

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

Fabio Mogavero  
fm@fabiomogavero.com

Released 2023/01/03

## Abstract

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

## 1 Implementation & Usage

```
1 <package>
  Required external packages:
2
3 \RequirePackage{etoolbox}
4
5 \RequirePackage{xargs}
6 \RequirePackage{xspace}
7 \RequirePackage{stringstrings}
8
  Package options:
9
10 %% Auxiliary packages
11 \newif\ifaux@ \aux@false
12 \DeclareOption{aux}{\aux@true}
13 \DeclareOption{noaux}{\aux@false}
14
15 %% AMS defaults
16 \newif\ifamsdef@ \amsdef@true
17 \DeclareOption{noamsdef}{\amsdef@false}
18
19 %% AMS theorem tools
20 \newif\ifamsthm@ \amsthm@true
21 \DeclareOption{noamsthm}{\amsthm@false}
22
23 %% Extended Theorem tools
24 \newif\ifthmtls@ \thmtls@true
25 \DeclareOption{nothmtls}{\thmtls@false}
26
27 %% Enumeration tools
28 \newif\ifenmtls@ \enmtls@true
29 \DeclareOption{noenmtls}{\enmtls@false}
30
31 %% Hyper reference
32 \newif\ifhympref@ \hympref@true
33 \DeclareOption{nohympref}{\hympref@false}
34
35 %% Font tools
36 \newif\iffnttts@ \fnttts@true
```

---

\*This document describes version v0.11 of the fmocdmac package, last revised 2023/01/03.

```

37 \DeclareOption{nofnttts}{\fnttts@false}
38
39 %% Camera-ready version
40 \newif\ifcrv@ \crv@false
41 \DeclareOption{crv}{\crv@true}
42
43 %% Change bars
44 \newif\ifchgbar@ \chgbar@false
45 \DeclareOption{chgbar}{\chgbar@true}
46
47 %% Line numbers
48 \newif\iflinnum@ \linnum@false
49 \DeclareOption{linnum}{\linnum@true}
50
51
52 %% Text macro generation
53 \newif\iftxtgen@ \txtgen@false
54 \DeclareOption{txtgen}{\txtgen@true}
55 \DeclareOption{notxtgen}
56   {\txtgen@false\text@false\com@false\gam@false\log@false\aut@false}
57
58 %% Math macro generation
59 \newif\ifmthgen@ \mthgen@false
60 \DeclareOption{mthgen}{\mthgen@true}
61 \DeclareOption{nomthgen}
62   {\mthgen@false\math@false\gam@false\log@false\aut@false}
63
64
65 %% Elementary macros for text
66 \newif\iftext@ \text@false
67 \DeclareOption{text}{\text@true\txtgen@true}
68 \DeclareOption{notext}{\text@false}
69
70 %% Elementary macros for math
71 \newif\ifmath@ \math@false
72 \DeclareOption{math}{\math@true\mthgen@true}
73 \DeclareOption{nomath}{\math@false}
74
75
76 %% Macros for computational-complexity classes
77 \newif\ifcom@ \com@false
78 \DeclareOption{com}{\com@true\txtgen@true}
79 \DeclareOption{nocom}{\com@false}
80
81
82 %% Macros for games
83 \newif\ifgam@ \gam@false
84 \DeclareOption{gam}{\gam@true\txtgen@true\mthgen@true}
85 \DeclareOption{nogam}{\gam@false}
86
87 %% Macros for logics
88 \newif\iflog@ \log@false
89 \DeclareOption{log}{\log@true\txtgen@true\mthgen@true}
90 \DeclareOption{nolog}{\log@false}
91
92 %% Macros for automata
93 \newif\ifaut@ \aut@false
94 \DeclareOption{aut}{\aut@true\txtgen@true\mthgen@true}
95 \DeclareOption{noaut}{\aut@false}
96
97
98 %% Format-related tricks
99 \newif\iffrm@ \frm@false

```

```

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

```

#### Option-processing code:

```

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

```

```

162 \ifhyref@
163   % Hyper References
164   \RequirePackage{hyperref}
165
166   \hypersetup
167   {
168     pdfsubject      = {},
169     pdfkeywords     = {},
170     pdfproducer     = {},
171     pdfcreator      = {},
172     pdfpagemode     = {UseNone},
173     pdfstartview    = {FitH},
174     urlcolor        = {blue},
175     colorlinks
176   }
177 \fi
178
179 \iffnttts@
180   % Font Tools
181   \RequirePackage[final]{microtype}
182 \fi
183
184 \ifcrv@
185   % Camera-Ready Version
186
187   %%...
188
189 \else
190   % Draft Version
191
192   %%...
193
194   \ifchgbar@
195     % Change Bars
196     \RequirePackage{changebar}
197   \fi
198
199   \iflinnum@
200     % Line Numbers
201     \if@twocolumn
202       \RequirePackage[switch, columnwise, mathlines]{lineno}\linenumbers
203     \else
204       \RequirePackage[columnwise, mathlines]{lineno}\linenumbers
205     \fi
206   \fi
207
208   %%...
209
210 \fi
211
212 \fi
213 %%*****
214 %%*****
215 %%** Auxiliary Font Declarations *****
216 %%*****

```

**\mathbbbo Bbo Math Font: ... to do!**

```

217 \ifdef{\mathbbbo}{\}{\DeclareMathAlphabet{\mathbbbo}{U}{bbold}{m}{n}}

```

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

```

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

```

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

```

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

```

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

```

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

221 %*****%
222 %*****%
223 %** Auxiliary Alphabet Letters *****%
224 %*****%

```

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

```

225 \csdef{omicron}{o}

```

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

```

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

230 %*****%
231 %*****%
232 %** Tools *****%
233 %*****%

```

`\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”

```

234 \newcommand{\empchk}[2]
235   {\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”

```

236 \newcommand{\defval}[2]
237   {\if&#1&#2\else#1\fi}

238 %*****%

```

`\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”

```

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

```

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

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

```

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

```

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

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

```

243 \newcommand{\argmid}[3]
244   {\empchk{#2}{#1\allowbreak#2\allowbreak#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”

```

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

247 %%*****%
```

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

```

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

256 %%*****%
```

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

```

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

\seqofcmd
```

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

```

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

265 %%*****%
```

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

```

266 \newcommand{\seqoflatlow}
267   {\seqoftag{a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s,t,u,v,w,x,y,z}}
```

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

```

268 \newcommand{\seqoflatupp}
269   {\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!`

```

270 \newcommand{\seqoflatlet}[2]
271   {\seqoflatlow{#1}{#2}\seqoflatupp{#1}{#2}}

272 %%*****%
```

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

```

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

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

```

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

```

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

283 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

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

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

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

290 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
291 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
292 %** Text Meta Commands %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
293 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

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

\newtxtsty ... to do!
  • \newtxtsty[\rmfamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxtsty[\rmfamily][\sffamily]{Name}[sub][sup][Ext] = “NamesubExt”
  • \newtxtsty[\rmfamily][\ttfamily]{Name}[sub][sup][Ext] = “NamesubExt”
296 \newcommandx{\newtxtsty}[2][2=]
297   {\newtxt[\defval{#2}{#1}]}

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

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

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

```

```

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

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

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

\newtxtopar ... to do!
    • \newtxtopar[\rmfamily]{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newtxtopar[\sffamily]{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newtxtopar[\ttfamily]{Name}[sub][sup][Par] = "Namesub[Par]"
310 \newcommandx{\newtxtopar}[5][1=, 3=, 4=, 5=]
311   {\newtxtpar{#1}{#2}{#3}{#4}{#5}}

\newtxtoparsty ... to do!
    • \newtxtoparsty{\rmfamily}{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newtxtoparsty{\rmfamily}{\sffamily}{Name}[sub][sup][Par] = "Namesub[Par]"
    • \newtxtoparsty{\rmfamily}{\ttfamily}{Name}[sub][sup][Par] = "Namesub[Par]"
312 \newcommandx{\newtxtoparsty}[2][2=]
313   {\newtxtopar[\defval{#2}{#1}]}

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

316 %%*****%

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

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

```



```

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

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

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

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

\txtsty ... to do!
327 \newcommand{\txtsty}
328 {\mdseries\upshape\rmfamily}

329 %*****%

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

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

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

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

\cmdtxtopar ... to do!

```

```

    • \cmdttxtopar{NewCmd}; \newcommand{txtstyNewCmd}{\scshape\ttfamily};
      \txtoparNewCmd{Name}[sub][sup][Par] = NAMESUB[PAR]
338 \newcommand{\cmdttxtopar}[1]
339   {\csdef{txtopar#1}{\newttxtoparsty{\csname txtsty#1\endcsname}}}

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

342 %%*****%

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

345 %%*****%
346 %%*****%
347 %** Math Meta Commands *****%
348 %%*****%

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

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

\newmtharg ... to do!
    • \newmtharg[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"
    • \newmtharg[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"
    • \newmtharg[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"
353 \newcommandx{\newmtharg}[7][1=, 3=, 4=, 5=, 7=]
354   {\newmth{#1}{#2}{#3}{#4}{#5}\argmid{\!\left(\!{#6}{\right)}\arglef{\!}{#7}}}}

\newmthargsty ... to do!
    • \newmthargsty[mathrm]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"
    • \newmthargsty[mathsf]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"
    • \newmthargsty[mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] = "NamesupsubExt1(Arg)Ext2"

```

```

355 \newcommandx{\newmthargsty}[2][2=]
356   {\newmtharg[\defval{#2}{#1}]}

\newmthoarg ... to do!


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


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

\newmthoargsty ... to do!


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


359 \newcommandx{\newmthoargsty}[2][2=]
360   {\newmtharg[\defval{#2}{#1}]}

\newmthpar ... to do!


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


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

\newmthparsty ... to do!


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


363 \newcommandx{\newmthparsty}[2][2=]
364   {\newmthpar[\defval{#2}{#1}]}

\newmthopar ... to do!


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


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

\newmthoparsty ... to do!


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


367 \newcommandx{\newmthoparsty}[2][2=]
368   {\newmthopar[\defval{#2}{#1}]}

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

371 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\mth ... to do!


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

```

```

372 \newcommand{\mth}
373   {\newmthsty{\mthsty}}

\mtharg ... to do!
  • \mtharg{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mtharg[\mathbf]{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mtharg[\mathtt]{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathtt{Name}_{sub}^{sup}Ext1(Arg)Ext2$ 
374 \newcommand{\mtharg}
375   {\newmthargsty{\mthsty}}

\mthoarg ... to do!
  • \mthoarg{Name}[sub][sup][Arg] =  $Name_{sub}^{sup}(Arg)$ 
  • \mthoarg[\mathbf]{Name}[sub][sup][Arg] =  $\mathbf{Name}_{sub}^{sup}(Arg)$ 
  • \mthoarg[\mathtt]{Name}[sub][sup][Arg] =  $\mathtt{Name}_{sub}^{sup}(Arg)$ 
376 \newcommand{\mthoarg}
377   {\newmthoargsty{\mthsty}}

\mthpar ... to do!
  • \mthpar{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
  • \mthpar[\mathbf]{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathbf{Name}_{sub}^{sup}Ext1[Par]Ext2$ 
  • \mthpar[\mathtt]{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathtt{Name}_{sub}^{sup}Ext1[Par]Ext2$ 
378 \newcommand{\mthpar}
379   {\newmthparsty{\mthsty}}

\mthopar ... to do!
  • \mthopar{Name}[sub][sup][Par] =  $Name_{sub}^{sup}[Par]$ 
  • \mthopar[\mathbf]{Name}[sub][sup][Par] =  $\mathbf{Name}_{sub}^{sup}[Par]$ 
  • \mthopar[\mathtt]{Name}[sub][sup][Par] =  $\mathtt{Name}_{sub}^{sup}[Par]$ 
380 \newcommand{\mthopar}
381   {\newmthoparsty{\mthsty}}

\mthsty ... to do!
382 \newcommand{\mthsty}
383   {}

384 %%*****%

\cmdmth ... to do!
  • \cmdmth{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
    \mthNewCmd{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
385 \newcommand{\cmdmth}[1]
386   {\csdef{mth#1}{\newmthsty{mthsty#1}}}

\cmdmtharg ... to do!
  • \cmdmtharg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
    \mthargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
387 \newcommand{\cmdmtharg}[1]
388   {\csdef{mtharg#1}{\newmthargsty{mthsty#1}}}

\cmdmthoarg ... to do!
  • \cmdmthoarg{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
    \mthoargNewCmd{Name}[sub][sup][Arg] =  $Name_{sub}^{sup}(Arg)$ 
389 \newcommand{\cmdmthoarg}[1]
390   {\csdef{mthoarg#1}{\newmthoargsty{mthsty#1}}}

\cmdmthpar ... to do!

```

```

    • \cmdmthpar{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
391 \newcommand{\cmdmthpar}[1]
392   {\csdef{mthpar#1}{\newmthparsty{mthsty#1}}}

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

\cmdmthall ... to do!
    • \cmdmthall{NewCmd}; \newcommand{mthstyNewCmd}{\mathtt};
      \mthNewCmd{Name}[sub][sup][Ext] = NamesupsubExt
      \mthargNewCmd{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
      \mthoargNewCmd{Name}[sub][sup][Arg] = Namesupsub(Arg)
      \mthparNewCmd{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
      \mthoparNewCmd{Name}[sub][sup][Par] = Namesupsub[Par]
395 \newcommand{\cmdmthall}[1]
396   {\cmdmth{#1}\cmdmtharg{#1}\cmdmthoarg{#1}\cmdmthpar{#1}\cmdmthopar{#1}}

397 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

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

400 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

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

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

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

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

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

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

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

```

```

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

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

419 %%*****%
420 %%*****%
421 %%** Text Macro Generators *****%
422 %%*****%
423 \iftxtgen@

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

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

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

```

```

434 \newcommandx{\cmdtxtopardef}[2][2=]
435   {\usrtxt{#1}{\opardef}[#2]}

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

436 %% Style for Abbreviations
437 \cmdtxtall{abr}\newcommand{\txtstyabr}{\em}

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

438 \newcommandx{\cmdtxtabr}[2][2=]
439   {\usrtxt{#1}{\abr}[#2]}

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

440 \newcommandx{\cmdtxtargabr}[2][2=]
441   {\usrtxt{#1}{\argabr}[#2]}

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

442 \newcommandx{\cmdtxtoargabr}[2][2=]
443   {\usrtxt{#1}{\oargabr}[#2]}

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

444 \newcommandx{\cmdtxtparabr}[2][2=]
445   {\usrtxt{#1}{\parabr}[#2]}

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

446 \newcommandx{\cmdtxtoparabr}[2][2=]
447   {\usrtxt{#1}{\oparabr}[#2]}

448 %%*****

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

```

```

449 %% Style for Names
450 \cmdtxtall{name}\newcommand{\txtstytname}{\normalfont\mdseries\scshape\sffamily}

```

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

- \cmdtxtname{cmdName};  
  \cmdName[sub][sub][ext] = CMDNAME<sup>SUB</sup>EXT
- \cmdtxtname{cmdName}[newName];  
  \cmdName[sub][sub][ext] = NEWNAME<sup>SUB</sup>EXT

```
451 \newcommandx{\cmdtxtname}[2][2=]
```

```
452 {\usrtxt{#1}{\name}[#2]}
```

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

- \cmdtxtargname{cmdName};  
  \cmdName[sub][sub][ext1]{arg}[ext2] = CMDNAME<sup>SUB</sup>EXT1(ARG)EXT2
- \cmdtxtargname{cmdName}[newName];  
  \cmdName[sub][sub][ext1]{arg}[ext2] = NEWNAME<sup>SUB</sup>EXT1(ARG)EXT2

```
453 \newcommandx{\cmdtxtargname}[2][2=]
```

```
454 {\usrtxt{#1}{\argname}[#2]}
```

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

- \cmdtxtoargname{cmdName};  
  \cmdName[sub][sub][arg] = CMDNAME<sup>SUB</sup>(ARG)
- \cmdtxtoargname{cmdName}[newName];  
  \cmdName[sub][sub][arg] = NEWNAME<sup>SUB</sup>(ARG)

```
455 \newcommandx{\cmdtxtoargname}[2][2=]
```

```
456 {\usrtxt{#1}{\oargname}[#2]}
```

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

- \cmdtxtparname{cmdName};  
  \cmdName[sub][sub][ext1]{par}[ext2] = CMDNAME<sup>SUB</sup>EXT1[PAR]EXT2
- \cmdtxtparname{cmdName}[newName];  
  \cmdName[sub][sub][ext1]{par}[ext2] = NEWNAME<sup>SUB</sup>EXT1[PAR]EXT2

```
457 \newcommandx{\cmdtxtparname}[2][2=]
```

```
458 {\usrtxt{#1}{\parname}[#2]}
```

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

- \cmdtxtoparname{cmdName};  
  \cmdName[sub][sub][par] = CMDNAME<sup>SUB</sup>[PAR]
- \cmdtxtoparname{cmdName}[newName];  
  \cmdName[sub][sub][par] = NEWNAME<sup>SUB</sup>[PAR]

```
459 \newcommandx{\cmdtxtoparname}[2][2=]
```

```
460 {\usrtxt{#1}{\oparname}[#2]}
```

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

- \txtcom{Name}[sub][sup][Ext] = NAME<sup>SUP</sup>EXT
- \txtargcom{Name}[sub][sup][Ext1]{Arg}[Ext2] = NAME<sup>SUP</sup>EXT1(ARG)EXT2
- \txtparcom{Name}[sub][sup][Ext1]{Par}[Ext2] = NAME<sup>SUP</sup>EXT1[PAR]EXT2

```
461 %% Style for Complexities
```

```
462 \cmdtxtall{com}\newcommand{\txtstytcom}{\normalfont\mdseries\scshape\rmfamily}
```

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

- \cmdtxtcom{cmdName};  
  \cmdName[sub][sub][ext] = CMDNAME<sup>SUB</sup>EXT
- \cmdtxtcom{cmdName}[newName];  
  \cmdName[sub][sub][ext] = NEWNAME<sup>SUB</sup>EXT

```
463 \newcommandx{\cmdtxtcom}[2][2=]
```

```
464 {\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
465 \newcommandx{\cmdtxtargcom}[2][2=]
466   {\usrtxt{#1}{-}{argcom}[#2]}

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

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

473 \fi
474 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
475 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
476 %** Math Macro Generators %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
477 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
478 \ifmthgen@

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

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

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

```

```

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

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

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

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

\mthfam, ... ... to do!
    • \mthfam{NAME}[sub][sup][Ext] =  $\mathcal{NAME}_{sub}^{sup}Ext$ 
    • \mthargfam{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfam{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}_{sub}^{sup}Ext1[Par]Ext2$ 
492 %% Style for Families
493 \cmdmthall{fam}\newcommand{\mthstyfam}{\mathscr}

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

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

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

```

```

497 \newcommandx{\cmdmthargfam}[2][2=]
498   {\usrmth{#1}{Fam}{argfam}{#2}}

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

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

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

\mthcls, ... ... to do!
  • \mthcls{NAME}[sub][sup][Ext] =  $\mathcal{NAME}^{\mathcal{sup}}_{\mathcal{sub}}Ext$ 
  • \mthargcls{NAME}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{NAME}^{\mathcal{sup}}_{\mathcal{sub}}Ext1(Arg)Ext2$ 
  • \mthparcls{NAME}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{NAME}^{\mathcal{sup}}_{\mathcal{sub}}Ext1[Par]Ext2$ 
505 %% Style for Classes
506 \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
507 \seqoflatupp{Cls}{mthcls}

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

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

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

```

```

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

\mthsig, ... ... to do!
    • \mthsig{Name}[sub][sup][Ext] =  $\mathcal{ame}_{sub}^{sup}Ext$ 
    • \mthargsig{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparsig{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\mathcal{ame}_{sub}^{sup}Ext1[Par]Ext2$ 
518 %% Style for Signatures
519 \cmdmthall{sig}\newcommand{\mthstysig}{\mathpzc}

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

\cmdmthsig ... to do!
    • \cmdmthsig{cmdName};
      \cmdNameSig[sub][sub][ext] =  $cmd\mathcal{ame}_{sub}^{sub}ext$ 
    • \cmdmthsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext$ 
521 \newcommandx{\cmdmthsig}[2][2=]
522   {\usrmth{#1}{Sig}{sig}{#2}}

\cmdmthargsig ... to do!
    • \cmdmthargsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $cmd\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 
    • \cmdmthargsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{arg}[ext2] =  $\mathcal{ew}\mathcal{ame}_{sub}^{sub}ext1(arg)ext2$ 
523 \newcommandx{\cmdmthargsig}[2][2=]
524   {\usrmth{#1}{Sig}{argsig}{#2}}

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

```

```

\cmdmthparsig ... to do!
    • \cmdmthparsig{cmdName};
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = cmd\amesubext1[par]ext2
    • \cmdmthparsig{cmdName}[NewName];
      \cmdNameSig[sub][sub][ext1]{par}[ext2] = \ew\amesubext1[par]ext2
527 \newcommandx{\cmdmthparsig}[2][2=]
528   {\usrmth{#1}{Sig}{parsig}{#2}}

\cmdmthoparsig ... to do!
    • \cmdmthoparsig{cmdName};
      \cmdNameSig[sub][sub][par] = cmd\amesub[par]
    • \cmdmthoparsig{cmdSig}[NewName];
      \cmdSigSig[sub][sub][par] = \ew\amesub[par]
529 \newcommandx{\cmdmthoparsig}[2][2=]
530   {\usrmth{#1}{Sig}{oparsig}{#2}}

\mthstr, ... ... to do!
    • \mthstr{Name}[sub][sup][Ext] = \amesupExt
    • \mthargstr{Name}[sub][sup][Ext1]{Arg}[Ext2] = \amesupExt1(Arg)Ext2
    • \mthparstr{Name}[sub][sup][Ext1]{Par}[Ext2] = \amesupExt1[Par]Ext2
531 %% Style for Structures
532 \cmdmthall{str}\newcommand{\mthstystyr}{\mathfrak}

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

\cmdmthstr ... to do!
    • \cmdmthstr{cmdName};
      \cmdNameStr[sub][sub][ext] = cmd\amesubext
    • \cmdmthstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext] = \ew\amesubext
534 \newcommandx{\cmdmthstr}[2][2=]
535   {\usrmth{#1}{Str}{str}{#2}}

\cmdmthargstr ... to do!
    • \cmdmthargstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = cmd\amesubext1(arg)ext2
    • \cmdmthargstr{cmdName}[NewName];
      \cmdNameStr[sub][sub][ext1]{arg}[ext2] = \ew\amesubext1(arg)ext2
536 \newcommandx{\cmdmthargstr}[2][2=]
537   {\usrmth{#1}{Str}{argstr}{#2}}

\cmdmthoargstr ... to do!
    • \cmdmthoargstr{cmdName};
      \cmdNameStr[sub][sub][arg] = cmd\amesub(arg)
    • \cmdmthoargstr{cmdStr}[NewName];
      \cmdStrStr[sub][sub][arg] = \ew\amesub(arg)
538 \newcommandx{\cmdmthoargstr}[2][2=]
539   {\usrmth{#1}{Str}{oargstr}{#2}}

\cmdmthparstr ... to do!
    • \cmdmthparstr{cmdName};
      \cmdNameStr[sub][sub][ext1]{par}[ext2] = cmd\amesubext1[par]ext2

```

```

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

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

\mthset, ... ... to do!
    • \mthset{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargset{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparset{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
544 %% Style for Sets
545 \cmdmthall{set}\newcommand{\mthstyset}{\mathrm}

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

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

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

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

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

```

```

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

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

\mthrel, ... ... to do!
    • \mthrel{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargrel{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparrel{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
563 %% Style for Relations
564 \cmdmthall{rel}\newcommand{\mthstyrel}{\mathit}

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

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

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

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

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

```

```

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

\mthfun, ... ... to do!
    • \mthfun{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargfun{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparfun{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
576 %% Style for Functions
577 \cmdmthall{fun}\newcommand{\mthstyfun}{\mathsf}

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

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

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

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

\cmdmthparfun ... to do!
    • \cmdmthparfun{cmdName};
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $cmdName_{sub}^{sub}ext1[par]ext2$ 
    • \cmdmthparfun{cmdName}[NewName];
      \cmdNameFun[sub][sub][ext1]{par}[ext2] =  $NewName_{sub}^{sub}ext1[par]ext2$ 
585 \newcommandx{\cmdmthparfun}[2][2=]
586   {\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]
587 \newcommandx{\cmdmthoparfun}[2][2=]
588   {\usrmth{#1}{Fun}{oparfun}{#2}}

\mthsym, ... ... to do!
    • \mthsym{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargsym{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparsym{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
589 %% Style for Symbols
590 \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
591 \seqoflet{Sym}{mthsym}

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

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

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

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

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

```

```

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

\mthelm, ... ... to do!
    • \mthelm{Name}[sub][sup][Ext] =  $Name_{sub}^{sup}Ext$ 
    • \mthargelm{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $Name_{sub}^{sup}Ext1(Arg)Ext2$ 
    • \mthparelm{Name}[sub][sup][Ext1]{Par}[Ext2] =  $Name_{sub}^{sup}Ext1[Par]Ext2$ 
602 %% Style for Elements
603 \cmdmthall{elm}\newcommand{\mthstyelm}{\mathnormal}

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

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

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

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

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

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

```

```

615 %%*****%

\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
616 \newcommandx{\cmdmthsymelm}[2][2=]
617   {\cmdmthsym{#1}[#2]}
618   \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
619 \newcommandx{\cmdmthargsymelm}[2][2=]
620   {\cmdmthargsym{#1}[#2]}
621   \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)
622 \newcommandx{\cmdmthoargsymelm}[2][2=]
623   {\cmdmthoargsym{#1}[#2]}
624   \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
625 \newcommandx{\cmdmthparsymelm}[2][2=]
626   {\cmdmthparsym{#1}[#2]}
627   \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]
628 \newcommandx{\cmdmthoparsymelm}[2][2=]
629   {\cmdmthoparsym{#1}[#2]}
630   \cmdmthoparelm{#1}[#2]}

631 %%*****%

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

```

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

```
632 %% Style for \LaTeX Operators
633 \cmdmth{luop}\newcommand{\mthstyluop}[1]{\textstyle\mathop{\#1}}
634 \cmdmth{lbop}\newcommand{\mthstylbop}[1]{\textstyle\mathbin{\#1}}
```

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

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

```
635 \newcommandx{\cmdmthluop}[2][2=]
636   {\usrmth{\#1}\UOp}\luop}{\#2}}
637 \newcommandx{\cmdmthlbop}[2][2=]
638   {\usrmth{\#1}\BOp}\lbop}{\#2}}
```

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

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

```
639 %% Style for \LaTeX Relations
640 \cmdmth{lrel}\newcommand{\mthstylrel}{\mathrel}
```

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

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

```
641 \newcommandx{\cmdmthlrel}[2][2=]
642   {\usrmth{\#1}\Rel}\lrel}{\#2}}
```

```
643 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

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

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

```
644 %% Style for Sentences
645 \cmdmthall{snt}\newcommand{\mthstysnt}{\mathsf}
```

$\backslash\mathrm{aSnt}$ , ... to do!

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

```
646 \seqoflet{\Snt}{\mthsnt}
```

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

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

```
647 \newcommandx{\cmdmthsnt}[2][2=]
648   {\usrmth{\#1}\Snt}\snt}{\#2}}
```

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

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

649 `\newcommandx{\cmdmthargsnt}[2][2=]`  
650 `{\usrmth{#1}{Snt}{argsnt}{#2}}`

`\cmdmthoargsnt` ... to do!

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

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

653 `\newcommandx{\cmdmthparsnt}[2][2=]`  
654 `{\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]`

655 `\newcommandx{\cmdmthoparsnt}[2][2=]`  
656 `{\usrmth{#1}{Snt}{oparsnt}{#2}}`

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

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

657 `%% Style for Formulae`  
658 `\cmdmthall{frm}\newcommand{\mthstyfrm}{\mathit}`

`\aFrm, ...` ... to do!

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

659 `\seqoflet{Frm}{mthfrm}`

`\cmdmthfrm` ... to do!

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

660 `\newcommandx{\cmdmthfrm}[2][2=]`  
661 `{\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`

```

662 \newcommandx{\cmdmthargfrm}[2][2=]
663   {\usrmth{#1}{Frm}{argfrm}{#2}}

\cmdmthoargfrm ... to do!
  • \cmdmthoargfrm{cmdName};
    \cmdNameFrm[sub][sub][arg] =  $\text{cmdName}_{sub}^{sub}(arg)$ 
  • \cmdmthoargfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][arg] =  $\text{NewName}_{sub}^{sub}(arg)$ 
664 \newcommandx{\cmdmthoargfrm}[2][2=]
665   {\usrmth{#1}{Frm}{oargfrm}{#2}}

\cmdmthparfrm ... to do!
  • \cmdmthparfrm{cmdName};
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $\text{cmdName}_{sub}^{sub}ext1[par]ext2$ 
  • \cmdmthparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][ext1]{par}[ext2] =  $\text{NewName}_{sub}^{sub}ext1[par]ext2$ 
666 \newcommandx{\cmdmthparfrm}[2][2=]
667   {\usrmth{#1}{Frm}{parfrm}{#2}}

\cmdmthoparfrm ... to do!
  • \cmdmthoparfrm{cmdName};
    \cmdNameFrm[sub][sub][par] =  $\text{cmdName}_{sub}^{sub}[par]$ 
  • \cmdmthoparfrm{cmdName}[NewName];
    \cmdNameFrm[sub][sub][par] =  $\text{NewName}_{sub}^{sub}[par]$ 
668 \newcommandx{\cmdmthoparfrm}[2][2=]
669   {\usrmth{#1}{Frm}{oparfrm}{#2}}

670 %%*****%

\mthmat, ... ... to do!
  • \mthmat{Name}[sub][sup][Ext] =  $\text{Name}_{sub}^{sup}Ext$ 
  • \mthargmat{Name}[sub][sup][Ext1]{Arg}[Ext2] =  $\text{Name}_{sub}^{sup}Ext1(Arg)Ext2$ 
  • \mthparmat{Name}[sub][sup][Ext1]{Par}[Ext2] =  $\text{Name}_{sub}^{sup}Ext1[Par]Ext2$ 
671 %% Style for Matrices
672 \cmdmthall{mat}\newcommand{\mthstymat}[1]{\boldsymbol{\mathsf{#1}}}

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

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

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

```

```

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

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

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

\mthvec, ... ... to do!
    • \mthvec{Name}[sub][sup][Ext] = NamesupsubExt
    • \mthargvec{Name}[sub][sup][Ext1]{Arg}[Ext2] = NamesupsubExt1(Arg)Ext2
    • \mthparvec{Name}[sub][sup][Ext1]{Par}[Ext2] = NamesupsubExt1[Par]Ext2
684 %% Style for Vectors
685 \cmdmthall{vec}\newcommand{\mthstyvec}[1]{\boldsymbol{\mathit{#1}}}

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

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

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

```

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

```

691 \newcommandx{\cmdmthoargvec}[2][2=]
692   {\usrmth{\#1}\Vec}\oargvec{\#2}}

\cmdmthparvec ... to do!


- $\backslash\text{cmdmthparvec}\{\text{cmdName}\}$ ;  

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

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



```

693 \newcommandx{\cmdmthparvec}[2][2=]
694   {\usrmth{\#1}\Vec}\parvec{\#2}}

\cmdmthoparvec ... to do!


- $\backslash\text{cmdmthoparvec}\{\text{cmdName}\}$ ;  

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

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



```

695 \newcommandx{\cmdmthoparvec}[2][2=]
696   {\usrmth{\#1}\Vec}\oparvec{\#2}}

697 \fi
698 %*****
699 %*****
700 %** Elementary Macros for Text *****
701 %*****
702 \iftext@
703 %** Latin Abbreviations *****

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

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

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

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

\cf         • \cf = cf.
708 \cmdtxtabr{\cf}[cf.]

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

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

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

\divideetimperā • \divideetimperā = divide et impera
712 \cmdtxtabr{\divideetimperā}[divide et impera]

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

```


```


```



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

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

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

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

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

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

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

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

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

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

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

`\viz`      • `\viz = viz.`  
725 `\cmdtxtabr{viz}[viz.]`  
726 `%%*****%`

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

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

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

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

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

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

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

`\Eg`      • `\Eg = E.g.`

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

`\Errata`      • `\Errata = Errata`

735 `\cmdtxtabr{Errata}`

`\Erratum`      • `\Erratum = Erratum`

736 `\cmdtxtabr{Erratum}`

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

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

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

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

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

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

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

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

741 `%%** Italian Abbreviations *****%`

...

742 `%%*****%`

...

743 `%%** French Abbreviations *****%`

`\naif`      • `\naif = naïf`

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

`\naive`      • `\naive = naïve`

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

`\role`      • `\role = rôle`

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

747 `%%*****%`

`\Role`      • `\Role = Rôle`

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

749 `%%** English Abbreviations *****%`

`\aka`      • `\aka = a.k.a.`

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

`\contd`      • `\contd = contd.`

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

`\iff`      • `\iff = iff`

752 `\cmdtxtabr{iff}`

`\stx`      • `\stx = s.t.`

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

`\resp`      • `\resp = resp.`

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

```

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

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

757 %*****

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

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

760 \fi
761 %*****

762 %*****
763 %** Elementary Macros for Math *****
764 %*****
765 \ifmath@
766 %** General Notation *****

\defeq, \seteq ...
767 \DeclareRobustCommand{\defeq}
768   {\mthlrel{\triangleq}}
769 \DeclareRobustCommand{\seteq}
770   {\mthlrel{:=}}
771 %*****

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

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

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

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

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

```

```

793 %%*****%

\dual, \adj, ... ...
794 \DeclareRobustCommand{\dual}[1]
795   {\mth{\overline{#1}}}
796 \DeclareRobustCommand{\adj}[1]
797   {\mth{\mathring{#1}}}
798 \DeclareRobustCommand{\der}[1]
799   {\mth{\widehat{#1}}}
800 \DeclareRobustCommand{\trn}[1]
801   {\mth{\widetilde{#1}}}

\vec ...
802 \DeclareRobustCommand{\vec}[1]
803   {\mth{\mathaccent"017E{#1}}}

804 %%*****%

\enumeration, ... ...
805 \varcmd{enumeration}{\mth}{\{,\}}{\{}}
806 \varcmd{enumerationx}{\mth}{\{;\}}{\{}}

\sequence, ... ...
807 \varcmd{sequence}{\mth}{\left[\{,\}\right]}{\{}}
808 \varcmd{sequence1}{\mth}{\left[\{,\}\right.]}{\{}}
809 \varcmd{sequencer}{\mth}{\left.\{,\}\right]}{\{}}
810 \varcmd{sequencex}{\mth}{\left[\{;\}\right]}{\{}}
811 \varcmd{sequencex1}{\mth}{\left[\{;\}\right.]}{\{}}
812 \varcmd{sequencexr}{\mth}{\left.\{;\}\right]}{\{}}

\tuple, ... ...
813 \varcmd{tuple}{\mth}{\left\langle\{,\}\right\rangle}{\{}}
814 \varcmd{tuple1}{\mth}{\left\langle\{,\}\right.]}{\{}}
815 \varcmd{tupler}{\mth}{\left.\{,\}\right\rangle}{\{}}
816 \varcmd{tuplex}{\mth}{\left\langle\{;\}\right\rangle}{\{}}
817 \varcmd{tuplex1}{\mth}{\left\langle\{;\}\right.]}{\{}}
818 \varcmd{tuplexr}{\mth}{\left.\{;\}\right\rangle}{\{}}

819 %%** Sets *****%

\set, ... ...
820 \DeclareRobustCommand{\set}[2]
821   {\argmid{\left\lbrace}{\argsep{#1}{\,\middle\vert\,}}{#2}{\right\rbrace}}
822 \DeclareRobustCommand{\setl}[1]
823   {\argmid{\left\lbrace}{#1}{\,\right\vert\!}}
824 \DeclareRobustCommand{\setr}[1]
825   {\argmid{\left.\{#1\}}{\right\rbrace}}

\card ...
826 \DeclareRobustCommand{\card}[1]
827   {\mth{\argmid{\lvert}{#1}{\rvert}}}

\pow ...
828 \DeclareRobustCommand{\pow}[1]
829   {\mth{2^{\defval{#1}{\cdot}}}}

\denot ...
830 \DeclareRobustCommand{\denot}[1]
831   {\mth{\argmid{\llbracket}{#1}{\rrbracket}}}

832 %%** Relations *****%

```

```

\emptyrel ...
833 \DeclareRobustCommand{\emptyrel}
834   {\mth{\varnothing}}

835 %%*****%

\dom, \cod, ... ...
836 \DeclareRobustCommand{\dom}
837   {\mthargfun{dom}}
838 \DeclareRobustCommand{\cod}
839   {\mthargfun{cod}}
840 \DeclareRobustCommand{\rng}
841   {\mthargfun{rng}}
842 \DeclareRobustCommand{\img}
843   {\mthargfun{img}}

844 %%*****%

\prj ...
845 \DeclareRobustCommand{\prj}
846   {\mthargfun{prj}}

\rst ...
847 \DeclareRobustCommand{\rst}
848   {\mthlbop{\upharpoonright}}

\cmp ...
849 \DeclareRobustCommand{\cmp}
850   {\mthlbop{\circ}}

851 %%** Functions *****%

\emptyfun ...
852 \DeclareRobustCommand{\emptyfun}
853   {\mth{\varnothing}}

854 %%*****%

\pto, \pmapsto ...
855 \DeclareMathOperator{\pto}
856   {\ensuremath{\rightharpoonup}}
857 \DeclareMathOperator{\pmapsto}
858   {\ensuremath{\mathrel{\raisebox{0.5ex}{\footnotesize$\llcorner$}}}%
859     \kern-1.5ex\rightharpoonup}}

860 %%*****%

\fix, \ifp, ... ...
861 \DeclareRobustCommand{\fix}
862   {\mthfun{fix}}
863 \DeclareRobustCommand{\ifp}
864   {\mthfun{ifp}}
865 \DeclareRobustCommand{\lfp}
866   {\mthfun{lfp}}
867 \DeclareRobustCommand{\gfp}
868   {\mthfun{gfp}}

869 %%*****%

\Aomega, \AOmega ...
870 \DeclareRobustCommand{\Aomega}
871   {\mthargset{\omega}}
872 \DeclareRobustCommand{\AOmega}
873   {\mthargset{\Omega}}

```

```

\Atheta, \Atheta ...
874 \DeclareRobustCommand{\Atheta}
875   {\mthargset{\theta}}
876 \DeclareRobustCommand{\Atheta}
877   {\mthargset{\Theta}}

\Aomicron, ... ...
878 \DeclareRobustCommand{\Aomicron}
879   {\mthargset{\omicron}}
880 \DeclareRobustCommand{\AOmicron}
881   {\mthargset{\Omicron}}

882 %** Numbers *****%

\SetB ...
883 \DeclareRobustCommand{\SetB}
884   {\mthset[mathbb]{B}}

\SetF ...
885 \DeclareRobustCommand{\SetF}
886   {\mthset[mathbb]{F}}

\SetN, ... ...
887 \DeclareRobustCommand{\SetN}
888   {\mthset[mathbb]{N}}
889 \DeclareRobustCommand{\SetNI}[1] []
890   {\SetN[\infty #1]}

\SetZ, ... ...
891 \DeclareRobustCommand{\SetZ}
892   {\mthset[mathbb]{Z}}
893 \DeclareRobustCommand{\SetZI}[1] []
894   {\SetZ[\pm\infty #1]}
895 \DeclareRobustCommand{\SetZPI}[1] []
896   {\SetZ[+\infty #1]}
897 \DeclareRobustCommand{\SetZNI}[1] []
898   {\SetZ[-\infty #1]}

\SetQ, ... ...
899 \DeclareRobustCommand{\SetQ}
900   {\mthset[mathbb]{Q}}
901 \DeclareRobustCommand{\SetQI}[1] []
902   {\SetQ[\pm\infty #1]}
903 \DeclareRobustCommand{\SetQPI}[1] []
904   {\SetQ[+\infty #1]}
905 \DeclareRobustCommand{\SetQNI}[1] []
906   {\SetQ[-\infty #1]}

\SetR, ... ...
907 \DeclareRobustCommand{\SetR}
908   {\mthset[mathbb]{R}}
909 \DeclareRobustCommand{\SetRI}[1] []
910   {\SetR[\pm\infty #1]}
911 \DeclareRobustCommand{\SetRPI}[1] []
912   {\SetR[+\infty #1]}
913 \DeclareRobustCommand{\SetRNI}[1] []
914   {\SetR[-\infty #1]}

\SetC, ... ...
915 \DeclareRobustCommand{\SetC}
916   {\mthset[mathbb]{C}}
917 \DeclareRobustCommand{\SetCI}[1] []
918   {\SetC[\infty #1]}

```

```

919 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\num, ... ...
920 \DeclareRobustCommand{\num}[1]
921   {\mth{[#1]}}
922 \DeclareRobustCommand{\numcc}[2]
923   {\mth{[\argsep{#1}{,}{#2}]}}
924 \DeclareRobustCommand{\numco}[2]
925   {\mth{[\argsep{#1}{,}{#2})]}}
926 \DeclareRobustCommand{\numoc}[2]
927   {\mth{(\argsep{#1}{,}{#2})]}}
928 \DeclareRobustCommand{\numoo}[2]
929   {\mth{(\argsep{#1}{,}{#2}))}}

930 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\floor, \ceil ...
931 \DeclareRobustCommand{\floor}[1]
932   {\mth{\argmid{\left\lfloor}{#1}{\right\rfloor}}}
933 \DeclareRobustCommand{\ceil}[1]
934   {\mth{\argmid{\left\lceil}{#1}{\right\rceil}}}

935 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\arg ...
936 \DeclareRobustCommand{\arg}
937   {\mthfun{arg}}

\evn, \odd ...
938 \DeclareRobustCommand{\evn}
939   {\mthfun{evn}}
940 \DeclareRobustCommand{\odd}
941   {\mthfun{odd}}

\bst, ... ...
942 \DeclareRobustCommand{\bst}
943   {\mthfun{bst}}
944 \DeclareRobustCommand{\argbst}
945   {\mthfun{arg bst}}

\min, \max, ... ...
946 \DeclareRobustCommand{\min}
947   {\mthfun{min}}
948 \DeclareRobustCommand{\max}
949   {\mthfun{max}}
950 \DeclareRobustCommand{\argmin}
951   {\mthfun{arg min}}
952 \DeclareRobustCommand{\argmax}
953   {\mthfun{arg max}}

\inf, \sup ...
954 \DeclareRobustCommand{\inf}
955   {\mthfun{inf}}
956 \DeclareRobustCommand{\sup}
957   {\mthfun{sup}}

958 %** Sequences %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

\emptyseq ...
959 \DeclareRobustCommand{\emptyseq}
960   {\mth{\varepsilon}}

```

```

\fst, \lst ...

961 \DeclareRobustCommand{\fst}
962   {\mthargfun{fst}}
963 \DeclareRobustCommand{\lst}
964   {\mthargfun{lst}}

965 \fi
966 %*****%
967 %*****%
968 %** Macros for Computational-Complexity Classes *****%
969 %*****%
970 \ifcom@

\defcomcls ... to do!

  • \defcomcls{CompClass};

    \CompClass[sub][sup][ext] = COMPCLASSSUPSUBEXT
    \CoCompClass[sub][sup][ext] = CoCOMPCLASSSUPSUBEXT
    \CompClassE[sub][sup][ext] = COMPCLASS-EASYSUPSUBEXT
    \CoCompClassE[sub][sup][ext] = CoCOMPCLASS-EASYSUPSUBEXT
    \CompClassH[sub][sup][ext] = COMPCLASS-HARDSUPSUBEXT
    \CoCompClassH[sub][sup][ext] = CoCOMPCLASS-HARDSUPSUBEXT
    \CompClassC[sub][sup][ext] = COMPCLASS-COMPLETESUPSUBEXT
    \CoCompClassC[sub][sup][ext] = CoCOMPCLASS-COMPLETESUPSUBEXT

    \NCompClass[sub][sup][ext] = NCOMPCLASSSUPSUBEXT
    \CoNCompClass[sub][sup][ext] = CoNCOMPCLASSSUPSUBEXT
    \NCompClassE[sub][sup][ext] = NCOMPCLASS-EASYSUPSUBEXT
    \CoNCompClassE[sub][sup][ext] = CoNCOMPCLASS-EASYSUPSUBEXT
    \NCompClassH[sub][sup][ext] = NCOMPCLASS-HARDSUPSUBEXT
    \CoNCompClassH[sub][sup][ext] = CoNCOMPCLASS-HARDSUPSUBEXT
    \NCompClassC[sub][sup][ext] = NCOMPCLASS-COMPLETESUPSUBEXT
    \CoNCompClassC[sub][sup][ext] = CoNCOMPCLASS-COMPLETESUPSUBEXT

    \UCompClass[sub][sup][ext] = UCOMPCLASSSUPSUBEXT
    \CoUCompClass[sub][sup][ext] = CoUCOMPCLASSSUPSUBEXT
    \UCompClassE[sub][sup][ext] = UCOMPCLASS-EASYSUPSUBEXT
    \CoUCompClassE[sub][sup][ext] = CoUCOMPCLASS-EASYSUPSUBEXT
    \UCompClassH[sub][sup][ext] = UCOMPCLASS-HARDSUPSUBEXT
    \CoUCompClassH[sub][sup][ext] = CoUCOMPCLASS-HARDSUPSUBEXT
    \UCompClassC[sub][sup][ext] = UCOMPCLASS-COMPLETESUPSUBEXT
    \CoUCompClassC[sub][sup][ext] = CoUCOMPCLASS-COMPLETESUPSUBEXT

    \ACompClass[sub][sup][ext] = ACOMPCLASSSUPSUBEXT
    \CoACompClass[sub][sup][ext] = CoACOMPCLASSSUPSUBEXT
    \ACompClassE[sub][sup][ext] = ACOMPCLASS-EASYSUPSUBEXT
    \CoACompClassE[sub][sup][ext] = CoACOMPCLASS-EASYSUPSUBEXT
    \ACompClassH[sub][sup][ext] = ACOMPCLASS-HARDSUPSUBEXT
    \CoACompClassH[sub][sup][ext] = CoACOMPCLASS-HARDSUPSUBEXT
    \ACompClassC[sub][sup][ext] = ACOMPCLASS-COMPLETESUPSUBEXT
    \CoACompClassC[sub][sup][ext] = CoACOMPCLASS-COMPLETESUPSUBEXT

  • \defcomcls{CompClass}{NewClass};

    \CompClass[sub][sup][ext] = NEWCLASSSUPSUBEXT
    \CoCompClass[sub][sup][ext] = CoNEWCLASSSUPSUBEXT
    \CompClassE[sub][sup][ext] = NEWCLASS-EASYSUPSUBEXT
    \CoCompClassE[sub][sup][ext] = CoNEWCLASS-EASYSUPSUBEXT
    \CompClassH[sub][sup][ext] = NEWCLASS-HARDSUPSUBEXT
    \CoCompClassH[sub][sup][ext] = CoNEWCLASS-HARDSUPSUBEXT
    \CompClassC[sub][sup][ext] = NEWCLASS-COMPLETESUPSUBEXT
    \CoCompClassC[sub][sup][ext] = CoNEWCLASS-COMPLETESUPSUBEXT

    \NCompClass[sub][sup][ext] = NNEWCLASSSUPSUBEXT
    \CoNCompClass[sub][sup][ext] = CoNNEWCLASSSUPSUBEXT

```



```

\NCompClassE[sub][sup][ext] = NNEWCLASS-EASYSUPSUBEXT
\CoNCompClassE[sub][sup][ext] = CoNNEWCLASS-EASYSUPSUBEXT
\NCompClassH[sub][sup][ext] = NNEWCLASS-HARDSUPSUBEXT
\CoNCompClassH[sub][sup][ext] = CoNNEWCLASS-HARDSUPSUBEXT
\NCompClassC[sub][sup][ext] = NNEWCLASS-COMPLETESUPSUBEXT
\CoNCompClassC[sub][sup][ext] = CoNNEWCLASS-COMPLETESUPSUBEXT

```

```

\UCompClass[sub][sup][ext] = UNEWCLASSSUPSUBEXT
\CoUCompClass[sub][sup][ext] = CoUNEWCLASSSUPSUBEXT
\UCompClassE[sub][sup][ext] = UNEWCLASS-EASYSUPSUBEXT
\CoUCompClassE[sub][sup][ext] = CoUNEWCLASS-EASYSUPSUBEXT
\UCompClassH[sub][sup][ext] = UNEWCLASS-HARDSUPSUBEXT
\CoUCompClassH[sub][sup][ext] = CoUNEWCLASS-HARDSUPSUBEXT
\UCompClassC[sub][sup][ext] = UNEWCLASS-COMPLETESUPSUBEXT
\CoUCompClassC[sub][sup][ext] = CoUNEWCLASS-COMPLETESUPSUBEXT

```

```

\ACompClass[sub][sup][ext] = ANEWCLASSSUPSUBEXT
\CoACompClass[sub][sup][ext] = CoANEWCLASSSUPSUBEXT
\ACompClassE[sub][sup][ext] = ANEWCLASS-EASYSUPSUBEXT
\CoACompClassE[sub][sup][ext] = CoANEWCLASS-EASYSUPSUBEXT
\ACompClassH[sub][sup][ext] = ANEWCLASS-HARDSUPSUBEXT
\CoACompClassH[sub][sup][ext] = CoANEWCLASS-HARDSUPSUBEXT
\ACompClassC[sub][sup][ext] = ANEWCLASS-COMPLETESUPSUBEXT
\CoACompClassC[sub][sup][ext] = CoANEWCLASS-COMPLETESUPSUBEXT

```

```

971 \newcommandx{\defcomcls}[2][2=]
972   {\defcomclssem{#1}{\defval{#2}{#1}}}%
973   \defcomclssem{#1}{\defval{#2}{#1}}[Co]}
974 \newcommandx{\defcomclsred}[3][3=]
975   {\defcomclsred{#3#1}{#2}{#3}}%
976   \defcomclsred{#3N#1}{#2}{#3N}}%
977   \defcomclsred{#3U#1}{#2}{#3U}}%
978   \defcomclsred{#3A#1}{#2}{#3A}}%
979 \newcommandx{\defcomclscmd}[3][3=]
980   {\defcomclscmd{#1}{#2}{#3}}%
981   \defcomclscmd{#1E}{#2}{#3}[-easy]}%
982   \defcomclscmd{#1H}{#2}{#3}[-hard]}%
983   \defcomclscmd{#1C}{#2}{#3}[-complete]}%
984 \newcommandx{\defcomclscmd}[4][3=, 4=]
985   {\csdef{#1}{\txtcom{#3#2#4}}}%

```

\defcomhrc ... to do!

- \defcomhrc{CompHierarchy};

CompHierarchy[sub][sup][ext] = COMPHIERARCHY<sup>SUP</sup><sub>SUB</sub>EXT

- \defcomhrc{CompHierarchy}[NewHierarchy];

CompHierarchy[sub][sup][ext] = NEWHIERARCHY<sup>SUP</sup><sub>SUB</sub>EXT

```

986 \newcommandx{\defcomhrc}[2][2=]
987   {\csdef{#1}{\txtcom{\defval{#2}{#1}}}}
988   %%*****%

```

\Easy, \Hard, ...

```

989 \cmdtxtcom{Easy}
990 \cmdtxtcom{Hard}
991 \cmdtxtcom{Complete}
992   %%*****%

```

\Time, ...

- \Time[sub][sup][ext] = TIME<sup>SUP</sup><sub>SUB</sub>EXT
- \TimeE[sub][sup][ext] = TIME-EASY<sup>SUP</sup><sub>SUB</sub>EXT
- \TimeH[sub][sup][ext] = TIME-HARD<sup>SUP</sup><sub>SUB</sub>EXT
- \TimeC[sub][sup][ext] = TIME-COMPLETE<sup>SUP</sup><sub>SUB</sub>EXT







```

1003 %%*****%
\PH      • \PH[sub][sup][ext] = PHSUBEXT
1004 \defcomhrc{PH}

...

1005 \fi
1006 %%*****%
1007 %%*****%
1008 %** Macros for Games *****%
1009 %%*****%
1010 \ifgam@
1011 %** Logic Games *****%

\SATG, ... ...
1012 %% Satisfiability Games
1013 \cmdtxtoparname{SATG}[Sat]
1014
1015 %% Validity Games
1016 \cmdtxtoparname{VALG}[Val]
1017
1018 %% Evaluation Games
1019 \cmdtxtoparname{EVLG}[Evl]
1020
1021 %% Synthesis Games
1022 \cmdtxtoparname{SYNG}[Syn]
1023
1024 %% Model-Checking Games
1025 \cmdtxtoparname{MCG}[MC]
1026
1027 %% Ehrenfeucht-Fraisse Games
1028 \cmdtxtoparname{EFG}[EF]

1029 %** Syntax *****%

\PlrSym, \OppSym ...
1030 \newcommand{\plrSym}{E}
1031 \cmdmthsym{Plr}[\plrSym]
1032 \newcommand{\oppsym}{A}
1033 \cmdmthsym{Opp}[\oppsym]

\ArenaName, ... ...
1034 \newcommand{\arenaname}{A}
1035 \usrmthlatupp{Arena}{Name}{name}[\arenaname]

\PosSet, ... ...
1036 \newcommand{\possym}{v}
1037 \newcommand{\posset}{Ps}
1038 \cmdmthsetext{Pos}[\posset][\possym]
1039 \cmdmthsymelm{ipos}[\possym_{I}]
1040 \cmdmthsymelm{fpos}[\possym_{F}]
1041 \cmdmthset{PPos}[\posset_{\PlrSym}]
1042 \cmdmthsymelm{ppos}[\possym_{\PlrSym}]
1043 \cmdmthset{OPos}[\posset_{\OppSym}]
1044 \cmdmthsymelm{opos}[\possym_{\OppSym}]

\PlrFun ...
1045 \newcommand{\plrFun}{pl}
1046 \cmdmthfun{plr}[\plrFun]

\MovRel ...
1047 \newcommand{\movrel}{Mv}
1048 \cmdmthrel{Mov}[\movrel]

```

```

\GameName, ... ...
1049 \newcommand{\gamename}{\Game}
1050 \usrnthlatupp{Game}{Name}{name}[\gamename]

\WinSet ...
1051 \newcommand{\winset}{\Wn}
1052 \cmdmthset{Win}[\winset]

\ObsSet, \obsFun ...
1053 \newcommand{\obsset}{\Ob}
1054 \cmdmthset{Obs}[\obsset]
1055 \cmdmthfun{obs}

1056 %** Semantics ****

\PthSet, \pthFun ...
1057 \newcommand{\pthsym}{\pi}
1058 \newcommand{\pthset}{Pth}
1059 \cmdmthsetext{Pth}[\pthset][\pthsym]
1060 \cmdmthfun{pth}

\HstSet, ... ...
1061 \newcommand{\hstsym}{\rho}
1062 \newcommand{\hstset}{Hst}
1063 \cmdmthsetext{Hst}[\hstset][\hstsym]
1064 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1065 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1066 \cmdmthset{OHst}[\hstset_{\OppSym}]
1067 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1068 \cmdmthfun{hst}

\PlaySet, \playFun ...
1069 \newcommand{\playsym}{\pi}
1070 \newcommand{\playset}{Play}
1071 \cmdmthsetext{Play}[\playset][\playsym]
1072 \cmdmthfun{play}

\StrSet, ... ...
1073 \newcommand{\strsym}{\sigma}
1074 \newcommand{\strset}{Str}
1075 \cmdmthsetext{Str}[\strset][\strsym]
1076 \cmdmthset{PStr}[\strset_{\PlrSym}]
1077 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1078 \cmdmthset{OStr}[\strset_{\OppSym}]
1079 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1080 \newcommand{\prfsym}{\xi}
1081 \newcommand{\prfset}{Prf}
1082 \cmdmthsetext{Prf}[\prfset][\prfsym]

\preFun, \sucFun ...
1083 \newcommand{\prefun}{pre}
1084 \cmdmthoargfun{pre}[\prefun]
1085 \newcommand{\sucfun}{suc}
1086 \cmdmthoargfun{suc}[\sucfun]

\entFun, \escFun ...
1087 \newcommand{\entfun}{ent}
1088 \cmdmthoargfun{ent}[\entfun]
1089 \newcommand{\escfun}{esc}
1090 \cmdmthoargfun{esc}[\escfun]

```

```

\intFun, \outFun ...
1091 \newcommand{\intfun}{int}
1092 \cmdmthoargfun{int}[\intfun]
1093 \newcommand{\outfun}{out}
1094 \cmdmthoargfun{out}[\outfun]

\atrFun, \rchFun ...
1095 \newcommand{\atrfun}{atr}
1096 \cmdmthoargfun{atr}[\atrfun]
1097 \newcommand{\rchfun}{rch}
1098 \cmdmthoargfun{rch}[\rchfun]

\liftFun ...
1099 \newcommand{\liftfun}{lift}
1100 \cmdmthoargfun{lift}[\liftfun]

\solFun ...
1101 \newcommand{\solfun}{sol}
1102 \cmdmthoargfun{sol}[\solfun]

1103 %** Qualitative Games on Graph *****%%

\BG, ... ...
1104 %% Buchi Games
1105 \cmdtxtoparname{BG}
1106
1107 %% Co-Buchi Games
1108 \cmdtxtoparname{CG}
1109
1110 %% Parity Games
1111 \cmdtxtoparname{PG}
1112
1113 %% Rabin Games
1114 \cmdtxtoparname{RG}
1115
1116 %% Streett Games
1117 \cmdtxtoparname{SG}
1118
1119 %% Muller Games
1120 \cmdtxtoparname{MG}

1121 %** Syntax *****%%

\EvnSym, \OddSym ...
1122 \newcommand{\evnsym}{0}
1123 \cmdmthsym{Evnsym}[\evnsym]
1124 \newcommand{\oddsym}{1}
1125 \cmdmthsym{Oddsym}[\oddsym]

\PrtSet, \prtFun ...
1126 \newcommand{\prtsym}{p}
1127 \newcommand{\prtset}{Pr}
1128 \cmdmthsetext{Prt}[\prtset][\prtsym]
1129 \cmdmthfun{prt}[pr]

1130 %** Semantics *****%%
...
1131 %** Quantitative Games on Graph *****%%

\EG, ... ...
1132 %% Energy Games
1133 \cmdtxtoparname{EG}

```

```

1134
1135 %% Mean-Payoff Games
1136 \cmdtxttoparname{MPG}
1137
1138 %% Discounted-Payoff Games
1139 \cmdtxttoparname{DPG}

1140 %** Syntax *****%
```

\MaxSym, \MinSym ...

```

1141 \newcommand{\maxsym}{\oplus}
1142 \cmdmthsym{Max}[\maxsym]
1143 \newcommand{\minsym}{\boxminus}
1144 \cmdmthsym{Min}[\minsym]
```

\WghSet, \wghFun ...

```

1145 \newcommand{\wghsym}{w}
1146 \newcommand{\wghset}{Wg}
1147 \cmdmthsetext{Wgh}[\wghset][\wghsym]
1148 \cmdmthfun{wgh}[wg]
```

```

1149 %** Semantics *****%
```

...

```

1150 \fi
1151 %*****%
1152 %*****%
1153 %** Macros for Logics *****%
1154 %*****%
1155 \iflog@
1156 %** Propositional Logics *****%
```

\BF, \QBF, ...

```

1157 % Boolean Formulae
1158 \cmdtxttoparname{BF}
1159
1160 % Quantified Boolean Formulae
1161 \DeclareRobustCommand{\QBF}
1162   {\{\txtname{Q}\}\BF}
1163 \DeclareRobustCommand{\EBF}
1164   {\ensuremath{\exists}\BF}
1165 \DeclareRobustCommand{\UBF}
1166   {\ensuremath{\forall}\BF}
```

```

1167 %** Syntax *****%
```

\LogSig, ...

```

1168 \newcommand{\logsig}{L}
1169 \usrmthlatupp{Log}{Sig}{sig}[\logsig]
```

\Tt, \Ff ...

```

1170 \newcommand{\ttsym}{\top}
1171 \usrmth{Tt}{\sym}[\ttsym]
1172 \newcommand{\ffsym}{\bot}
1173 \usrmth{Ff}{\sym}[\ffsym]
```

\LNeg, \LNot ...

```

1174 \newcommand{\lnegsym}{\neg}
1175 \usrmth{LNeg}{\luop}[\lnegsym]
1176 \newcommand{\lnotsym}{\sim}
1177 \usrmth{LNot}{\luop}[\lnotsym]
```



```

\LCon, \LDis ...
1178 \newcommand{\lconsym}{\land}
1179 \usrmth{LCon}{-}{\lbp}{\lconsym}
1180 \newcommand{\ldissym}{\lor}
1181 \usrmth{LDis}{-}{\lbp}{\ldissym}

\LImp, \LCoi ...
1182 \newcommand{\limpsym}{\rightarrow}
1183 \usrmth{LImp}{-}{\lbp}{\limpsym}
1184 \newcommand{\lcoisym}{\leftrightharpoonup}
1185 \usrmth{LCoi}{-}{\lbp}{\lcoisym}

\LExs, \LAll ...
1186 \newcommand{\lexssym}{\exists}
1187 \usrmth{LExs}{-}{\luop}{\lexssym}
1188 \newcommand{\lallsym}{\forall}
1189 \usrmth{LAll}{-}{\luop}{\lallsym}

\APSet, ... ...
1190 \newcommand{\apsym}{p}
1191 \newcommand{\apset}{AP}
1192 \cmdmthsetext{AP}{\apset}[\apsym]
1193 \cmdmthfun{ap}{\usrmth{ap}{-}{argfun}}

\sub ...
1194 \usrmth{sub}{-}{argfun}

\Cnt, \Qnt, \Sym ...
1195 \usrmth{Cnt}{-}{sym}[C]
1196 \usrmth{Qnt}{-}{sym}[Q]
1197 \usrmth{Sym}{-}{sym}[\odot]

\QAE, \QEA ...
1198 \usrmth{QAE}{-}{sym}[\forall\exists]
1199 \usrmth{QEA}{-}{sym}[\exists\forall]

\QntSet, ... ...
1200 \newcommand{\qntsym}{\wp}
1201 \newcommand{\qntset}{Qn}
1202 \cmdmthsetext{Qnt}{\qntset}[\qntsym]

\free, \bound ...
1203 \usrmth{free}{-}{argfun}
1204 \usrmth{bound}{-}{argfun}

\dep, \alt ...
1205 \usrmth{dep}{-}{argfun}
1206 \usrmth{alt}{-}{argfun}

\cnf, \dnf, ... ...
1207 \cmdtxtabr{cnf}
1208 \cmdtxtabr{dnf}
1209 \cmdtxtabr{pnf}
1210 \cmdtxtabr{nnf}

1211 %%** Semantics *****%%

\LogStr, ... ...
1212 \newcommand{\logstr}{L}
1213 \usrmthlatupp{Log}{Str}{str}[\logstr]

```

```

\ValSet, ... ...
1214 \newcommand{\valsym}{\xi}
1215 \newcommand{\valset}{Val}
1216 \cmdmthsetext{Val}[\valset][\valsym]

\AsgSet, ... ...
1217 \newcommand{\asgsym}{\chi}
1218 \newcommand{\asgset}{Asg}
1219 \cmdmthsetext{Asg}[\asgset][\asgsym]

1220 %** First-Order Logics I *****%%

\FOL, ... ...
1221 % First-Order Logic
1222 \cmdtxttoparname{FOL}[Fol]
1223 \cmdtxttoparname{FO}[FO]
1224
1225 % Monadic First-Order Logic
1226 \DeclareRobustCommand{\MFOL}
1227   {\{\txtname{M}\}\FOL}
1228 \DeclareRobustCommand{\MFO}
1229   {\{\txtname{M}\}\FO}

1230 %** Syntax *****%%

\VarSig, ... ...
1231 \newcommand{\varsig}{V}
1232 \usrmthlatupp{Var}{Sig}{sig}[\varsig]
1233 \newcommand{\varsym}{x}
1234 \newcommand{\varset}{Vr}
1235 \cmdmthsetext{Var}[\varset][\varsym]
1236 \usrmth{var}{\}{argfun}[vr]
1237 \cmdmthfun{dim}[dm]\usrmth{dim}{\}{argfun}[dm]

\ConSig, ... ...
1238 \newcommand{\consig}{C}
1239 \usrmthlatupp{Con}{Sig}{sig}[\consig]
1240 \newcommand{\consym}{c}
1241 \newcommand{\conset}{Cn}
1242 \cmdmthsetext{Con}[\conset][\consym]
1243 \usrmth{con}{\}{argfun}[cn]

\FunSig, ... ...
1244 \newcommand{\funsig}{F}
1245 \usrmthlatupp{Fun}{Sig}{sig}[\funsig]
1246 \newcommand{\funsym}{f}
1247 \newcommand{\funset}{Fn}
1248 \cmdmthsetext{Fun}[\funset][\funsym]
1249 \usrmth{fun}{\}{argfun}[fn]
1250 \cmdmthfun{art}[ar]\usrmth{art}{\}{argfun}[ar]

\TerSig, ... ...
1251 \newcommand{\tersig}{T}
1252 \usrmthlatupp{Ter}{Sig}{sig}[\tersig]
1253 \newcommand{\tersym}{t}
1254 \newcommand{\terset}{Tr}
1255 \cmdmthsetext{Ter}[\terset][\tersym]
1256 \usrmth{ter}{\}{argfun}

\RelSig, ... ...
1257 \newcommand{\relsig}{R}
1258 \usrmthlatupp{Rel}{Sig}{sig}[\relsig]
1259 \newcommand{\relsym}{r}

```

```

1260 \newcommand{\relset}{Rl}
1261 \cmdmthsetext{Rel}[\relset][\relsym]
1262 \usrmth{rel}{\}{argfun}[rl]

\skm ...
1263 \usrmth{skm}{\}{argfun}

1264 %** Semantics *****%%

\ConStr, ... ...
1265 \newcommand{\constr}{C}
1266 \usrmthlatupp{Con}{Str}{str}[\constr]

\FunStr, ... ...
1267 \newcommand{\funstr}{F}
1268 \usrmthlatupp{Fun}{Str}{str}[\funstr]

\TerStr, ... ...
1269 \newcommand{\terstr}{T}
1270 \usrmthlatupp{Ter}{Str}{str}[\terstr]

\RelStr, ... ...
1271 \newcommand{\relstr}{R}
1272 \usrmthlatupp{Rel}{Str}{str}[\relstr]

1273 %** First-Order Logics II *****%%

\DF, \IF, ... ...
1274 % Dependence-Friendly Logic
1275 \cmdtxtoparname{DF}
1276
1277 % Independence-Friendly Logic
1278 \cmdtxtoparname{IF}
1279
1280 % Dependence/Independence-Friendly Logic
1281 \cmdtxtoparname{DIF}
1282
1283 % Dependence Logic
1284 \cmdtxtoparname{DL}
1285
1286 % Team Logic
1287 \cmdtxtoparname{TL}
1288
1289 % Alternating Dependence-Friendly Logic
1290 \cmdtxtoparname{ADF}
1291
1292 % Alternating Independence-Friendly Logic
1293 \cmdtxtoparname{AIF}
1294
1295 % Alternating Dependence/Independence-Friendly Logic
1296 \cmdtxtoparname{ADIF}

...

1297 %** Syntax *****%%

\LEExs, \LAA11 ...
1298 \newcommand{\leexssym}{\Sigma}
1299 \usrmth{LEExs}{\}{luop}[\leexssym]
1300 \newcommand{\laallsym}{\Pi}
1301 \usrmth{LAA11}{\}{luop}[\laallsym]

1302 %** Semantics *****%%

```

```

...
1303 %** Second-Order Logics I *****%%
\SOL, ... ...
1304 % Second-Order Logic
1305 \cmdtxttoparname{SOL}[Sol]
1306 \cmdtxttoparname{SO}
1307
1308 % Weak Second-Order Logic
1309 \DeclareRobustCommand{\WSOL}
1310   {\{\txtname{W}\}\SOL}
1311 \DeclareRobustCommand{\WSO}
1312   {\{\txtname{W}\}\SO}
1313
1314 % coWeak Second-Order Logic
1315 \DeclareRobustCommand{\coWSOL}
1316   {\{\txtname{coW}\}\SOL}
1317 \DeclareRobustCommand{\coWSO}
1318   {\{\txtname{coW}\}\SO}
1319
1320 % Monadic Second-Order Logic
1321 \DeclareRobustCommand{\MSOL}
1322   {\{\txtname{M}\}\SOL}
1323 \DeclareRobustCommand{\MSO}
1324   {\{\txtname{M}\}\SO}
1325
1326 % Weak Monadic Second-Order Logic
1327 \DeclareRobustCommand{\WMSOL}
1328   {\{\txtname{W}\}\MSOL}
1329 \DeclareRobustCommand{\WMSO}
1330   {\{\txtname{W}\}\MSO}
1331
1332 % coWeak Monadic Second-Order Logic
1333 \DeclareRobustCommand{\coWMSOL}
1334   {\{\txtname{coW}\}\MSOL}
1335 \DeclareRobustCommand{\coWMSO}
1336   {\{\txtname{coW}\}\MSO}
1337 %** Syntax *****%%
\FVarSet, ... ...
1338 \newcommand{\fvarsym}{x}
1339 \newcommand{\fvarset}{FVr}
1340 \cmdmthsetext{FVar}[\fvarset][\fvarsym]
\SVarSet, ... ...
1341 \newcommand{\svarsym}{X}
1342 \newcommand{\svarset}{SVr}
1343 \cmdmthsetext{SVar}[\svarset][\svarsym]
1344 %** Semantics *****%%
...
1345 %** Second-Order Logics II *****%%
\TL, \PL, ... ...
1346 % Tree Logic
1347 \cmdtxttoparname{TL}
1348
1349 % Weak Tree Logic
1350 \DeclareRobustCommand{\WTL}
1351   {\{\txtname{W}\}\TL}
1352

```

```

1353 % coWeak Tree Logic
1354 \DeclareRobustCommand{\coWTL}
1355   {\txtname{coW}}\TL}
1356
1357 % Monadic Tree Logic
1358 \DeclareRobustCommand{\MTL}
1359   {\txtname{M}}\TL}
1360
1361 % Weak Monadic Tree Logic
1362 \DeclareRobustCommand{\WMTL}
1363   {\txtname{W}}\MTL}
1364
1365 % coWeak Monadic Tree Logic
1366 \DeclareRobustCommand{\coWMTL}
1367   {\txtname{coW}}\MTL}
1368
1369 % Path Logic
1370 \cmdtxttoparname{PL}
1371
1372 % Weak Path Logic
1373 \DeclareRobustCommand{\WPL}
1374   {\txtname{W}}\PL}
1375
1376 % coWeak Path Logic
1377 \DeclareRobustCommand{\coWPL}
1378   {\txtname{coW}}\PL}
1379
1380 % Monadic Path Logic
1381 \DeclareRobustCommand{\MPL}
1382   {\txtname{M}}\PL}
1383
1384 % Weak Monadic Path Logic
1385 \DeclareRobustCommand{\WMPL}
1386   {\txtname{W}}\MPL}
1387
1388 % coWeak Monadic Path Logic
1389 \DeclareRobustCommand{\coWMPL}
1390   {\txtname{coW}}\MPL}
1391
1391 %** Syntax *****%
...
1392 %** Semantics *****%
...
1393 %** Modal Logics I *****%

\ML, \QML, ... ...
1394 % Modal Logic
1395 \cmdtxttoparname{ML}
1396
1397 % Quantified Modal Logic
1398 \DeclareRobustCommand{\QML}
1399   {\txtname{Q}}\ML}
1400 \DeclareRobustCommand{\EML}
1401   {\ensuremath{\exists}\ML}
1402 \DeclareRobustCommand{\UML}
1403   {\ensuremath{\forall}\ML}
1404
1404 %** Syntax *****%

\Opr ...
1405 \usrmth{Opr}{-}{sym}[Op]

```

```

\DMod, \BMod ...
1406 \usrmth{DMod}{-}{sym}[Diamond]
1407 \usrmth{BMod}{-}{sym}[Box]

\Exs, \All ...
1408 \DeclareRobustCommand{\Exs}[1]
1409   {\mth{\defval{\argmid{\langle}{#1}{rangle}}{\DMod}}}
1410 \DeclareRobustCommand{\All}[1]
1411   {\mth{\defval{\argmid{\left[]}{#1}{right}}}{\BMod}}}

1412 %%** Semantics *****%%

\KrpStr, ... ...
1413 \newcommand{\krpstr}{K}
1414 \usrmthlatupp{Krp}{Str}{str}[\krpstr]

\WrlSet, ... ...
1415 \newcommand{\wrlsym}{w}
1416 \newcommand{\wrlset}{W}
1417 \cmdmthsetext{Wrl}[\wrlset][\wrlsym]
1418 \cmdmthsymelm{iwrl}[\wrlsym_{I}]

\AccRel, \TrnRel ...
1419 \newcommand{\accsym}{R}
1420 \cmdmthrel{Acc}[\accsym]
1421 \cmdmthrel{Trn}[\accsym]

\labFun ...
1422 \newcommand{\labsym}{\lambda}
1423 \cmdmthfun{lab}[\labsym]

\PthSet, \pthFun ...
1424 \providecommand{\pthsym}{\pi}
1425 \providecommand{\pthset}{Pth}
1426 \cmdmthsetext{Pth}[\pthset][\pthsym]
1427 \cmdmthfun{pth}

1428 %%** Modal Logics II *****%%

\MC, \QMC, ... ...
1429 % Mu Calculus
1430 \cmdtxttoparname{MC}[\ensuremath{\mu}-Calculus]
1431
1432 % Quantified Modal Logic
1433 \DeclareRobustCommand{\QMC}
1434   {\{\txtname{Q}\}\MC}
1435 \DeclareRobustCommand{\EMC}
1436   {\ensuremath{\exists}\MC}
1437 \DeclareRobustCommand{\UMC}
1438   {\ensuremath{\forall}\MC}

1439 %%** Syntax *****%%
...
1440 %%** Semantics *****%%
...
1441 %%** Temporal Logics I *****%%

```

```

\PTL, \LTL, ... ...
1442 % Propositional Temporal Logic
1443 \cmdtxttoparname{PTL}
1444
1445 % Quantified Propositional Temporal Logic
1446 \DeclareRobustCommand{\QPTL}
1447   {\{\txtrname{Q}\}\PTL}
1448 \DeclareRobustCommand{\EPTL}
1449   {\ensuremath{\exists}\PTL}
1450 \DeclareRobustCommand{\UPTL}
1451   {\ensuremath{\forall}\PTL}
1452
1453 % Linear Temporal Logic
1454 \cmdtxttoparname{LTL}
1455
1456 % Quantified Linear Temporal Logic
1457 \DeclareRobustCommand{\QLTL}
1458   {\{\txtrname{Q}\}\LTL}
1459 \DeclareRobustCommand{\ELTL}
1460   {\ensuremath{\exists}\LTL}
1461 \DeclareRobustCommand{\ULTL}
1462   {\ensuremath{\forall}\LTL}

1463 %** Syntax *****%%

\X, ... ...
1464 \usrmth{X}{-}{sym}[X\,]
1465 \usrmth{F}{-}{sym}[F\,]
1466 \usrmth{G}{-}{sym}[G\,]
1467 \usrmth{U}{-}{sym}[\,U\,]
1468 \usrmth{R}{-}{sym}[\,R\,]

\Y, ... ...
1469 \usrmth{Y}{-}{sym}[G\,]
1470 \usrmth{P}{-}{sym}[P\,]\let\SavePildcrow\P
1471 \usrmth{H}{-}{sym}[H\,]\let\SaveDoubleAcute\H
1472 \usrmth{S}{-}{sym}[\,S\,]\let\SaveSectionSymbol\S
1473 \usrmth{B}{-}{sym}[\,B\,]

1474 %** Semantics *****%%

...

1475 %** Temporal Logics II *****%%

\PDL, \CTL, ... ...
1476
1477 % Propositional Dynamic Logic
1478 \cmdtxttoparname{PDL}
1479
1480 % Computation Tree Logic
1481 \cmdtxttoparname{CTL}
1482
1483 % Weak Computation Tree Logic
1484 \DeclareRobustCommand{\WCTL}
1485   {\{\txtrname{W}\}\CTL}
1486
1487 % Quantified Computation Tree Logic
1488 \DeclareRobustCommand{\QCTL}
1489   {\{\txtrname{Q}\}\CTL}
1490 \DeclareRobustCommand{\ECTL}
1491   {\ensuremath{\exists}\CTL}
1492 \DeclareRobustCommand{\UCTL}
1493   {\ensuremath{\forall}\CTL}

```

```

1494
1495 % Improved Computation Tree Logic
1496 \cmdtxttoparname{CTLP}[CTL$^{+}$]
1497
1498 % Weak Improved Computation Tree Logic
1499 \DeclareRobustCommand{\WCTLP}
1500   {\{\txtrname{W}\}\CTLP}
1501
1502 % Quantified Improved Computation Tree Logic
1503 \DeclareRobustCommand{\QCTLP}
1504   {\{\txtrname{Q}\}\CTLP}
1505 \DeclareRobustCommand{\ECTLP}
1506   {\ensuremath{\exists}\CTLP}
1507 \DeclareRobustCommand{\UCTLP}
1508   {\ensuremath{\forall}\CTLP}
1509
1510 % Full Computation Tree Logic
1511 \cmdtxttoparname{CTLS}[CTL*]
1512
1513 % Weak Full Computation Tree Logic
1514 \DeclareRobustCommand{\WCTLS}
1515   {\{\txtrname{W}\}\CTLS}
1516
1517 % Quantified Full Computation Tree Logic
1518 \DeclareRobustCommand{\QCTLS}
1519   {\{\txtrname{Q}\}\CTLS}
1520 \DeclareRobustCommand{\ECTLS}
1521   {\ensuremath{\exists}\CTLS}
1522 \DeclareRobustCommand{\UCTLS}
1523   {\ensuremath{\forall}\CTLS}
1524 %** Syntax *****%

\E, \A ...
1525 \usrmth{E}{-}{sym}
1526 \usrmth{A}{-}{sym}

1527 %** Semantics *****%
...
1528 %** Strategic Logics I *****%

\ATL, ... ...
1529 % Alternating Temporal Logic
1530 \cmdtxttoparname{ATL}
1531
1532 % Weak Alternating Tree Logic
1533 \DeclareRobustCommand{\WATL}
1534   {\{\txtrname{W}\}\ATL}
1535
1536 % Quantified Alternating Temporal Logic
1537 \DeclareRobustCommand{\QATL}
1538   {\{\txtrname{Q}\}\ATL}
1539 \DeclareRobustCommand{\EATL}
1540   {\ensuremath{\exists}\ATL}
1541 \DeclareRobustCommand{\UATL}
1542   {\ensuremath{\forall}\ATL}
1543
1544 % Improved Alternating Temporal Logic
1545 \cmdtxttoparname{ATLP}[ATL$^{+}$]
1546
1547 % Weak Improved Alternating Tree Logic
1548 \DeclareRobustCommand{\WATLP}
1549   {\{\txtrname{W}\}\ATLP}

```



```

1550
1551 % Quantified Improved Alternating Temporal Logic
1552 \DeclareRobustCommand{\QATLP}
1553   {\textrm{Q}}\ATLP}
1554 \DeclareRobustCommand{\EATLP}
1555   {\ensuremath{\exists}\ATLP}
1556 \DeclareRobustCommand{\UATLP}
1557   {\ensuremath{\forall}\ATLP}
1558
1559 % Full Alternating Temporal Logic
1560 \cmdtxtopname{ATLS}[ATL*]
1561
1562 % Weak Full Alternating Tree Logic
1563 \DeclareRobustCommand{\WATLS}
1564   {\textrm{W}}\ATLS}
1565
1566 % Quantified Full Alternating Temporal Logic
1567 \DeclareRobustCommand{\QATLS}
1568   {\textrm{Q}}\ATLS}
1569 \DeclareRobustCommand{\EATLS}
1570   {\ensuremath{\exists}\ATLS}
1571 \DeclareRobustCommand{\UATLS}
1572   {\ensuremath{\forall}\ATLS}
1573 %** Syntax *****%

\EExs, \AA11 ...
1574 \DeclareRobustCommand{\EExs}[1]
1575   {\mth{\argmid{\langle!\rangle}{\defval{#1}{\emptyset}}{\rangle!\rangle}}
1576 \DeclareRobustCommand{\AA11}[1]
1577   {\mth{\argmid{\left[\left[{\defval{#1}{\emptyset}}{\right]\right]}}}
1578 %** Semantics *****%

\CGS ...
1579 \cmdtxtname{CGS}

\CGSStr, ... ...
1580 \newcommand{\cgsstr}{G}
1581 \usrmthlatupp{CGS}{Str}{str}[\cgsstr]

\AgnSet, ... ...
1582 \newcommand{\agnsym}{a}
1583 \newcommand{\agnset}{Ag}
1584 \cmdmthsetext{Agn}{\agnset}[\agnsym]

\PosSet, ... ...
1585 \providecommand{\possym}{v}
1586 \providecommand{\posset}{Ps}
1587 \cmdmthsetext{Pos}{\posset}[\possym]
1588 \cmdmthsymelm{ipos}[\possym_{I}]
1589 \cmdmthsymelm{fpos}[\possym_{F}]
1590 \cmdmthset{PPos}[\posset_{PlrSym}]
1591 \cmdmthsymelm{ppos}[\possym_{PlrSym}]
1592 \cmdmthset{OPos}[\posset_{OppSym}]
1593 \cmdmthsymelm{opos}[\possym_{OppSym}]

\SttSet, ... ...
1594 \newcommand{\sttsym}{s}
1595 \newcommand{\sttset}{St}
1596 \cmdmthsetext{Stt}{\sttset}[\sttsym]
1597 \cmdmthset{IStt}[\sttset_{I}]
1598 \cmdmthsymelm{istt}[\sttsym_{I}]
1599 \cmdmthset{FStt}[\sttset_{F}]
1600 \cmdmthsymelm{fstt}[\sttsym_{F}]

```

```

\ActSet, ... ...
1601 \newcommand{\actsym}{c}
1602 \newcommand{\actset}{Ac}
1603 \cmdmthsetext{Act}[\actset][\actsym]

\DecSet, ... ...
1604 \newcommand{\decsym}{d}
1605 \newcommand{\decset}{Dc}
1606 \cmdmthsetext{Dec}[\decset][\decsym]

\movFun ...
1607 \newcommand{\movsym}{\tau}
1608 \cmdmthfun{mov}[\movsym]

\HstSet, ... ...
1609 \providecommand{\hstsym}{\rho}
1610 \providecommand{\hstset}{Hst}
1611 \cmdmthsetext{Hst}[\hstset][\hstsym]
1612 \cmdmthset{PHst}[\hstset_{\PlrSym}]
1613 \cmdmthsymelm{phst}[\hstsym_{\PlrSym}]
1614 \cmdmthset{OHst}[\hstset_{\OppSym}]
1615 \cmdmthsymelm{ohst}[\hstsym_{\OppSym}]
1616 \cmdmthfun{hst}

\PlaySet, \playFun ...
1617 \providecommand{\playsym}{\pi}
1618 \providecommand{\playset}{Play}
1619 \cmdmthsetext{Play}[\playset][\playsym]
1620 \cmdmthfun{play}

\StrSet, ... ...
1621 \providecommand{\strsym}{\sigma}
1622 \providecommand{\strset}{Str}
1623 \cmdmthsetext{Str}[\strset][\strsym]
1624 \cmdmthset{PStr}[\strset_{\PlrSym}]
1625 \cmdmthsymelm{pstr}[\strsym_{\PlrSym}]
1626 \cmdmthset{OStr}[\strset_{\OppSym}]
1627 \cmdmthsymelm{ostr}[\strsym_{\OppSym}]

\PrfSet, \prfFun ...
1628 \providecommand{\prfsym}{\xi}
1629 \providecommand{\prfset}{Prf}
1630 \cmdmthsetext{Prf}[\prfset][\prfsym]

1631 %** Strategic Logics II *****%

\SL, ... ...
1632 % Strategy Logic
1633 \cmdtxttoparname{SL}
1634
1635 \DeclareRobustCommand{\ESL}
1636   {\ensuremath{\exists}\SL}
1637 \DeclareRobustCommand{\USL}
1638   {\ensuremath{\forall}\SL}
1639
1640 \DeclareRobustCommand{\FSL}
1641   {\{\textname{F}\}\SL}
1642
1643 \DeclareRobustCommand{\EFSL}
1644   {\ensuremath{\exists}\FSL}
1645 \DeclareRobustCommand{\UFSL}
1646   {\ensuremath{\forall}\FSL}
1647

```

```

1648 % One-Goal Strategy Logic
1649 \DeclareRobustCommandx{\OGSL}[3][1=, 2=, 3=]
1650   {\SL[#1][#2][lg\arglef{,}{#3}]}
1651
1652 \DeclareRobustCommand{\EOGSL}
1653   {\ensuremath{\exists}\OGSL}
1654 \DeclareRobustCommand{\UOGSL}
1655   {\ensuremath{\forall}\OGSL}
1656
1657 \DeclareRobustCommand{\FOGSL}
1658   {\{\txname{F}\}\OGSL}
1659
1660 \DeclareRobustCommand{\EFOGSL}
1661   {\ensuremath{\exists}\FOGSL}
1662 \DeclareRobustCommand{\UFOGSL}
1663   {\ensuremath{\forall}\FOGSL}
1664
1665 % Conjunctive-Goal Strategy Logic
1666 \DeclareRobustCommandx{\CGSL}[3][1=, 2=, 3=]
1667   {\SL[#1][#2][cg\arglef{,}{#3}]}
1668
1669 \DeclareRobustCommand{\ECGSL}
1670   {\ensuremath{\exists}\CGSL}
1671 \DeclareRobustCommand{\UCGSL}
1672   {\ensuremath{\forall}\CGSL}
1673
1674 \DeclareRobustCommand{\FCGSL}
1675   {\{\txname{F}\}\CGSL}
1676
1677 \DeclareRobustCommand{\EFCGSL}
1678   {\ensuremath{\exists}\FCGSL}
1679 \DeclareRobustCommand{\UFCGSL}
1680   {\ensuremath{\forall}\FCGSL}
1681
1682 % Disjunctive-Goal Strategy Logic
1683 \DeclareRobustCommandx{\DGS}[3][1=, 2=, 3=]
1684   {\SL[#1][#2][dg\arglef{,}{#3}]}
1685
1686 \DeclareRobustCommand{\EDGS}
1687   {\ensuremath{\exists}\DGS}
1688 \DeclareRobustCommand{\UDGS}
1689   {\ensuremath{\forall}\DGS}
1690
1691 \DeclareRobustCommand{\FDGS}
1692   {\{\txname{F}\}\DGS}
1693
1694 \DeclareRobustCommand{\EFDGS}
1695   {\ensuremath{\exists}\FDGS}
1696 \DeclareRobustCommand{\UFDGS}
1697   {\ensuremath{\forall}\FDGS}
1698
1699 % Alternating-Goal Strategy Logic
1700 \DeclareRobustCommandx{\AGSL}[3][1=, 2=, 3=]
1701   {\SL[#1][#2][ag\arglef{,}{#3}]}
1702
1703 \DeclareRobustCommand{\EAGSL}
1704   {\ensuremath{\exists}\AGSL}
1705 \DeclareRobustCommand{\UAGSL}
1706   {\ensuremath{\forall}\AGSL}
1707
1708 \DeclareRobustCommand{\FAGSL}
1709   {\{\txname{F}\}\AGSL}
1710

```

```

1711 \DeclareRobustCommand{\EFAGSL}
1712   {\ensuremath{\exists}\FAGSL}
1713 \DeclareRobustCommand{\UFAGSL}
1714   {\ensuremath{\forall}\FAGSL}
1715
1716 % Extended-Goal Strategy Logic
1717 \DeclareRobustCommandx{\EGSL}[3][1=, 2=, 3=]
1718   {\SL[#1][#2][eg\arglef{,}{#3}]}
1719
1720 \DeclareRobustCommand{\EEGSL}
1721   {\ensuremath{\exists}\EGSL}
1722 \DeclareRobustCommand{\UEGSL}
1723   {\ensuremath{\forall}\EGSL}
1724
1725 \DeclareRobustCommand{\FEGSL}
1726   {\{\txtname{F}\}\xGSL}
1727
1728 \DeclareRobustCommand{\EFEGSL}
1729   {\ensuremath{\exists}\FEGSL}
1730 \DeclareRobustCommand{\UFEGSL}
1731   {\ensuremath{\forall}\FEGSL}
1732
1733 % Boolean-Goal Strategy Logic
1734 \DeclareRobustCommandx{\BGSL}[3][1=, 2=, 3=]
1735   {\SL[#1][#2][bg\arglef{,}{#3}]}
1736
1737 \DeclareRobustCommand{\EBGSL}
1738   {\ensuremath{\exists}\BGSL}
1739 \DeclareRobustCommand{\UBGSL}
1740   {\ensuremath{\forall}\BGSL}
1741
1742 \DeclareRobustCommand{\FBGSL}
1743   {\{\txtname{F}\}\xGSL}
1744
1745 \DeclareRobustCommand{\EFBGSL}
1746   {\ensuremath{\exists}\FBGSL}
1747 \DeclareRobustCommand{\UFBGSL}
1748   {\ensuremath{\forall}\FBGSL}
1749
1750 % Nested-Goal Strategy Logic
1751 \DeclareRobustCommandx{\NGSL}[3][1=, 2=, 3=]
1752   {\SL[#1][#2][ng\arglef{,}{#3}]}
1753
1754 \DeclareRobustCommand{\ENGSL}
1755   {\ensuremath{\exists}\NGSL}
1756 \DeclareRobustCommand{\UNGSL}
1757   {\ensuremath{\forall}\NGSL}
1758
1759 \DeclareRobustCommand{\FNGSL}
1760   {\{\txtname{F}\}\xGSL}
1761
1762 \DeclareRobustCommand{\EFNGSL}
1763   {\ensuremath{\exists}\FNGSL}
1764 \DeclareRobustCommand{\UFNGSL}
1765   {\ensuremath{\forall}\FNGSL}
1766
1767 % Undefined-Goal Strategy Logic
1768 \DeclareRobustCommandx{\XGSL}[3][1=, 2=, 3=]
1769   {\SL[#1][#2][xg\arglef{,}{#3}]}
1770
1771 \DeclareRobustCommand{\EXGSL}
1772   {\ensuremath{\exists}\XGSL}
1773 \DeclareRobustCommand{\UXGSL}

```

```

1774 {\ensuremath{\forall}\text{XGSL}}
1775
1776 \DeclareRobustCommand{\FXGSL}
1777 {\{\textname{F}\}\text{XGSL}}
1778
1779 \DeclareRobustCommand{\EFXGSL}
1780 {\ensuremath{\exists}\text{FXGSL}}
1781 \DeclareRobustCommand{\UFXGSL}
1782 {\ensuremath{\forall}\text{FXGSL}}

1783 %%** Syntax *****%%

\BndSet, ... ...
1784 \newcommand{\bndsym}{\flat}
1785 \newcommand{\bndset}{\Bn}
1786 \cmdmthsetext{\Bnd}[\bndset][\bndsym]
1787 \usrmth{\bnd}{\}{argfun}

\psn ...
1788 \usrmth{\psn}{\}{argfun}

1789 %%** Semantics *****%%

\nxtFun ...
1790 \newcommand{\nxtfun}{\nxt}
1791 \cmdmthfun{\nxt}[\nxtfun]

1792 \fi
1793 %*****%%
1794 %*****%%
1795 %%** Macros for Automata *****%%
1796 %*****%%
1797 \ifaut@

1798 %%** Finite Word Automata *****%%

\DWA, ... ...
1799 \cmdtxtopname{\DWA}\cmdtxtopname{\NWA}\cmdtxtopname{\UWA}\cmdtxtopname{\AWA}
1800
1801 \cmdtxtopname{\DFW}\cmdtxtopname{\NFW}\cmdtxtopname{\UFW}\cmdtxtopname{\AFW}
1802 \cmdtxtopname{\DBW}\cmdtxtopname{\NBW}\cmdtxtopname{\UBW}\cmdtxtopname{\ABW}
1803 \cmdtxtopname{\DCW}\cmdtxtopname{\NCW}\cmdtxtopname{\UCW}\cmdtxtopname{\ACW}
1804 \cmdtxtopname{\DPW}\cmdtxtopname{\NPW}\cmdtxtopname{\UPW}\cmdtxtopname{\APW}
1805 \cmdtxtopname{\DRW}\cmdtxtopname{\NRW}\cmdtxtopname{\URW}\cmdtxtopname{\ARW}
1806 \cmdtxtopname{\DSW}\cmdtxtopname{\NSW}\cmdtxtopname{\USW}\cmdtxtopname{\ASW}
1807 \cmdtxtopname{\DMW}\cmdtxtopname{\NMW}\cmdtxtopname{\UMW}\cmdtxtopname{\AMW}

\GFG, \PD, ... ...
1808 \cmdtxtopname{\GFG}
1809
1810 \cmdtxtopname{\PD}
1811
1812 %% ...

1813 %%** Syntax *****%%

\AutName, ... ...
1814 \newcommand{\autname}{\A}
1815 \usrmthlatupp{\Aut}{\Name}{\name}[\autname]
1816 \newcommand{\autset}{\Aut}
1817 \cmdmthset{\Aut}[\autset]

\WAutSet ...
1818 \newcommand{\wautset}{\WAut}
1819 \cmdmthset{\WAut}[\wautset]

```

```

\SttSet, ... ...
1820 \def\sttsym{q}
1821 \def\sttset{Q}
1822 \cmdmthsetext{Stt}[\sttset][\sttsym]
1823 \cmdmthset{IStt}[\sttset_{I}]
1824 \cmdmthsymelm{istt}[\sttsym_{I}]
1825 \cmdmthset{FStt}[\sttset_{F}]
1826 \cmdmthsymelm{fstt}[\sttsym_{F}]

\SymSet, ... ...
1827 \newcommand{\symsym}{\sigma}
1828 \newcommand{\symset}{\Sigma}
1829 \cmdmthsetext{Sym}[\symset][\symsym]

\trnFun ...
1830 \newcommand{\trnsym}{\delta}
1831 \cmdmthfun{trn}[\trnsym]

1832 %** Semantics *****%

\LangFun ...
1833 \newcommand{\langfun}{L}
1834 \cmdmthfun{Lang}[\langfun]

\WrdSet, ... ...
1835 \newcommand{\wrdsym}{w}
1836 \newcommand{\wrddset}{W}
1837 \cmdmthsetext{Wrd}[\wrddset][\wrdsym]

1838 %** Finite Tree Automata *****%

\DTA, ... ...
1839 \cmdtxtopname{DTA}\cmdtxtopname{NTA}\cmdtxtopname{UTA}\cmdtxtopname{ATA}
1840
1841 \cmdtxtopname{DFT}\cmdtxtopname{NFT}\cmdtxtopname{UFT}\cmdtxtopname{AFT}
1842 \cmdtxtopname{DBT}\cmdtxtopname{NBT}\cmdtxtopname{UBT}\cmdtxtopname{ABT}
1843 \cmdtxtopname{DCT}\cmdtxtopname{NCT}\cmdtxtopname{UCT}\cmdtxtopname{ACT}
1844 \cmdtxtopname{DPT}\cmdtxtopname{NPT}\cmdtxtopname{UPT}\cmdtxtopname{APT}
1845 \cmdtxtopname{DRT}\cmdtxtopname{NRT}\cmdtxtopname{URT}\cmdtxtopname{ART}
1846 \cmdtxtopname{DST}\cmdtxtopname{NST}\cmdtxtopname{UST}\cmdtxtopname{AST}
1847 \cmdtxtopname{DMT}\cmdtxtopname{NMT}\cmdtxtopname{UMT}\cmdtxtopname{AMT}

1848 %** Syntax *****%

\TAutSet ...
1849 \newcommand{\tautset}{TAut}
1850 \cmdmthset{TAut}[\tautset]

\DirSet, ... ...
1851 \newcommand{\dirsym}{d}
1852 \newcommand{\dirset}{\Lambda}
1853 \cmdmthsetext{Dir}[\dirset][\dirsym]

1854 %** Semantics *****%

\TreeSet, ... ...
1855 \newcommand{\treesym}{T}
1856 \newcommand{\treeset}{Tr}
1857 \cmdmthsetext{Tree}[\treeset][\treesym]

\wotFun ...
1858 \newcommand{\wotfun}{wot}
1859 \cmdmthfun{wot}[\wotfun]

```

```

1860 \fi
1861 %%*****%
1862 %%*****%
1863 %%** Format Tricks *****%
1864 %%*****%
1865 \iffirm@

... ..

1866 %%...

1867 \fi
1868 %%*****%
1869 %%*****%
1870 %%** Figure Tricks *****%
1871 %%*****%
1872 \iffig@

1873 \RequirePackage{tikz}
1874 \usetikzlibrary{arrows,graphs,matrix,patterns,shapes}

1875 \tikzstyle{every node} =
1876   [draw = none, fill = none, black, thin]
1877 \tikzstyle{every edge} +=
1878   [black, thick]

1879 \tikzstyle{noall} =
1880   [draw = none, fill = none]
1881 \tikzstyle{nodraw} =
1882   [draw = none, fill = white]
1883 \tikzstyle{nofill} =
1884   [draw = black, fill = none]

1885 \ifwrpfig@
1886   % Wrapfig Package
1887   \RequirePackage{wrapfig}
1888 \fi

1889 \fi
1890 %%*****%
1891 %%*****%
1892 %%** Table Tricks *****%
1893 %%*****%
1894 \iftab@

... ..

1895 %%...

1896 \fi
1897 %%*****%
1898 %%*****%
1899 %%** Algorithm Tricks *****%
1900 %%*****%
1901 \ifalg@

1902 \RequirePackage[ruled,vlined]{algorithm2e}
1903 \setlength{\algomargin}{1.25em}
1904 \DontPrintSemicolon
1905 \SetInd{0.25em}{0.5em}

\Signature ...
1906 \SetKw{Signature}{signature}

\Macro, ... ..
1907 \SetKwFor{Macro}{macro}{}{}
1908 \SetKwFor{Function}{function}{}{}
1909 \SetKwFor{Procedure}{procedure}{}{}

```

```

\Let ...
1910 \SetKwFor{Let}{let}{in}{}

\True, \False ...
1911 \SetKw{True}{true}
1912 \SetKw{False}{false}

\From, \To ...
1913 \SetKw{From}{from}
1914 \SetKw{To}{to}
1915 \SetKw{DownTo}{downto}

\GoTo, ... ...
1916 \SetKw{GoTo}{goto}
1917 \SetKw{Break}{break}
1918 \SetKw{Continue}{continue}

\MIf, ... ...
1919 \SetKwIF{MIf}{MElseIf}{MElse}{\#if}{\#then}{\#else \#if}{\#else}{\#endif}

\nlr ...
1920 \DeclareRobustCommand{\nlr}[1]
1921   {\addtocounter{AlgoLine}{1}%
1922   \nlset{\arabic{AlgoLine}-\addtocounter{AlgoLine}{#1}\arabic{AlgoLine}}}

1923 \fi
1924 %%*****%
1925 \endinput
1926 \</package>

```



## 2 Change History

v0.0	extensions	1
General: First public release	v0.5	1
v0.1	General: Figure tricks	1
General: Algorithm tricks	v0.6	1
v0.10	General: Small refinements	1
General: Small refinements	v0.7	1
v0.11	General: Refinements, corrections, and extensions	1
General: Few additions and corrections	v0.8	1
v0.2	General: Few refinements and corrections	1
General: Changes in auxiliary tricks	v0.9	1
v0.3	General: Small addition to ‘Algorithm tricks’	1
General: Few problems solved		
v0.4		
General: Refactoring, corrections, and		

## 3 Index

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

Symbols			
\!	354, 362, 783, 823, 1575	\amsdef@true	16
\"	744, 745	\amsthm@false	21
\#	1919	\amsthm@true	20
\,	821, 823, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473	\AName,□...	481
\...	1866, 1895	\Aomega,□\A0omega	870
\@for	258, 262	\A0micron	880
\^	746, 748	\Aomicron,□...	878
A		\Aposteriori	729
\AccRel,□\TrnRel	1419	\aposteriori	707
\accsym	1419, 1420, 1421	\Apriori	728
\ACls,□...	507	\apriori	706
\actset	1602, 1603	\apset	1191, 1192
\ActSet,□...	1601	\APSet,□...	1190
\actsym	1601, 1603	\apsym	1190, 1192
\addtocounter	1921, 1922	\arabic	1922
\adhoc	704	\aRel,□...	565
\aElm,□...	604	\arenaname	1034, 1035
\AFam,□...	494	\ArenaName,□...	1034
\Afortiori	727	\arg	936
\afortiori	705	\argbst	944
\aFrm,□...	659	\arglef	239, 246, 354, 362, 1650, 1667, 1684, 1701, 1718, 1735, 1752, 1769
\aFun,□...	578	\argmax	952
\agnset	1583, 1584	\argmid	243, 299, 307, 354, 362, 821, 823, 825, 827, 831, 932, 934, 1409, 1411, 1575, 1577
\AgnSet,□...	1582	\argmin	950
\agnsym	1582, 1584	\argrig	241
\AGSL	1700, 1704, 1706	\argsep	245, 250, 821, 923, 925, 927, 929
\aka	750	\aSet,□...	546
\alg@false	121, 123	\asgset	1218, 1219
\alg@true	122	\AsgSet,□...	1217
\algomargin	1903	\asgsym	1217, 1219
\allowbreak	240, 242, 244, 246	\aSig,□...	520
\Alpha,□...	226	\aSnt,□...	646
\aMat,□...	673		
\amsdef@false	17		
		\aStr,□...	533
		\aSym,□...	591
		\Atheta,□\Atheta	874
		\ATL,□...	1529
		\ATLP	1549, 1553, 1555, 1557
		\ATLS	1564, 1568, 1570, 1572
		\atrfun	1095, 1096
		\atrFun,□\rchFun	1095
		\aut@false	56, 62, 93, 95
		\aut@true	94
		\autname	1814, 1815
		\AutName,□...	1814
		\autset	1816, 1817
		\aux@false	11, 13
		\aux@true	12
		\aVec,□...	686
		B	
		\BF,□\QBF,□...	1157
		\bfseries	425
		\BG,□...	1104
		\bgroup	253
		\BGSL	1734, 1738, 1740
		\BMod	1411
		\bndset	1785, 1786
		\BndSet,□...	1784
		\bndsym	1784, 1786
		\boldsymbol	672, 685
		\bot	1172
		\Box	1407
		\boxminus	1143
		\bst,□...	942
		C	
		\card	826
		\caselower	558
		\cdot	829
		\cequiv,□...	789

<code>\cf</code> .....	<a href="#">708</a>	<code>\cmdmthopar</code> .....	<a href="#">393</a> , <a href="#">396</a>	<code>\cmdtxtabr</code> <a href="#">438</a> , <a href="#">704</a> , <a href="#">705</a> , <a href="#">706</a> ,	
<code>\CGS</code> .....	<a href="#">1579</a>	<code>\cmdmthoparcls</code> .....	<a href="#">516</a>	<a href="#">707</a> , <a href="#">708</a> , <a href="#">709</a> , <a href="#">710</a> , <a href="#">711</a> ,	
<code>\CGSL</code> .....	<a href="#">1666</a> , <a href="#">1670</a> , <a href="#">1672</a>	<code>\cmdmthoparelm</code> .....	<a href="#">613</a> , <a href="#">630</a>	<a href="#">712</a> , <a href="#">713</a> , <a href="#">714</a> , <a href="#">715</a> , <a href="#">716</a> ,	
<code>\cgsstr</code> .....	<a href="#">1580</a> , <a href="#">1581</a>	<code>\cmdmthoparfam</code> .....	<a href="#">503</a>	<a href="#">717</a> , <a href="#">718</a> , <a href="#">719</a> , <a href="#">720</a> , <a href="#">721</a> ,	
<code>\CGSStr,□...</code> .....	<a href="#">1580</a>	<code>\cmdmthoparfrm</code> .....	<a href="#">668</a>	<a href="#">722</a> , <a href="#">723</a> , <a href="#">724</a> , <a href="#">725</a> , <a href="#">727</a> ,	
<code>\chgbar@false</code> .....	<a href="#">44</a>	<code>\cmdmthoparfun</code> .....	<a href="#">587</a>	<a href="#">728</a> , <a href="#">729</a> , <a href="#">730</a> , <a href="#">731</a> , <a href="#">732</a> ,	
<code>\chgbar@true</code> .....	<a href="#">45</a>	<code>\cmdmthoparmat</code> .....	<a href="#">682</a>	<a href="#">733</a> , <a href="#">734</a> , <a href="#">735</a> , <a href="#">736</a> , <a href="#">737</a> ,	
<code>\chi</code> .....	<a href="#">1217</a>	<code>\cmdmthoparname</code> .....	<a href="#">490</a>	<a href="#">738</a> , <a href="#">739</a> , <a href="#">740</a> , <a href="#">744</a> , <a href="#">745</a> ,	
<code>\circ</code> .....	<a href="#">850</a>	<code>\cmdmthoparrel</code> .....	<a href="#">574</a>	<a href="#">746</a> , <a href="#">748</a> , <a href="#">750</a> , <a href="#">751</a> , <a href="#">752</a> ,	
<code>\cmdmth</code> <a href="#">385</a> , <a href="#">396</a> , <a href="#">633</a> , <a href="#">634</a> , <a href="#">640</a>		<code>\cmdmthoparset</code> .....	<a href="#">555</a>	<a href="#">753</a> , <a href="#">754</a> , <a href="#">755</a> , <a href="#">756</a> , <a href="#">758</a> ,	
<code>\cmdmthall</code> <a href="#">395</a> , <a href="#">480</a> , <a href="#">493</a> , <a href="#">506</a> ,		<code>\cmdmthoparsig</code> .....	<a href="#">529</a>	<a href="#">759</a> , <a href="#">1207</a> , <a href="#">1208</a> , <a href="#">1209</a> , <a href="#">1210</a>	
<a href="#">519</a> , <a href="#">532</a> , <a href="#">545</a> , <a href="#">564</a> , <a href="#">577</a> ,		<code>\cmdmthoparsnt</code> .....	<a href="#">655</a>	<code>\cmdtxtall</code> <a href="#">340</a> , <a href="#">425</a> , <a href="#">437</a> , <a href="#">450</a> , <a href="#">462</a>	
<a href="#">590</a> , <a href="#">603</a> , <a href="#">645</a> , <a href="#">658</a> , <a href="#">672</a> , <a href="#">685</a>		<code>\cmdmthoparstr</code> .....	<a href="#">542</a>	<code>\cmdtxtarg</code> .....	<a href="#">332</a> , <a href="#">341</a>
<code>\cmdmtharg</code> .....	<a href="#">387</a> , <a href="#">396</a>	<code>\cmdmthoparsym</code> .....	<a href="#">600</a> , <a href="#">629</a>	<code>\cmdtxtargabr</code> .....	<a href="#">440</a>
<code>\cmdmthargcls</code> .....	<a href="#">510</a>	<code>\cmdmthoparsymelm</code> .....	<a href="#">628</a>	<code>\cmdtxtargcom</code> .....	<a href="#">465</a>
<code>\cmdmthargelm</code> .....	<a href="#">607</a> , <a href="#">621</a>	<code>\cmdmthoparvec</code> .....	<a href="#">695</a>	<code>\cmdtxtargdef</code> .....	<a href="#">428</a>
<code>\cmdmthargfam</code> .....	<a href="#">497</a>	<code>\cmdmthpar</code> .....	<a href="#">391</a> , <a href="#">396</a>	<code>\cmdtxtargname</code> .....	<a href="#">453</a>
<code>\cmdmthargfrm</code> .....	<a href="#">662</a>	<code>\cmdmthparcls</code> .....	<a href="#">514</a>	<code>\cmdtxtcom</code> ..	<a href="#">463</a> , <a href="#">989</a> , <a href="#">990</a> , <a href="#">991</a>
<code>\cmdmthargfun</code> .....	<a href="#">581</a>	<code>\cmdmthparelm</code> .....	<a href="#">611</a> , <a href="#">627</a>	<code>\cmdtxtdef</code> .....	<a href="#">426</a>
<code>\cmdmthargmat</code> .....	<a href="#">676</a>	<code>\cmdmthparfam</code> .....	<a href="#">501</a>	<code>\cmdtxtname</code> .....	<a href="#">451</a> , <a href="#">1579</a>
<code>\cmdmthargname</code> .....	<a href="#">484</a>	<code>\cmdmthparfrm</code> .....	<a href="#">666</a>	<code>\cmdtxtoarg</code> .....	<a href="#">334</a> , <a href="#">341</a>
<code>\cmdmthargrel</code> .....	<a href="#">568</a>	<code>\cmdmthparfun</code> .....	<a href="#">585</a>	<code>\cmdtxtoargabr</code> .....	<a href="#">442</a>
<code>\cmdmthargset</code> .....	<a href="#">549</a>	<code>\cmdmthparmat</code> .....	<a href="#">680</a>	<code>\cmdtxtoargcom</code> .....	<a href="#">467</a>
<code>\cmdmthargsig</code> .....	<a href="#">523</a>	<code>\cmdmthparname</code> .....	<a href="#">488</a>	<code>\cmdtxtoargdef</code> .....	<a href="#">430</a>
<code>\cmdmthargsnt</code> .....	<a href="#">649</a>	<code>\cmdmthparrel</code> .....	<a href="#">572</a>	<code>\cmdtxtoargname</code> .....	<a href="#">455</a>
<code>\cmdmthargstr</code> .....	<a href="#">536</a>	<code>\cmdmthparset</code> .....	<a href="#">553</a>	<code>\cmdtxtopar</code> .....	<a href="#">338</a> , <a href="#">341</a>
<code>\cmdmthargsym</code> .....	<a href="#">594</a> , <a href="#">620</a>	<code>\cmdmthparsig</code> .....	<a href="#">527</a>	<code>\cmdtxtoparabr</code> .....	<a href="#">446</a>
<code>\cmdmthargsymelm</code> .....	<a href="#">619</a>	<code>\cmdmthparsnt</code> .....	<a href="#">653</a>	<code>\cmdtxtoparcom</code> .....	<a href="#">471</a>
<code>\cmdmthargvec</code> .....	<a href="#">689</a>	<code>\cmdmthparstr</code> .....	<a href="#">540</a>	<code>\cmdtxtopardef</code> .....	<a href="#">434</a>
<code>\cmdmthcls</code> .....	<a href="#">508</a>	<code>\cmdmthparsym</code> .....	<a href="#">598</a> , <a href="#">626</a>	<code>\cmdtxtoparname</code> ....	<a href="#">459</a> ,
<code>\cmdmthelm</code> .....	<a href="#">605</a> , <a href="#">618</a>	<code>\cmdmthparsymelm</code> .....	<a href="#">625</a>	<a href="#">1013</a> , <a href="#">1016</a> , <a href="#">1019</a> , <a href="#">1022</a> ,	
<code>\cmdmthfam</code> .....	<a href="#">495</a>	<code>\cmdmthparvec</code> .....	<a href="#">693</a>	<a href="#">1025</a> , <a href="#">1028</a> , <a href="#">1105</a> , <a href="#">1108</a> ,	
<code>\cmdmthfrm</code> .....	<a href="#">660</a>	<code>\cmdmthrel</code> <a href="#">566</a> , <a href="#">1048</a> , <a href="#">1420</a> , <a href="#">1421</a>		<a href="#">1111</a> , <a href="#">1114</a> , <a href="#">1117</a> , <a href="#">1120</a> ,	
<code>\cmdmthfun</code> .....		<code>\cmdmthset</code> ..	<a href="#">547</a> , <a href="#">558</a> , <a href="#">1041</a> ,	<a href="#">1133</a> , <a href="#">1136</a> , <a href="#">1139</a> , <a href="#">1158</a> ,	
<a href="#">579</a> , <a href="#">1046</a> , <a href="#">1055</a> , <a href="#">1060</a> ,		<a href="#">1043</a> , <a href="#">1052</a> , <a href="#">1054</a> , <a href="#">1064</a> ,		<a href="#">1222</a> , <a href="#">1223</a> , <a href="#">1275</a> , <a href="#">1278</a> ,	
<a href="#">1068</a> , <a href="#">1072</a> , <a href="#">1129</a> , <a href="#">1148</a> ,		<a href="#">1066</a> , <a href="#">1076</a> , <a href="#">1078</a> , <a href="#">1590</a> ,		<a href="#">1281</a> , <a href="#">1284</a> , <a href="#">1287</a> , <a href="#">1290</a> ,	
<a href="#">1193</a> , <a href="#">1237</a> , <a href="#">1250</a> , <a href="#">1423</a> ,		<a href="#">1592</a> , <a href="#">1597</a> , <a href="#">1599</a> , <a href="#">1612</a> ,		<a href="#">1293</a> , <a href="#">1296</a> , <a href="#">1305</a> , <a href="#">1306</a> ,	
<a href="#">1427</a> , <a href="#">1608</a> , <a href="#">1616</a> , <a href="#">1620</a> ,		<a href="#">1614</a> , <a href="#">1624</a> , <a href="#">1626</a> , <a href="#">1817</a> ,		<a href="#">1347</a> , <a href="#">1370</a> , <a href="#">1395</a> , <a href="#">1430</a> ,	
<a href="#">1791</a> , <a href="#">1831</a> , <a href="#">1834</a> , <a href="#">1859</a>		<a href="#">1819</a> , <a href="#">1823</a> , <a href="#">1825</a> , <a href="#">1850</a>		<a href="#">1443</a> , <a href="#">1454</a> , <a href="#">1478</a> , <a href="#">1481</a> ,	
<code>\cmdmthlbop</code> .....	<a href="#">637</a>	<code>\cmdmthsetext</code> .....	<a href="#">557</a> ,	<a href="#">1496</a> , <a href="#">1511</a> , <a href="#">1530</a> , <a href="#">1545</a> ,	
<code>\cmdmthlrel</code> .....	<a href="#">641</a>	<a href="#">1038</a> , <a href="#">1059</a> , <a href="#">1063</a> , <a href="#">1071</a> ,		<a href="#">1560</a> , <a href="#">1633</a> , <a href="#">1799</a> , <a href="#">1801</a> ,	
<code>\cmdmthluop,□...</code> .....	<a href="#">635</a>	<a href="#">1075</a> , <a href="#">1082</a> , <a href="#">1128</a> , <a href="#">1147</a> ,		<a href="#">1802</a> , <a href="#">1803</a> , <a href="#">1804</a> , <a href="#">1805</a> ,	
<code>\cmdmthmat</code> .....	<a href="#">674</a>	<a href="#">1192</a> , <a href="#">1202</a> , <a href="#">1216</a> , <a href="#">1219</a> ,		<a href="#">1806</a> , <a href="#">1807</a> , <a href="#">1808</a> , <a href="#">1810</a> ,	
<code>\cmdmthname</code> .....	<a href="#">482</a>	<a href="#">1235</a> , <a href="#">1242</a> , <a href="#">1248</a> , <a href="#">1255</a> ,		<a href="#">1839</a> , <a href="#">1841</a> , <a href="#">1842</a> , <a href="#">1843</a> ,	
<code>\cmdmthoarg</code> .....	<a href="#">389</a> , <a href="#">396</a>	<a href="#">1261</a> , <a href="#">1340</a> , <a href="#">1343</a> , <a href="#">1417</a> ,		<a href="#">1844</a> , <a href="#">1845</a> , <a href="#">1846</a> , <a href="#">1847</a>	
<code>\cmdmthoargcls</code> .....	<a href="#">512</a>	<a href="#">1426</a> , <a href="#">1584</a> , <a href="#">1587</a> , <a href="#">1596</a> ,		<code>\cmdtxtpar</code> .....	<a href="#">336</a> , <a href="#">341</a>
<code>\cmdmthoargelm</code> .....	<a href="#">609</a> , <a href="#">624</a>	<a href="#">1603</a> , <a href="#">1606</a> , <a href="#">1611</a> , <a href="#">1619</a> ,		<code>\cmdtxtparabr</code> .....	<a href="#">444</a>
<code>\cmdmthoargfam</code> .....	<a href="#">499</a>	<a href="#">1623</a> , <a href="#">1630</a> , <a href="#">1786</a> , <a href="#">1822</a> ,		<code>\cmdtxtparcom</code> .....	<a href="#">469</a>
<code>\cmdmthoargfrm</code> .....	<a href="#">664</a>	<a href="#">1829</a> , <a href="#">1837</a> , <a href="#">1853</a> , <a href="#">1857</a>		<code>\cmdtxtpardef</code> .....	<a href="#">432</a>
<code>\cmdmthoargfun</code> .....		<code>\cmdmthsig</code> .....	<a href="#">521</a>	<code>\cmdtxtparname</code> .....	<a href="#">457</a>
....	<a href="#">583</a> , <a href="#">1084</a> , <a href="#">1086</a> ,	<code>\cmdmthsnt</code> .....	<a href="#">647</a>	<code>\cmmodels,□...</code> .....	<a href="#">785</a>
<a href="#">1088</a> , <a href="#">1090</a> , <a href="#">1092</a> , <a href="#">1094</a> ,		<code>\cmdmthstr</code> .....	<a href="#">534</a>	<code>\cmp</code> .....	<a href="#">849</a>
<a href="#">1096</a> , <a href="#">1098</a> , <a href="#">1100</a> , <a href="#">1102</a>		<code>\cmdmthsym</code> .....		<code>\cnf,□\dnf,□...</code> .....	<a href="#">1207</a>
<code>\cmdmthoargmat</code> .....	<a href="#">678</a>	<a href="#">592</a> , <a href="#">617</a> , <a href="#">1031</a> , <a href="#">1033</a> ,		<code>\Cnt,□\Qnt,□\Sym</code> .....	<a href="#">1195</a>
<code>\cmdmthoargname</code> .....	<a href="#">486</a>	<a href="#">1123</a> , <a href="#">1125</a> , <a href="#">1142</a> , <a href="#">1144</a>		<code>\coimplies,□...</code> .....	<a href="#">780</a>
<code>\cmdmthoargrel</code> .....	<a href="#">570</a>	<code>\cmdmthsymelm</code> ..	<a href="#">616</a> , <a href="#">1039</a> ,	<code>\com@false</code> .....	<a href="#">56</a> , <a href="#">77</a> , <a href="#">79</a>
<code>\cmdmthoargset</code> .....	<a href="#">551</a>	<a href="#">1040</a> , <a href="#">1042</a> , <a href="#">1044</a> , <a href="#">1065</a> ,		<code>\com@true</code> .....	<a href="#">78</a>
<code>\cmdmthoargsig</code> .....	<a href="#">525</a>	<a href="#">1067</a> , <a href="#">1077</a> , <a href="#">1079</a> , <a href="#">1418</a> ,		<code>\conset</code> .....	<a href="#">1241</a> , <a href="#">1242</a>
<code>\cmdmthoargsnt</code> .....	<a href="#">651</a>	<a href="#">1588</a> , <a href="#">1589</a> , <a href="#">1591</a> , <a href="#">1593</a> ,		<code>\consig</code> .....	<a href="#">1238</a> , <a href="#">1239</a>
<code>\cmdmthoargstr</code> .....	<a href="#">538</a>	<a href="#">1598</a> , <a href="#">1600</a> , <a href="#">1613</a> , <a href="#">1615</a> ,		<code>\ConSig,□...</code> .....	<a href="#">1238</a>
<code>\cmdmthoargsym</code> .....	<a href="#">596</a> , <a href="#">623</a>	<a href="#">1625</a> , <a href="#">1627</a> , <a href="#">1824</a> , <a href="#">1826</a>		<code>\constr</code> .....	<a href="#">1265</a> , <a href="#">1266</a>
<code>\cmdmthoargsymelm</code> .....	<a href="#">622</a>	<code>\cmdmthvec</code> .....	<a href="#">687</a>	<code>\ConStr,□...</code> .....	<a href="#">1265</a>
<code>\cmdmthoargvec</code> .....	<a href="#">691</a>	<code>\cmdtxt</code> .....	<a href="#">330</a> , <a href="#">341</a>	<code>\consym</code> .....	<a href="#">1240</a> , <a href="#">1242</a>



1738, 1740, 1746, 1748, 1755, 1757, 1763, 1765, 1772, 1774, 1780, 1782	<code>\forall</code> ..... 1166, 1188, 1198, 1199, 1403, 1438, 1451, 1462, 1493, 1508, 1523, 1542, 1557, 1572, 1638, 1646, 1655, 1663, 1672, 1680, 1689, 1697, 1706, 1714, 1723, 1731, 1740, 1748, 1757, 1765, 1774, 1782	<code>\iff</code> ..... 752 <code>\iffig@</code> ..... 105, 1872 <code>\iffnttIs@</code> ..... 36, 179 <code>\iffrm@</code> ..... 99, 1865 <code>\ifgam@</code> ..... 83, 1010 <code>\ifhypref@</code> ..... 32, 162 <code>\iflinnum@</code> ..... 48, 199 <code>\iflog@</code> ..... 88, 1155 <code>\ifmath@</code> ..... 71, 765 <code>\ifmthgen@</code> ..... 59, 478 <code>\iftab@</code> ..... 115, 1894 <code>\iftext@</code> ..... 66, 702 <code>\ifthmtIs@</code> ..... 24, 152 <code>\iftxtgen@</code> ..... 53, 423 <code>\ifwrfpfig@</code> ..... 110, 1885 <code>\img</code> ..... 842 <code>\implied,□...</code> ..... 776 <code>\implies,□...</code> ..... 772 <code>\inf,□\sup</code> ..... 954 <code>\infty</code> 890, 894, 896, 898, 902, 904, 906, 910, 912, 914, 918 <code>\interdisplaylinepenalty</code> 144 <code>\intfun</code> ..... 1091, 1092 <code>\intFun,□\outFun</code> ..... 1091 <code>\itr</code> 258, 259, 260, 262, 263, 264
<code>\entfun</code> ..... 1087, 1088 <code>\entFun,□\escFun</code> ..... 1087 <code>\enumeration,□...</code> ..... 805 <code>\EOGSL</code> ..... 1652 <code>\EPTL</code> ..... 1448 <code>\equiv</code> ..... 790, 792 <code>\ergo</code> ..... 714 <code>\Errata</code> ..... 735 <code>\errata</code> ..... 715 <code>\Erratum</code> ..... 736 <code>\erratum</code> ..... 716 <code>\escfun</code> ..... 1089, 1090 <code>\ESL</code> ..... 1635 <code>\etal</code> ..... 717 <code>\etc</code> ..... 718 <code>\evn,□\odd</code> ..... 938 <code>\evnsym</code> ..... 1122, 1123 <code>\EvnSym,□\OddSym</code> ..... 1122 <code>\ExecuteOptions</code> ..... 128 <code>\EXGSL</code> ..... 1771 <code>\exists</code> ..... 1164, 1186, 1198, 1199, 1401, 1436, 1449, 1460, 1491, 1506, 1521, 1540, 1555, 1570, 1636, 1644, 1653, 1661, 1670, 1678, 1687, 1695, 1704, 1712, 1721, 1729, 1738, 1746, 1755, 1763, 1772, 1780 <code>\expandafter</code> ..... 249, 251, 254, 259, 263 <code>\ExpSpace,□...</code> ..... 1002 <code>\ExpTime,□...</code> ..... 1001 <code>\Exs,□\All</code> ..... 1408	<code>\forall</code> ..... 1166, 1188, 1198, 1199, 1403, 1438, 1451, 1462, 1493, 1508, 1523, 1542, 1557, 1572, 1638, 1646, 1655, 1663, 1672, 1680, 1689, 1697, 1706, 1714, 1723, 1731, 1740, 1748, 1757, 1765, 1774, 1782 <code>\free,□\bound</code> ..... 1203 <code>\frm@false</code> ..... 99, 101 <code>\frm@true</code> ..... 100 <code>\From,□\To</code> ..... 1913 <code>\FSL</code> ..... 1640, 1644, 1646 <code>\fst,□\lst</code> ..... 961 <code>\funset</code> ..... 1247, 1248 <code>\funsig</code> ..... 1244, 1245 <code>\FunSig,□...</code> ..... 1244 <code>\funstr</code> ..... 1267, 1268 <code>\FunStr,□...</code> ..... 1267 <code>\funsym</code> ..... 1246, 1248 <code>\fvarset</code> ..... 1339, 1340 <code>\FVarSet,□...</code> ..... 1338 <code>\fvarsym</code> ..... 1338, 1340 <code>\FXGSL</code> ..... 1776, 1780, 1782	<code>\iff</code> ..... 752 <code>\iffig@</code> ..... 105, 1872 <code>\iffnttIs@</code> ..... 36, 179 <code>\iffrm@</code> ..... 99, 1865 <code>\ifgam@</code> ..... 83, 1010 <code>\ifhypref@</code> ..... 32, 162 <code>\iflinnum@</code> ..... 48, 199 <code>\iflog@</code> ..... 88, 1155 <code>\ifmath@</code> ..... 71, 765 <code>\ifmthgen@</code> ..... 59, 478 <code>\iftab@</code> ..... 115, 1894 <code>\iftext@</code> ..... 66, 702 <code>\ifthmtIs@</code> ..... 24, 152 <code>\iftxtgen@</code> ..... 53, 423 <code>\ifwrfpfig@</code> ..... 110, 1885 <code>\img</code> ..... 842 <code>\implied,□...</code> ..... 776 <code>\implies,□...</code> ..... 772 <code>\inf,□\sup</code> ..... 954 <code>\infty</code> 890, 894, 896, 898, 902, 904, 906, 910, 912, 914, 918 <code>\interdisplaylinepenalty</code> 144 <code>\intfun</code> ..... 1091, 1092 <code>\intFun,□\outFun</code> ..... 1091 <code>\itr</code> 258, 259, 260, 262, 263, 264
<b>F</b>	<b>G</b>	<b>K</b>
<code>\FAGSL</code> ..... 1708, 1712, 1714 <code>\FBGSL</code> ..... 1742, 1746, 1748 <code>\FCGSL</code> ..... 1674, 1678, 1680 <code>\FDGSL</code> ..... 1691, 1695, 1697 <code>\FEGSL</code> ..... 1725, 1729, 1731 <code>\ffsym</code> ..... 1172, 1173 <code>\fi</code> ..... 145, 150, 155, 160, 177, 182, 197, 205, 206, 210, 212, 235, 237, 246, 473, 697, 760, 965, 1005, 1150, 1792, 1860, 1867, 1888, 1889, 1896, 1923 <code>\fig@false</code> ..... 105, 107 <code>\fig@true</code> ..... 106 <code>\fix,□\ifp,□...</code> ..... 861 <code>\flat</code> ..... 1784 <code>\floor,□\ceil</code> ..... 931 <code>\FNGSL</code> ..... 1759, 1763, 1765 <code>\fnttIs@false</code> ..... 37 <code>\fnttIs@true</code> ..... 36 <code>\FO</code> ..... 1229 <code>\FOGSL</code> ..... 1657, 1661, 1663 <code>\FOL,□...</code> ..... 1221 <code>\footnotesize</code> ..... 858	<code>\gam@false</code> ..... 56, 62, 83, 85 <code>\gam@true</code> ..... 84 <code>\Game</code> ..... 1049 <code>\gameName</code> ..... 1049, 1050 <code>\GameName,□...</code> ..... 1049 <code>\GFG,□\PD,□...</code> ..... 1808 <code>\gfp</code> ..... 867 <code>\GoTo,□...</code> ..... 1916	<code>\kern</code> ..... 859 <code>\krpstr</code> ..... 1413, 1414 <code>\KrpStr,□...</code> ..... 1413
<b>H</b>	<b>I</b>	<b>L</b>
<code>\H</code> ..... 1471 <code>\hstset</code> ..... 1062, 1063, 1064, 1066, 1610, 1611, 1612, 1614 <code>\HstSet,□...</code> ..... 1061, 1609 <code>\hstsym</code> ..... 1061, 1063, 1065, 1067, 1609, 1611, 1613, 1615 <code>\hypersetup</code> ..... 166 <code>\hypref@false</code> ..... 33 <code>\hypref@true</code> ..... 32	<code>\ie</code> ..... 719 <code>\if</code> ..... 235, 237, 246 <code>\if@twocolumn</code> ..... 132, 201 <code>\ifalg@</code> ..... 121, 1901 <code>\ifamsdef@</code> ..... 16, 139 <code>\ifamsthm@</code> ..... 20, 147 <code>\ifaut@</code> ..... 93, 1797 <code>\ifaux@</code> ..... 11, 137 <code>\ifchgbar@</code> ..... 44, 194 <code>\ifcom@</code> ..... 77, 970 <code>\ifcrv@</code> ..... 40, 184 <code>\ifcsdef</code> ..... 132 <code>\ifdef</code> ..... 217, 218, 219, 220 <code>\ifenmtIs@</code> ..... 28, 157	<code>\laallsym</code> ..... 1300, 1301 <code>\labFun</code> ..... 1422 <code>\labsym</code> ..... 1422, 1423 <code>\lallsym</code> ..... 1188, 1189 <code>\Lambda</code> ..... 1852 <code>\lambda</code> ..... 1422 <code>\land</code> ..... 1178 <code>\LangFun</code> ..... 1833 <code>\langfun</code> ..... 1833, 1834 <code>\langle</code> ..... 813, 814, 816, 817, 1409, 1575 <code>\LaTeX</code> ..... 632, 639 <code>\lbrace</code> ..... 821, 823 <code>\lceil</code> ..... 934 <code>\lcoisym</code> ..... 1184, 1185 <code>\LCon,□\LDis</code> ..... 1178 <code>\lconsym</code> ..... 1178, 1179 <code>\ldissym</code> ..... 1180, 1181 <code>\LEExs,□\LAA11</code> ..... 1298 <code>\leexssym</code> ..... 1298, 1299 <code>\left</code> ..... 354, 362, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 821, 823, 825, 932, 934, 1411, 1577 <code>\Leftarrow</code> ..... 777, 779 <code>\Leftrightarrow</code> ..... 781, 783 <code>\leftrightharpoonrightarrow</code> ..... 1184 <code>\Let</code> ..... 1910 <code>\let</code> ..... 1470, 1471, 1472 <code>\LEExs,□\LAA11</code> ..... 1186 <code>\lexssym</code> ..... 1186, 1187





\noexpand	260, 264	1042, 1044, 1585, 1587,	\rho	1061, 1609	
\normalfont	425, 450, 462	1588, 1589, 1591, 1593	\right	354,	
\not	775, 779, 783, 788, 792	\pow	362, 807, 808, 809, 810,		
\notcequiv	791	\prefun	811, 812, 813, 814, 815,		
\notcmmodels	787	\preFun, \sucFun	816, 817, 818, 821, 823,		
\notcoimplies	782	\prfset	825, 932, 934, 1411, 1577		
\notimplied	778	\PrfSet, \prfFun	\Rightarrow	773, 775	
\notimplies	774	\prfsym	\rightarrow	1182	
\num, \dots	920	\PrimaFacie	\rightharpoonup	856, 859	
\numcc	922	\primafacie	\rmfamily	328, 462	
\numco	924	\prj	\rng	840	
\numoc	926	\ProcessOptions	\Role	748	
\numoo	928	\providecommand	\role	746	
\nxtFun	1790	1424, 1425, 1585, 1586,	\rrbracket	831	
\nxtfun	1790, 1791	1609, 1610, 1617, 1618,	\rst	847	
		1621, 1622, 1628, 1629	\rvert	827	
<b>O</b>					
\obsset	1053, 1054	\prtset			
\ObsSet, \obsFun	1053	\PrtSet, \prtFun	<b>S</b>		
\oddsym	1124, 1125	\prtSym	\S	1472	
\odot	1197	\psn	\SATG, \dots	1012	
\OGSL	1649, 1653, 1655, 1658	\PSpace, \dots	\SaveDoubleAcute	1471	
\Omega	873	\pthset	\SavePilcrow	1470	
\omega	871	\PthSet, \pthFun	\SaveSectionSymbol	1472	
\Omicron	881	\pthsym	\scshape	450, 462	
\omicron	225, 879	\PTime, \dots	\seqofcmd	261, 274, 278	
\oplus	1141	\PTL, \LTL, \dots	\seqofgrklet	281, 412	
\OppSym		\pto, \pmapsto	\seqofgrklow		
	1043, 1044, 1066, 1067,	<b>Q</b>	273, 282, 285, 408, 520, 533		
	1078, 1079, 1592, 1593,	\QAE, \QEA	\seqofgrkupp	277, 282, 287, 410	
	1614, 1615, 1626, 1627	\QATL	\seqoflatlet	270, 406, 520, 533	
\oppsym	1032, 1033	\QATLP	\seqoflatlow	266, 271, 285, 402	
\Opr	1405	\QATLS	\seqoflatupp	268,	
\outfun	1093, 1094	\QCTL	271, 287, 404, 481, 494, 507		
\overline	795	\QCTL	\seqoflet		
		\QCTL	288, 418, 546, 565, 578,		
<b>P</b>					591, 604, 646, 659, 673, 686
\P	1470	\QLTL	\seqoflow	284, 289, 414	
\PackageWarning	126	\qntset	\seqoftag	257, 267, 269	
\PDL, \CTL, \dots	1476	\QntSet, \dots	\seqofupp	286, 289, 416	
\Percontra	738	\qntsyt	\sequence, \dots	807	
\percontra	721	\QPSpace, \dots	\set, \dots	820	
\PH	1004	\QPTIME, \dots	\SetB	883	
\Pi	1300	\QPTL	\SetC, \dots	915	
\pi	1057, 1069, 1424, 1617	<b>R</b>	\SetCI	917	
\playset	1070, 1071, 1618, 1619	\raisebox	\SetF	885	
\PlaySet, \playFun	1069, 1617	\rangle	\SetInd	1905	
\playsym	1069, 1071, 1617, 1619	815, 816, 818, 1409, 1575	\SetKw	1906,	
\PlrFun	1045	\rbrace	1911, 1912, 1913, 1914,		
\plrFun	1045, 1046	\rceil	1915, 1916, 1917, 1918		
\PlrSym		\rchfun	\SetKwFor	1907, 1908, 1909, 1910	
	1041, 1042, 1064, 1065,	\relax	\SetKwIF	1919	
	1076, 1077, 1590, 1591,	\relset	\setl	822	
	1612, 1613, 1624, 1625	\relsig	\setlength	1903	
\plrsym	1030, 1031	\RelSig, \dots	\SetN, \dots	887	
\PlrSym, \OppSym	1030	\relstr	\SetNI	889	
\pm	894, 902, 910	\RelStr, \dots	\SetQ, \dots	899	
\posset		\relsym	\SetQI	901	
	1037, 1038, 1041, 1043,	\RequirePackage	\SetQNI	905	
	1586, 1587, 1590, 1592	3, 5,	\SetQPI	903	
\PosSet, \dots	1036, 1585	6, 7, 141, 142, 143, 149,	\setr	824	
\possym		154, 159, 164, 181, 196,	\setR, \dots	907	
	1036, 1038, 1039, 1040,	202, 204, 1873, 1887, 1902	\setRI	909	
		\resp	\setRNI	913	
		\rfloor	\setRPI	911	



<b>V</b>		
\valset	1215, 1216	\WATLS 1563
\ValSet,□...	1214	\WAutSet 1818
\valsym	1214, 1216	\wautset 1818, 1819
\varcmd	248, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818	\WCTL 1484
\varepsilon	960	\WCTLP 1499
\varnothing	834, 853	\WCTLS 1514
\varset	1234, 1235	\wghset 1146, 1147
\varsig	1231, 1232	\WghSet,□\wghFun 1145
\VarSig,□...	1231	\wghsym 1145, 1147
\varsym	1233, 1235	\widehat 799
\vec	802	\widetilde 801
\vert	821, 823	\WinSet 1051
\Viceversa	740	\winset 1051, 1052
\viceversa	723	\Wlogx 759
\viz	725	\wlogx 756
\vs	724	\WMPL 1385
<b>W</b>		
\WATL	1533	\WMSO 1329
\WATLP	1548	\WMSOL 1327
		\WMTL 1362
		\wotFun 1858
		\wotfun 1858, 1859
		\wp 1200
		\WPL 1373
		\wrdset 1836, 1837
		\WrdSet,□... 1835
		\wrdsym 1835, 1837
		\wrlset 1416, 1417
		\WrlSet,□... 1415
		\wrlsym 1415, 1417, 1418
		\wrpfig@false 111
		\wrpfig@true 110
		\wrt 755
		\WSO 1311
		\WSOL 1309
		\WTL 1350
<b>X</b>		
\X,□...	1464	
\XGSL	1768, 1772, 1774	
\xGSL	1675, 1692, 1709, 1726, 1743, 1760, 1777	
\xi	1080, 1214, 1628	
\xspace	295	
<b>Y</b>		
\Y,□...	1469	