

Logiweb sequent calculus, Chores

Klaus Grue

GRD-2006-06-21.UTC:10:43:40.552317

Contents

1 Test cases	1
2 Pyk definitions	3
3 T_EX definitions	7
3.1 Variables	15
4 Priority table	17

1 Test cases

$[[\bar{x}] \#^0 [\bar{y} = \bar{z} \Rightarrow \forall_{\text{obj}} \bar{x}: \bar{x} = \bar{y}] \text{ 'check}]]$

$[[\bar{x}] \#^0 [\bar{x} = \bar{z} \Rightarrow \forall_{\text{obj}} \bar{x}: \bar{x} = \bar{y}] \text{ 'check}]^-$

$[[\bar{x}] \#^0 [\bar{y} = \bar{x} \Rightarrow \forall_{\text{obj}} \bar{x}: \bar{x} = \bar{y}] \text{ 'check}]^-$

$[[\bar{x}] \#^0 [\bar{y} = \bar{z} \Rightarrow \forall_{\text{obj}} \bar{y}: \bar{x} = \bar{y}] \text{ 'check}]^-$

$[[\langle [\bar{a}] \equiv^0 [\bar{a}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]]$

$[[\langle [\bar{b}] \equiv^0 [\bar{a}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]^-$

$[[\langle [\bar{c}] \equiv^0 [\bar{a}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]^-$

$[[\langle [\bar{a}] \equiv^0 [\bar{b}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]^-$

$[[\langle [\bar{b}] \equiv^0 [\bar{b}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]^-$

$[[\langle [\bar{c}] \equiv^0 [\bar{b}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]]$

$[[\langle [\forall_{\text{obj}} \bar{a}: \bar{a} = \bar{b}] \equiv^0 [\forall_{\text{obj}} \bar{a}: \bar{a} = \bar{b}] \mid [\bar{a}] := [\bar{c}] \rangle \text{ 'check}]]$

$[[\langle [\forall_{\text{obj}} \bar{a}: \bar{a} = \bar{c}] \equiv^0 [\forall_{\text{obj}} \bar{a}: \bar{a} = \bar{b}] \mid [\bar{b}] := [\bar{c}] \rangle \text{ 'check}]]$

$[[\langle [\forall_{\text{obj}} \bar{a}: \bar{a} = 0 + \bar{a} \Rightarrow \bar{c} \cdot \bar{d} = 0 + \bar{c} \cdot \bar{d}] \equiv^0 [\forall_{\text{obj}} \bar{a}: \bar{a} = 0 + \bar{a} \Rightarrow \bar{b} = 0 + \bar{b}] \mid [\bar{b}] := [\bar{c} \cdot \bar{d}] \rangle \text{ 'check}]]$

$[(\forall_{\text{obj}} \bar{a}: \bar{a} = 0 + \bar{a} \Rightarrow \bar{b} = 0 + \bar{b}) \equiv^0 (\forall_{\text{obj}} \bar{a}: \bar{a} = 0 + \bar{a} \Rightarrow \bar{b} = 0 + \bar{b}) \mid (\bar{a} := \bar{c})] \text{ 'check}'$

$[\lambda x. \text{Ded}_0([\bar{0}], [\bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{0}], [\bar{1}]) \text{ 'check}]^-$

$[\text{Ded}_8([\forall \underline{a}: \underline{a}], \top)]$

$[\text{Ded}_7([\forall \underline{a}: \underline{a}] \stackrel{t}{=} [\underline{a}])]$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \underline{a}], [\underline{a}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\underline{a}], [\underline{b}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \underline{a}], [\underline{b}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \underline{a} \vdash \underline{b}], [\underline{a} \Rightarrow \underline{b}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \underline{a} \vdash \underline{b}], [\underline{a} \Rightarrow \underline{a}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \underline{a} \vdash \underline{b}], [\underline{b} \Rightarrow \underline{b}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \underline{a} \vdash \underline{b}], [\bar{0}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{0}], [\underline{a} \Rightarrow \underline{a}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \forall \underline{c}: \underline{a} \vdash \underline{b} \vdash \underline{c}], [\underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \underline{a} \vdash \underline{b} \vdash \underline{a}], [\underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\forall \underline{a}: \forall \underline{b}: \forall \underline{c}: \underline{a} \vdash \underline{b} \vdash \underline{c}], [\underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{0}], [\bar{x}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{x}], [\bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{x}], [\bar{x}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\forall_{\text{obj}} \bar{x}: \bar{x}], [\bar{x}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{x}], [\forall_{\text{obj}} \bar{y}: \bar{z}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\forall_{\text{obj}} \bar{x}: \bar{x}], [\forall_{\text{obj}} \bar{x}: \bar{x}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{0} \vdash \bar{0}], [\bar{0} \Rightarrow \bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{0}], [\bar{0} \Rightarrow \bar{0}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{0} \vdash \bar{x}], [\bar{0} \Rightarrow \bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{x}], [\bar{0} \Rightarrow \bar{0}]) \text{ 'check}]^-$

$[\lambda x. \text{Ded}_0([\bar{0} \vdash \bar{0}], [\forall_{\text{obj}} \bar{x}: \bar{0} \Rightarrow \bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{0}], [\forall_{\text{obj}} \bar{x}: \bar{x} \Rightarrow \bar{0}]) \text{ 'check}']$

$[\lambda x. \text{Ded}_0([0 \vdash \bar{x}], [\forall_{\text{obj}} \bar{x}: 0 \Rightarrow \bar{x}])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{x}], [\forall_{\text{obj}} \bar{x}: \bar{x} \Rightarrow \bar{x}])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([0 \vdash 0], [0 \Rightarrow \forall_{\text{obj}} \bar{x}: 0])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} \vdash 0], [0 \Rightarrow \forall_{\text{obj}} \bar{x}: 0])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([0 \vdash \bar{x}], [0 \Rightarrow \forall_{\text{obj}} \bar{y}: \bar{z}])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{x}], [0 \Rightarrow \forall_{\text{obj}} \bar{x}: \bar{x}])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([0 \vdash 0], [\forall_{\text{obj}} \bar{x}: 0 \Rightarrow \forall_{\text{obj}} \bar{x}: 0])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} \vdash 0], [\forall_{\text{obj}} \bar{x}: \bar{x} \Rightarrow \forall_{\text{obj}} \bar{x}: 0])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([0 \vdash \bar{x}], [\forall_{\text{obj}} \bar{x}: 0 \Rightarrow 2])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} \vdash \bar{x}], [\forall_{\text{obj}} \bar{x}: \bar{x} \Rightarrow 3])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} + \bar{y} = \bar{y} + \bar{x}], [2 + 3 = 3 + 2])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} + \bar{y} = \bar{y} + \bar{x}], [2 + 3 = 2 + 3])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} + \bar{y} = \bar{y} + \bar{x}], [2 + 3 = 2 + 2])] \text{ 'check}' \cdot$
 $[\lambda x. \text{Ded}_0([\bar{x} + \bar{y} = \bar{y} + \bar{x}], [2 + 3 = 3 + 3])] \text{ 'check}' \cdot$

2 Pyk definitions

$[[* \stackrel{\circ}{=} *] \xrightarrow{\text{pyk}} \text{"general macro define " as " end define"}]$
 $[\text{RootVisible}(*) \xrightarrow{\text{pyk}} \text{"make root visible " end visible"}]$
 $[A \xrightarrow{\text{pyk}} \text{"sequent example axiom"}]$
 $[R \xrightarrow{\text{pyk}} \text{"sequent example rule"}]$
 $[C \xrightarrow{\text{pyk}} \text{"sequent example contradiction"}]$
 $[T \xrightarrow{\text{pyk}} \text{"sequent example theory"}]$
 $[L \xrightarrow{\text{pyk}} \text{"sequent example lemma"}]$
 $[\{*\} \xrightarrow{\text{pyk}} \text{"set " end set"}]$
 $[\bar{*} \xrightarrow{\text{pyk}} \text{"object var " end var"}]$
 $[a \xrightarrow{\text{pyk}} \text{"object a"}]$
 $[b \xrightarrow{\text{pyk}} \text{"object b"}]$
 $[c \xrightarrow{\text{pyk}} \text{"object c"}]$
 $[d \xrightarrow{\text{pyk}} \text{"object d"}]$
 $[e \xrightarrow{\text{pyk}} \text{"object e"}]$
 $[f \xrightarrow{\text{pyk}} \text{"object f"}]$

$[g \xrightarrow{\text{pyk}} \text{"object g"}]$

$[h \xrightarrow{\text{pyk}} \text{"object h"}]$

$[i \xrightarrow{\text{pyk}} \text{"object i"}]$

$[j \xrightarrow{\text{pyk}} \text{"object j"}]$

$[k \xrightarrow{\text{pyk}} \text{"object k"}]$

$[l \xrightarrow{\text{pyk}} \text{"object l"}]$

$[m \xrightarrow{\text{pyk}} \text{"object m"}]$

$[n \xrightarrow{\text{pyk}} \text{"object n"}]$

$[o \xrightarrow{\text{pyk}} \text{"object o"}]$

$[p \xrightarrow{\text{pyk}} \text{"object p"}]$

$[q \xrightarrow{\text{pyk}} \text{"object q"}]$

$[r \xrightarrow{\text{pyk}} \text{"object r"}]$

$[s \xrightarrow{\text{pyk}} \text{"object s"}]$

$[t \xrightarrow{\text{pyk}} \text{"object t"}]$

$[u \xrightarrow{\text{pyk}} \text{"object u"}]$

$[v \xrightarrow{\text{pyk}} \text{"object v"}]$

$[w \xrightarrow{\text{pyk}} \text{"object w"}]$

$[x \xrightarrow{\text{pyk}} \text{"object x"}]$

$[y \xrightarrow{\text{pyk}} \text{"object y"}]$

$[z \xrightarrow{\text{pyk}} \text{"object z"}]$

$[\langle * \equiv * \mid * := * \rangle \xrightarrow{\text{pyk}} \text{"sub " is " where " is " end sub"}]$

$[\langle * \equiv^0 * \mid * := * \rangle \xrightarrow{\text{pyk}} \text{"sub zero " is " where " is " end sub"}]$

$[\langle * \equiv^1 * \mid * := * \rangle \xrightarrow{\text{pyk}} \text{"sub one " is " where " is " end sub"}]$

$[\langle * \equiv^* * \mid * := * \rangle \xrightarrow{\text{pyk}} \text{"sub star " is " where " is " end sub"}]$

$[\text{Ded}(*, *) \xrightarrow{\text{pyk}} \text{"deduction " conclude " end deduction"}]$

$[\text{Ded}_0(*, *) \xrightarrow{\text{pyk}} \text{"deduction zero " conclude " end deduction"}]$

$[\text{Ded}_1(*, *, *) \xrightarrow{\text{pyk}} \text{"deduction one " conclude " condition " end deduction"}]$

$[\text{Ded}_2(*, *, *) \xrightarrow{\text{pyk}} \text{"deduction two " conclude " condition " end deduction"}]$

$[\text{Ded}_3(*, *, *, *) \xrightarrow{\text{pyk}} \text{"deduction three " conclude " condition " bound " end deduction"}]$

$[\text{Ded}_4(*, *, *, *) \xrightarrow{\text{pyk}} \text{"deduction four " conclude " condition " bound " end deduction"}]$

$[\text{Ded}_4^*(*, *, *, *) \xrightarrow{\text{pyk}} \text{"deduction four star " conclude " condition " bound " end deduction"}]$

$[\text{Ded}_5(*, *, *, *) \xrightarrow{\text{pyk}} \text{"deduction five " condition " bound " end deduction"}]$

$[\text{Ded}_6(*, *, *, *) \xrightarrow{\text{pyk}} \text{"deduction six " conclude " exception " bound " end"}]$

deduction”]

[Ded₆^{*}(*, *, *, *) $\xrightarrow{\text{pyk}}$ “deduction six star " conclude " exception " bound " end deduction”]

[Ded₇(*) $\xrightarrow{\text{pyk}}$ “deduction seven " end deduction”]

[Ded₈(*, *) $\xrightarrow{\text{pyk}}$ “deduction eight " bound " end deduction”]

[Ded₈^{*}(*, *) $\xrightarrow{\text{pyk}}$ “deduction eight star " bound " end deduction”]

[S $\xrightarrow{\text{pyk}}$ “system s”]

[Neg $\xrightarrow{\text{pyk}}$ “double negation”]

[MP $\xrightarrow{\text{pyk}}$ “rule mp”]

[Gen $\xrightarrow{\text{pyk}}$ “rule gen”]

[Ded $\xrightarrow{\text{pyk}}$ “deduction”]

[S1 $\xrightarrow{\text{pyk}}$ “axiom s one”]

[S2 $\xrightarrow{\text{pyk}}$ “axiom s two”]

[S3 $\xrightarrow{\text{pyk}}$ “axiom s three”]

[S4 $\xrightarrow{\text{pyk}}$ “axiom s four”]

[S5 $\xrightarrow{\text{pyk}}$ “axiom s five”]

[S6 $\xrightarrow{\text{pyk}}$ “axiom s six”]

[S7 $\xrightarrow{\text{pyk}}$ “axiom s seven”]

[S8 $\xrightarrow{\text{pyk}}$ “axiom s eight”]

[S9 $\xrightarrow{\text{pyk}}$ “axiom s nine”]

[Repetition $\xrightarrow{\text{pyk}}$ “repetition”]

[A1' $\xrightarrow{\text{pyk}}$ “lemma a one”]

[A2' $\xrightarrow{\text{pyk}}$ “lemma a two”]

[A4' $\xrightarrow{\text{pyk}}$ “lemma a four”]

[A5' $\xrightarrow{\text{pyk}}$ “lemma a five”]

[Prop 3.2a $\xrightarrow{\text{pyk}}$ “prop three two a”]

[Prop 3.2b $\xrightarrow{\text{pyk}}$ “prop three two b”]

[Prop 3.2c $\xrightarrow{\text{pyk}}$ “prop three two c”]

[Prop 3.2d $\xrightarrow{\text{pyk}}$ “prop three two d”]

[Prop 3.2e₁ $\xrightarrow{\text{pyk}}$ “prop three two e one”]

[Prop 3.2e₂ $\xrightarrow{\text{pyk}}$ “prop three two e two”]

[Prop 3.2e $\xrightarrow{\text{pyk}}$ “prop three two e”]

[Prop 3.2f₁ $\xrightarrow{\text{pyk}}$ “prop three two f one”]

[Prop 3.2f₂ $\xrightarrow{\text{pyk}}$ “prop three two f two”]

[Prop 3.2f $\xrightarrow{\text{pyk}}$ “prop three two f”]

[Prop 3.2g₁ $\xrightarrow{\text{pyk}}$ “prop three two g one”]

[Prop 3.2g₂ $\xrightarrow{\text{pyk}}$ "prop three two g two"]
 [Prop 3.2g $\xrightarrow{\text{pyk}}$ "prop three two g"]
 [Prop 3.2h₁ $\xrightarrow{\text{pyk}}$ "prop three two h one"]
 [Prop 3.2h₂ $\xrightarrow{\text{pyk}}$ "prop three two h two"]
 [Prop 3.2h $\xrightarrow{\text{pyk}}$ "prop three two h"]
 [Prop 3.2i $\xrightarrow{\text{pyk}}$ "prop three two i"]
 [Prop 3.2l₁ $\xrightarrow{\text{pyk}}$ "prop three two l one"]
 [Block₁(*, *, *) $\xrightarrow{\text{pyk}}$ "block one " state " cache " end block"]
 [Block₂(*) $\xrightarrow{\text{pyk}}$ "block two " end block"]
 [*hide $\xrightarrow{\text{pyk}}$ " " hide"]
 [MacroIndent(*) $\xrightarrow{\text{pyk}}$ "macro indent ""]
 [*' $\xrightarrow{\text{pyk}}$ " " suc"]
 [* = * $\xrightarrow{\text{pyk}}$ " " equal ""]
 [* \neq * $\xrightarrow{\text{pyk}}$ " " unequal ""]
 [* var $\xrightarrow{\text{pyk}}$ " " is object var"]
 [*#⁰* $\xrightarrow{\text{pyk}}$ " " avoid zero ""]
 [*#¹* $\xrightarrow{\text{pyk}}$ " " avoid one ""]
 [*#* $\xrightarrow{\text{pyk}}$ " " avoid star ""]
 [∃*: * $\xrightarrow{\text{pyk}}$ "exist " indeed ""]
 [∀*: * $\xrightarrow{\text{pyk}}$ "for all " indeed ""]
 [∀_{obj}*: * $\xrightarrow{\text{pyk}}$ "for all objects " indeed ""]
 [* \Rightarrow * $\xrightarrow{\text{pyk}}$ " " imply ""]
 [* \Leftrightarrow * $\xrightarrow{\text{pyk}}$ " " if and only if ""]
 [*#* $\xrightarrow{\text{pyk}}$ " " avoid ""]
 [* \supseteq * $\xrightarrow{\text{pyk}}$ " " object modus ponens ""]
 [Π*: * $\xrightarrow{\text{pyk}}$ "for all terms " indeed ""]
 [Begin*; * : End*; * $\xrightarrow{\text{pyk}}$ "block " line " end block ""]
 [Last block line * \gg *; * $\xrightarrow{\text{pyk}}$ "because " indeed " end line"]
 [Arbitrary \gg *; * $\xrightarrow{\text{pyk}}$ "any term " end line ""]
 [* | * $\xrightarrow{\text{pyk}}$ " " alternative ""]
 [→ $\xrightarrow{\text{pyk}}$ "evaluates to"]
 [* \\ * $\xrightarrow{\text{pyk}}$ " " safe row ""]
 [check $\xrightarrow{\text{pyk}}$ "check"]

3 T_EX definitions

$[[x \stackrel{\text{tex}}{=} y] \rightarrow "$
 $\quad \#1/\text{tex name}/\text{tex}.$
 $\quad \backslash\text{stackrel} \{ \backslash\text{circ} \} \{ = \} \#2.$
 $\quad]"]$

$[\text{RootVisible}(x) \xrightarrow{\text{tex}} "\#1/\text{tex name}/\text{tex}."]$

$[\text{RootVisible}(x) \xrightarrow{\text{name}} "$
 $\quad \text{RootVisible}(\#1.$
 $\quad)"]$

$[x^{\text{hide}} \xrightarrow{\text{tex}} "\#1.$
 $\quad \{ \}^{\{ \text{hide} \} }"]$

$[x' \xrightarrow{\text{tex}} "\#1.$
 $\quad \{ \}"]$

$[x = y \xrightarrow{\text{tex}} "\#1.$
 $\quad = \#2."]$

$[x \neq y \xrightarrow{\text{tex}} "\#1.$
 $\quad \backslash\text{neq} \#2."]$

$[x \Rightarrow y \xrightarrow{\text{tex}} "\#1.$
 $\quad \backslash\text{Rightarrow} \#2."]$

$[x \Leftrightarrow y \xrightarrow{\text{tex}} "\#1.$
 $\quad \backslash\text{Leftrightarrow} \#2."]$

$[x | y \xrightarrow{\text{tex}} "\#1.$
 $\quad \backslash\text{mathrel} \{ | \} \#2."]$

$[\exists x: y \xrightarrow{\text{tex}} "$
 $\quad \backslash\text{exists} \#1.$
 $\quad \backslash\text{colon} \#2."]$

$[\forall x: y \xrightarrow{\text{tex}} "$
 $\quad \backslash\text{forall} \#1.$
 $\quad \backslash\text{colon} \#2."]$

$[\forall_{\text{obj}} x: y \xrightarrow{\text{tex}} "$
 $\quad \backslash\text{forall}_{\{ \text{obj} \}} \#1.$
 $\quad \backslash\text{colon} \#2."]$

$[\prod x: y \xrightarrow{\text{tex}} "$
 $\quad \backslash\text{Pi} \#1.$
 $\quad \backslash\text{colon} \#2."]$

```
[Arbitrary >> i; p  $\xrightarrow{\text{tex}}$  “
  \newline \makebox [0.1\textwidth ][l]{\$
  \if \relax \csname lgwproofline\endcsname L-? \else
  \global \advance \lgwproofline by 1
  L\ifnum \lgwproofline <10 0\fi \number \lgwproofline
  \fi
  \$:}\makebox [0.4\textwidth ][l]{\$Arbitrary{\}\gg{\}\$}\quad
  \parbox [t]{0.4\textwidth }{\$#1.
  \$\hfill \makebox [0mm][l]{\quad ;}}#2.”]
```

```
[Arbitrary >> i; p  $\xrightarrow{\text{name}}$  “
  Arbitrary \gg #1.
  ; #2.”]
```

```
[x\y  $\xrightarrow{\text{tex}}$  “#1.
  \{\}\#2.”]
```

```
[x\y  $\xrightarrow{\text{name}}$  “#1.
  \backslash \backslash #2.”]
```

```
[A  $\xrightarrow{\text{tex}}$  “
  A”]
```

```
[R  $\xrightarrow{\text{tex}}$  “
  R”]
```

```
[C  $\xrightarrow{\text{tex}}$  “
  C”]
```

```
[T  $\xrightarrow{\text{tex}}$  “
  T”]
```

```
[L  $\xrightarrow{\text{tex}}$  “
  L”]
```

```
[{x}  $\xrightarrow{\text{tex}}$  “
  \{#1.
  \}”]
```

```
[S  $\xrightarrow{\text{tex}}$  “
  S”]
```

```
[Neg  $\xrightarrow{\text{tex}}$  “
  Neg”]
```

```
[S1  $\xrightarrow{\text{tex}}$  “
  S1”]
```


[S2 $\xrightarrow{\text{tex}}$ “
S2”]

[S3 $\xrightarrow{\text{tex}}$ “
S3”]

[S4 $\xrightarrow{\text{tex}}$ “
S4”]

[S5 $\xrightarrow{\text{tex}}$ “
S5”]

[S6 $\xrightarrow{\text{tex}}$ “
S6”]

[S7 $\xrightarrow{\text{tex}}$ “
S7”]

[S8 $\xrightarrow{\text{tex}}$ “
S8”]

[S9 $\xrightarrow{\text{tex}}$ “
S9”]

[MP $\xrightarrow{\text{tex}}$ “
MP”]

[Gen $\xrightarrow{\text{tex}}$ “
Gen”]

[Ded $\xrightarrow{\text{tex}}$ “
Ded”]

[Repetition $\xrightarrow{\text{tex}}$ “
Repetition”]

[A1' $\xrightarrow{\text{tex}}$ “
A1”’]

[A2' $\xrightarrow{\text{tex}}$ “
A2”’]

[A4' $\xrightarrow{\text{tex}}$ “
A4”’]

[A5' $\xrightarrow{\text{tex}}$ “
A5”’]

[$x^{\text{var}} \xrightarrow{\text{tex}}$ “#1.
 $\{\}^{\{\text{var}\}}$ ”]

[$x\#y \xrightarrow{\text{tex}}$ “#1.
 $\#\.#2.$ ”]

[$x\#^0y \xrightarrow{\text{tex}}$ “#1.
 $\#\.#0\#2.$ ”]

[$x\#^1y \xrightarrow{\text{tex}}$ “#1.
 $\#\.#1\#2.$ ”]

[$x\#^*y \xrightarrow{\text{tex}}$ “#1.
 $\#\.#*\#2.$ ”]

[$\langle x\equiv y|z:=u \rangle \xrightarrow{\text{tex}}$ “
 $\langle \rangle \#1.$
 $\{\equiv\} \#2.$
 $| \#3.$
 $\{:=\} \#4.$
 $\langle \rangle$ ”]

[$\langle x\equiv^0y|z:=u \rangle \xrightarrow{\text{tex}}$ “
 $\langle \rangle \#1.$
 $\{\equiv\}^0 \#2.$
 $| \#3.$
 $\{:=\} \#4.$
 $\langle \rangle$ ”]

[$\langle x\equiv^1y|z:=u \rangle \xrightarrow{\text{tex}}$ “
 $\langle \rangle \#1.$
 $\{\equiv\}^1 \#2.$
 $| \#3.$
 $\{:=\} \#4.$
 $\langle \rangle$ ”]

[$\langle x\equiv^*y|z:=u \rangle \xrightarrow{\text{tex}}$ “
 $\langle \rangle \#1.$
 $\{\equiv\}^* \#2.$
 $| \#3.$
 $\{:=\} \#4.$
 $\langle \rangle$ ”]

[$\text{Ded}(x, y) \xrightarrow{\text{tex}}$ “
 $\text{Ded}(\#1.$
 $, \#2.$
 $)$ ”]

[Ded₀(x, y) $\xrightarrow{\text{tex}}$ “
Ded.0(#1.
, #2.
)”]

[Ded₁(x, y, z) $\xrightarrow{\text{tex}}$ “
Ded.1(#1.
, #2.
, #3.
)”]

[Ded₂(x, y, z) $\xrightarrow{\text{tex}}$ “
Ded.2(#1.
, #2.
, #3.
)”]

[Ded₃(x, y, z, u) $\xrightarrow{\text{tex}}$ “
Ded.3(#1.
, #2.
, #3.
, #4.
)”]

[Ded₄(x, y, z, u) $\xrightarrow{\text{tex}}$ “
Ded.4(#1.
, #2.
, #3.
, #4.
)”]

[Ded₄^{*}(x, y, z, u) $\xrightarrow{\text{tex}}$ “
Ded.4^{*}(#1.
, #2.
, #3.
, #4.
)”]

[Ded₅(x, y, z) $\xrightarrow{\text{tex}}$ “
Ded.5(#1.
, #2.
, #3.
)”]

[Ded₆(p, c, e, b) $\xrightarrow{\text{tex}}$ “
Ded.6(#1.
, #2.
)”]

, #3.
 , #4.
)”]

[Ded₆^{*}(p, c, e, b) $\xrightarrow{\text{tex}}$ “
 Ded_6^*(#1.
 , #2.
 , #3.
 , #4.
)”]

[Ded₇(p) $\xrightarrow{\text{tex}}$ “
 Ded_7(#1.
)”]

[Ded₈(p, b) $\xrightarrow{\text{tex}}$ “
 Ded_8(#1.
 , #2.
)”]

[Ded₈^{*}(p, b) $\xrightarrow{\text{tex}}$ “
 Ded_8^*(#1.
 , #2.
)”]

[Begin b;l : End; p $\xrightarrow{\text{tex}}$ “
 \newline \makebox [0.1\textwidth]{}%
 \parbox [b]{0.4\textwidth }{\raggedright
 \setlength {\parindent }{-0.1\textwidth }%
 \makebox [0.1\textwidth][l]{\$
 \if \relax \cname lgwproofline\endcname L_? \else
 \global \advance \lgwproofline by 1
 L\ifnum \lgwproofline <10 0\fi \number \lgwproofline
 \fi
 \$:}\$Block {} \gg {}\$}\quad
 \parbox [t]{0.4\textwidth }{\$Begin
 \$\hfill \makebox [0mm][l]{\quad ;}}#1.
 \newline \makebox [0.1\textwidth]{}%
 \parbox [b]{0.4\textwidth }{\raggedright
 \setlength {\parindent }{-0.1\textwidth }%
 \makebox [0.1\textwidth][l]{\$#2.
 \$:}\$Block {} \gg {}\$}\quad
 \parbox [t]{0.4\textwidth }{\$End
 \$\hfill \makebox [0mm][l]{\quad ;}}#3.”]

[Begin b;l : End; p $\xrightarrow{\text{name}}$ “
 Begin \, #1.

; #2.
: End ; #3.”]

[Last block line a \gg i; $\xrightarrow{\text{tex}}$ “
 \backslash newline \backslash makebox [0.1 \backslash textwidth]{}%
 \backslash parbox [b]{0.4 \backslash textwidth }{\raggedright
 \backslash setlength {\parindent }{-0.1 \backslash textwidth }%
 \backslash makebox [0.1 \backslash textwidth][l]{ $\$$
 \backslash if \backslash relax \backslash csname lgwproofline \backslash endcsname L-? \backslash else
 \backslash global \backslash advance \backslash lgwproofline by 1
L\ifnum \backslash lgwproofline <10 0\fi \backslash number \backslash lgwproofline
 \backslash fi
 $\$$:} $\$$ #1.
{ } \backslash gg { } $\$$ }\quad
 \backslash parbox [t]{0.4 \backslash textwidth }{ $\$$ #2.
 $\$$ \hfill \backslash makebox [0mm][l]{\quad ;}}”]
[Last block line a \gg i; $\xrightarrow{\text{name}}$ “
Last\ block\ line \, #1.
 \backslash gg #2.
 \backslash , ;”]

[$x \supseteq y \xrightarrow{\text{tex}}$ “#1.
 \backslash unrhd #2.”]

[Prop 3.2a $\xrightarrow{\text{tex}}$ “
Prop\ 3.2a”]

[Prop 3.2b $\xrightarrow{\text{tex}}$ “
Prop\ 3.2b”]

[Prop 3.2c $\xrightarrow{\text{tex}}$ “
Prop\ 3.2c”]

[Prop 3.2d $\xrightarrow{\text{tex}}$ “
Prop\ 3.2d”]

[Prop 3.2e₁ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2e_1”]

[Prop 3.2e₂ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2e_2”]

[Prop 3.2e $\xrightarrow{\text{tex}}$ “
Prop\ 3.2e”]

[Prop 3.2f₁ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2f_1”]

[Prop 3.2f₂ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2f_2”]

[Prop 3.2f $\xrightarrow{\text{tex}}$ “
Prop\ 3.2f”]

[Prop 3.2g₁ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2g_1”]

[Prop 3.2g₂ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2g_2”]

[Prop 3.2g $\xrightarrow{\text{tex}}$ “
Prop\ 3.2g”]

[Prop 3.2h₁ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2h_1”]

[Prop 3.2h₂ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2h_2”]

[Prop 3.2h $\xrightarrow{\text{tex}}$ “
Prop\ 3.2h”]

[Prop 3.2i $\xrightarrow{\text{tex}}$ “
Prop\ 3.2i”]

[Prop 3.2l₁ $\xrightarrow{\text{tex}}$ “
Prop\ 3.2l_1”]

[MacroIndent(x) $\xrightarrow{\text{tex}}$ “
\$%
\leftskip=1em%
\$#1.”]

[MacroIndent(x) $\xrightarrow{\text{name}}$ “
MacroIndent(#1.
)”]

[Block₁(t, s, c) $\xrightarrow{\text{tex}}$ “
Block_1(#1.
, #2.
, #3.
)”]

[Block₂(b) $\xrightarrow{\text{tex}}$ “
Block_2(#1.
)”]

[$\xrightarrow{\text{tex}}$ “

\rightarrow ”]

3.1 Variables

[$\bar{x} \xrightarrow{\text{tex}}$ “\overline{\#1.}”]

[$a \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[a \doteq \bar{a}]])$]

[$b \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[b \doteq \bar{b}]])$]

[$c \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[c \doteq \bar{c}]])$]

[$d \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[d \doteq \bar{d}]])$]

[$e \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[e \doteq \bar{e}]])$]

[$f \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[f \doteq \bar{f}]])$]

[$g \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[g \doteq \bar{g}]])$]

[$h \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[h \doteq \bar{h}]])$]

[$i \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[i \doteq \bar{i}]])$]

[$j \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[j \doteq \bar{j}]])$]

[$k \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[k \doteq \bar{k}]])$]

[$l \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[l \doteq \bar{l}]])$]

[$m \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[m \doteq \bar{m}]])$]

[$n \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[n \doteq \bar{n}]])$]

[$o \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[o \doteq \bar{o}]])$]

[$p \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[p \doteq \bar{p}]])$]

[$q \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[q \doteq \bar{q}]])$]

[$r \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[r \doteq \bar{r}]])$]

[$s \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[s \doteq \bar{s}]])$]

[$t \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[t \doteq \bar{t}]])$]

[$u \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[u \doteq \bar{u}]])$]

[$v \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[v \doteq \bar{v}]])$]

[$w \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[w \doteq \bar{w}]])$]

[$x \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[x \doteq \bar{x}]])$]

[$y \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[y \doteq \bar{y}]])$]

[$z \xrightarrow{\text{macro}}$ $\lambda t.\lambda s.\lambda c.\tilde{\mathcal{M}}_4(t, s, c, [[z \doteq \bar{z}]])$]

[$a \xrightarrow{\text{tex}}$ “

\mathit{a}”]

[$b \xrightarrow{\text{tex}}$ “

\mathit{b}”]

[$c \xrightarrow{\text{tex}}$ “

\mathit{c}”]

[$d \xrightarrow{\text{tex}}$ “

\mathit{d}”]

[$e \xrightarrow{\text{tex}}$ “

\mathit{e}”]

$[f \xrightarrow{\text{tex}} \text{“} \backslash\mathit{f}\text{”}]$
 $[g \xrightarrow{\text{tex}} \text{“} \backslash\mathit{g}\text{”}]$
 $[h \xrightarrow{\text{tex}} \text{“} \backslash\mathit{h}\text{”}]$
 $[i \xrightarrow{\text{tex}} \text{“} \backslash\mathit{i}\text{”}]$
 $[j \xrightarrow{\text{tex}} \text{“} \backslash\mathit{j}\text{”}]$
 $[k \xrightarrow{\text{tex}} \text{“} \backslash\mathit{k}\text{”}]$
 $[l \xrightarrow{\text{tex}} \text{“} \backslash\mathit{l}\text{”}]$
 $[m \xrightarrow{\text{tex}} \text{“} \backslash\mathit{m}\text{”}]$
 $[n \xrightarrow{\text{tex}} \text{“} \backslash\mathit{n}\text{”}]$
 $[o \xrightarrow{\text{tex}} \text{“} \backslash\mathit{o}\text{”}]$
 $[p \xrightarrow{\text{tex}} \text{“} \backslash\mathit{p}\text{”}]$
 $[q \xrightarrow{\text{tex}} \text{“} \backslash\mathit{q}\text{”}]$
 $[r \xrightarrow{\text{tex}} \text{“} \backslash\mathit{r}\text{”}]$
 $[s \xrightarrow{\text{tex}} \text{“} \backslash\mathit{s}\text{”}]$
 $[t \xrightarrow{\text{tex}} \text{“} \backslash\mathit{t}\text{”}]$
 $[u \xrightarrow{\text{tex}} \text{“} \backslash\mathit{u}\text{”}]$
 $[v \xrightarrow{\text{tex}} \text{“} \backslash\mathit{v}\text{”}]$
 $[w \xrightarrow{\text{tex}} \text{“} \backslash\mathit{w}\text{”}]$
 $[x \xrightarrow{\text{tex}} \text{“} \backslash\mathit{x}\text{”}]$
 $[y \xrightarrow{\text{tex}} \text{“} \backslash\mathit{y}\text{”}]$

$[z \xrightarrow{\text{tex}} \text{"} \backslash\text{mathit}\{z\}\text{"}]$

4 Priority table

$[\text{check} \xrightarrow{\text{prio}}$

Preassociative

[check], [base], [bracket * end bracket], [big bracket * end bracket], [\$ * \$],
[flush left *], [x], [y], [z], [[* \bowtie *]], [[* \rightarrow *]], [pyk], [tex], [name], [prio], [*], [T],
 [if(*, *, *)], [[* \Rightarrow *]], [val], [claim], [\perp], [f(*)], [(*)^f], [F], [0], [1], [2], [3], [4], [5], [6],
 [7], [8], [9], [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j],
 [k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [(*)^M], [If(*, *, *)],
 [array{*} * end array], [l], [c], [r], [empty], [(* | * := *)], [\mathcal{M} (*)], [$\tilde{\mathcal{U}}$ (*)], [\mathcal{U} (*)],
 [\mathcal{U}^M (*)], [**apply**(*, *)], [**apply**₁(*, *)], [identifier(*)], [identifier₁(*, *)], [array-
 plus(*, *)], [array-remove(*, *, *)], [array-put(*, *, *, *)], [array-add(*, *, *, *, *)],
 [bit(*, *)], [bit₁(*, *)], [rack], ["vector"], ["bibliography"], ["dictionary"],
 ["body"], ["codex"], ["expansion"], ["code"], ["cache"], ["diagnose"], ["pyk"],
 ["tex"], ["texname"], ["value"], ["message"], ["macro"], ["definition"],
 ["unpack"], ["claim"], ["priority"], ["lambda"], ["apply"], ["true"], ["if"],
 ["quote"], ["proclaim"], ["define"], ["introduce"], ["hide"], ["pre"], ["post"],
 [\mathcal{E} (*, *, *)], [\mathcal{E}_2 (*, *, *, *)], [\mathcal{E}_3 (*, *, *, *)], [\mathcal{E}_4 (*, *, *, *)], [**lookup**(*, *, *)],
 [**abstract**(*, *, *, *)], [[*]], [\mathcal{M} (*, *, *)], [\mathcal{M}_2 (*, *, *, *)], [\mathcal{M}^* (*, *, *)], [macro],
 [s₀], [**zip**(*, *)], [**assoc**₁(*, *, *)], [(*)^P], [self], [[* \doteq *]], [[* $\dot{=}$ *]], [[* $\ddot{=}$ *]],
 [[* $\stackrel{\text{pyk}}{=}$ *]], [[* $\stackrel{\text{tex}}{=}$ *]], [[* $\stackrel{\text{name}}{=}$ *]], [**Priority table**[*]], [$\tilde{\mathcal{M}}_1$], [$\tilde{\mathcal{M}}_2$ (*)], [$\tilde{\mathcal{M}}_3$ (*)],
 [$\tilde{\mathcal{M}}_4$ (*, *, *, *)], [\mathcal{M} (*, *, *)], [$\tilde{\mathcal{Q}}$ (*, *, *)], [$\tilde{\mathcal{Q}}_2$ (*, *, *)], [$\tilde{\mathcal{Q}}_3$ (*, *, *, *)], [$\tilde{\mathcal{Q}}^*$ (*, *, *)],
 [(*)], [(*)], [display(*)], [statement(*)], [[*[·]]], [[*⁻]], [**aspect**(*, *)],
 [**aspect**(*, *, *)], [(*)], [**tuple**₁(*)], [**tuple**₂(*)], [let₂(*, *)], [let₁(*, *)],
 [[* $\stackrel{\text{claim}}{=}$ *]], [checker], [**check**(*, *)], [**check**₂(*, *, *)], [**check**₃(*, *, *)],
 [**check**^{*}(*, *)], [**check**₂^{*}(*, *, *)], [[*[·]]], [[*⁻]], [[*^o]], [msg], [[* $\stackrel{\text{msg}}{=}$ *]], [<stmt>],
 [stmt], [[* $\stackrel{\text{stmt}}{=}$ *]], [HeadNil'], [HeadPair'], [Transitivity'], [\perp], [Contra'], [T_E'],
 [L₁], [*], [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], [(* | * := *)], [(* * | * := *)], [∅], [Remainder],
 [(*)^v], [intro(*, *, *, *)], [intro(*, *, *)], [error(*, *)], [error₂(*, *)], [proof(*, *, *)],
 [proof₂(*, *)], [S(*, *)], [S¹(*, *)], [S[>](*, *)], [S[▷]₁(*, *, *)], [S^E(*, *)], [S^E₁(*, *, *)],
 [S⁺(*, *)], [S⁺₁(*, *, *)], [S⁻(*, *)], [S⁻₁(*, *, *)], [S^{*}(*, *)], [S^{*}₁(*, *, *)],
 [S²₂(*, *, *, *)], [S[⊗](*, *)], [S[⊗]₁(*, *, *)], [S⁺(*, *)], [S⁺₁(*, *, *, *)], [S⁺₁(*, *)],
 [S⁺₁(*, *, *, *)], [S^{i.e.}(*, *)], [S^{i.e.}₁(*, *, *, *)], [S^{i.e.}₂(*, *, *, *, *)], [S^v(*, *)],
 [S^v₁(*, *, *, *)], [S^v₁(*, *)], [Sⁱ₁(*, *, *)], [Sⁱ₂(*, *, *, *)], [T(*)], [claims(*, *, *)],
 [claims₂(*, *, *)], [<proof>], [proof], [[**Lemma** * : *]], [[**Proof of** * : *]],
 [[* **lemma** * : *]], [[* **antilemma** * : *]], [[* **rule** * : *]], [[* **antirule** * : *]],
 [verifier], [V₁(*)], [V₂(*, *)], [V₃(*, *, *, *)], [V₄(*, *)], [V₅(*, *, *, *)], [V₆(*, *, *, *)],
 [V₇(*, *, *, *)], [Cut(*, *)], [Head_⊕(*)], [Tail_⊕(*)], [rule₁(*, *)], [rule(*, *)],
 [Rule tactic], [Plus(*, *)], [[**Theory** *]], [theory₂(*, *)], [theory₃(*, *)],

[theory₄(* , * , *)], [HeadNil''], [HeadPair''], [Transitivity''], [Contra''], [HeadNil], [HeadPair], [Transitivity], [Contra], [T_E], [ragged right], [ragged right expansion], [param(* , * , *)], [param^{*}(* , * , *)], [inst(* , *)], [inst^{*}(* , *)], [occur(* , * , *)], [occur^{*}(* , * , *)], [unify(* = * , *)], [unify^{*}(* = * , *)], [unify₂(* = * , *)], [L_a], [L_b], [L_c], [L_d], [L_e], [L_f], [L_g], [L_h], [L_i], [L_j], [L_k], [L_l], [L_m], [L_n], [L_o], [L_p], [L_q], [L_r], [L_s], [L_t], [L_u], [L_v], [L_w], [L_x], [L_y], [L_z], [L_A], [L_B], [L_C], [L_D], [L_E], [L_F], [L_G], [L_H], [L_I], [L_J], [L_K], [L_L], [L_M], [L_N], [L_O], [L_P], [L_Q], [L_R], [L_S], [L_T], [L_U], [L_V], [L_W], [L_X], [L_Y], [L_Z], [L_?], [Reflexivity], [Reflexivity₁], [Commutativity], [Commutativity₁], [<tactic>], [tactic], [[* ^{tactic}≡ *]], [P(* , * , *)], [P^{*}(* , * , *)], [p₀], [conclude₁(* , *)], [conclude₂(* , * , *)], [conclude₃(* , * , * , *)], [conclude₄(* , *)], [[* ^o≡ *]], [RootVisible(*)], [A], [R], [C], [T], [L], [{*}], [¯], [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], [{*≡* | * :=*}], [{*≡⁰* | * :=*}], [{*≡¹* | * :=*}], [{*≡^{*}* | * :=*}], [Ded(* , *)], [Ded₀(* , *)], [Ded₁(* , * , *)], [Ded₂(* , * , *)], [Ded₃(* , * , * , *)], [Ded₄(* , * , * , *)], [Ded₄^{*}(* , * , * , *)], [Ded₅(* , * , *)], [Ded₆(* , * , * , *)], [Ded₆^{*}(* , * , * , *)], [Ded₇(*)], [Ded₈(* , *)], [Ded₈^{*}(* , *)], [S], [Neg], [MP], [Gen], [Ded], [S1], [S2], [S3], [S4], [S5], [S6], [S7], [S8], [S9], [Repetition], [A1'], [A2'], [A4'], [A5'], [Prop 3.2a], [Prop 3.2b], [Prop 3.2c], [Prop 3.2d], [Prop 3.2e₁], [Prop 3.2e₂], [Prop 3.2e], [Prop 3.2f₁], [Prop 3.2f₂], [Prop 3.2f], [Prop 3.2g₁], [Prop 3.2g₂], [Prop 3.2g], [Prop 3.2h₁], [Prop 3.2h₂], [Prop 3.2h], [Prop 3.2i], [Prop 3.2l₁], [Block₁(* , * , *)], [Block₂(*)];

Preassociative

[*_{*}], [* /indexintro(* , * , * , *)], [* /intro(* , * , *)], [* /bothintro(* , * , * , *)], [* /nameintro(* , * , * , *)], [* '], [* [*]], [* [* → *]], [* [* ⇒ *]], [* 0], [* 1], [0b], [* -color(*)], [* -color^{*}(*)], [* ^H], [* ^T], [* ^U], [* ^h], [* ^t], [* ^s], [* ^c], [* ^d], [* ^a], [* ^C], [* ^M], [* ^B], [* ^T], [* ⁱ], [* ^d], [* ^R], [* ⁰], [* ¹], [* ²], [* ³], [* ⁴], [* ⁵], [* ⁶], [* ⁷], [* ⁸], [* ⁹], [* ^E], [* ^V], [* ^C], [* ^{C^{*}}], [* _{hide}];

Preassociative

[“ ”], [], [(*)^t], [string(*) + *], [string(*) ++ *], [*], [*], [* !], [* "], [* #], [* \$], [* %], [* &], [* *], [(*)], [(*)], [**], [+*], [, *], [-*], [.*], [/ *], [0*], [1*], [2*], [3*], [4*], [5*], [6*], [7*], [8*], [9*], [:*], [;*], [<*], [= *], [>*], [?*], [@*], [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 *], [{ * }, [| *], [} *], [~ *], [Preassociative * ; *], [Postassociative * ; *], [[*], [*], [priority * end], [newline *], [macro newline *], [MacroIndent(*)];

Preassociative

[* ' *], [* ' *];

Preassociative

[* '];

Preassociative

[* . *], [* . 0 *];

Preassociative

[* + *], [* + 0 *], [* + 1 *], [* - *], [* - 0 *], [* - 1 *];

Preassociative

$[* \cup \{*\}], [* \cup *], [* \setminus \{*\}];$

Postassociative

$[* \dot{.} *], [* \dot{:} *], [* \dot{:} *], [* \underline{+2* *}], [* \dot{:} *], [* +2* *];$

Postassociative

$[*, *];$

Preassociative

$[* \overset{B}{\approx} *], [* \overset{D}{\approx} *], [* \overset{C}{\approx} *], [* \overset{P}{\approx} *], [* \approx *], [* = *], [* \overset{+}{\rightarrow} *], [* \overset{t}{=} *], [* \overset{t^*}{=} *], [* \overset{r}{=} *],$
 $[* \in_t *], [* \subseteq_T *], [* \overset{T}{=} *], [* \overset{s}{=} *], [* \text{free in } *], [* \text{free in}^* *], [* \text{free for } * \text{ in } *],$
 $[* \text{free for}^* * \text{ in } *], [* \in_c *], [* < *], [* <' *], [* \leq' *], [* = *], [* \neq *], [*^{\text{var}}],$
 $[* \#^0 *], [* \#^1 *], [* \#^* *];$

Preassociative

$[\neg *];$

Preassociative

$[* \wedge *], [* \ddot{\wedge} *], [* \tilde{\wedge} *], [* \wedge_c *];$

Preassociative

$[* \vee *], [* \parallel *], [* \ddot{\vee} *];$

Preassociative

$[\exists *: *], [\forall *: *], [\forall_{\text{obj}} *: *];$

Postassociative

$[* \dot{\Rightarrow} *], [* \Rightarrow *], [* \Leftrightarrow *];$

Postassociative

$[* : *], [* \text{spy } *], [* ! *];$

Preassociative

$[* \left\{ \begin{array}{l} * \\ * \end{array} \right.];$

Preassociative

$[\lambda * .*], [\Lambda * .*], [\Lambda *], [\text{if } * \text{ then } * \text{ else } *], [\text{let } * = * \text{ in } *], [\text{let } * \doteq * \text{ in } *];$

Preassociative

$[* \# *];$

Preassociative

$[*^I], [*^\triangleright], [*^V], [*^+], [*^-], [*^*];$

Preassociative

$[* @ *], [* \triangleright *], [* \blacktriangleright *], [* \gg *], [* \triangleright *];$

Postassociative

$[* \vdash *], [* \dashv *], [* \text{i.e. } *];$

Preassociative

$[\forall *: *], [\Pi *: *];$

Postassociative

$[* \oplus *];$

Postassociative

$[*, *];$

Preassociative

$[* \text{ proves } *];$

Preassociative

[* **proof of** * : *], [Line * : * \gg *; *], [Last line * \gg * \square],
[Line * : Premise \gg *; *], [Line * : Side-condition \gg *; *], [Arbitrary \gg *; *],
[Local \gg * = *; *], [Begin *; * : End; *], [Last block line * \gg *; *],
[Arbitrary \gg *; *];

Postassociative

[* | *];

Postassociative

[* , *], [* [*]*];

Preassociative

[*&*], [\rightarrow];

Preassociative

[**], [* linebreak[4] *], [**];]