> , <a href="#">1893</a> , <a href="#">1895</a>   | <code>\Qnt</code> . . . . .             | <a href="#">1409</a>                                                                                           | <code>\seqoflet</code> . . . . .          |                                                                                                                                   |
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