

Logiweb sequent calculus, Chores

Klaus Grue

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1 Test cases

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2 Pyk definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[$\text{Ded}_6(*, *, *, *) \xrightarrow{\text{pyk}}$ "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”]
 [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 ”]
 [* ≠ * $\xrightarrow{\text{pyk}}$ “" 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 ”]
 [* ⇒ * $\xrightarrow{\text{pyk}}$ “" imply ”]
 [* ⇔ * $\xrightarrow{\text{pyk}}$ “" if and only if ”]
 [*## $\xrightarrow{\text{pyk}}$ “" avoid ”]
 [* ⊇ * $\xrightarrow{\text{pyk}}$ “" object modus ponens ”]
 [Π*: * $\xrightarrow{\text{pyk}}$ “for all terms " indeed ”]
 [Begin*; * : End*; * $\xrightarrow{\text{pyk}}$ “block " line " end block ”]
 [Last block line * ≫ *; * $\xrightarrow{\text{pyk}}$ “because " indeed " end line”]
 [Arbitrary ≫ *; * $\xrightarrow{\text{pyk}}$ “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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

```
[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.
 $\backslash\#.\#2.$ ”]

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

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

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

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

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

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

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

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

[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.
{ }\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”]

[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 ”]

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

4 Priority table

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

Preassociative

[check], [base], [bracket * end bracket], [big bracket * end bracket], [\$ * \$],
[flush left *], [x], [y], [z], [[* \bowtie *]], [[* $\xrightarrow{*}$ *]], [pyk], [tex], [name], [prio], [*], [T],
 [if(*, *, *)], [[* $\xrightarrow{*}$ *]], [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 *]], [[* \doteq *]], [[* \doteq *]],
 [[* $\stackrel{\text{pyk}}{=}$ *]], [[* $\stackrel{\text{tex}}{=}$ *]], [[* $\stackrel{\text{name}}{=}$ *]], [**Priority table**[*]], [$\tilde{\mathcal{M}}_1$], [$\tilde{\mathcal{M}}_2(*, *)$], [$\tilde{\mathcal{M}}_3(*, *)$],
 [$\tilde{\mathcal{M}}_4(*, *, *, *)$], [$\mathcal{M}(*, *, *)$], [$\mathcal{Q}(*, *, *)$], [$\tilde{\mathcal{Q}}_2(*, *, *)$], [$\tilde{\mathcal{Q}}_3(*, *, *, *)$], [$\tilde{\mathcal{Q}}^*(*, *, *, *)$],
 [(*)], [(*)], [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], [x], [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(*, *)], [S^f(*, *)], [S[▷](*, *)], [S₁[▷](*, *, *)], [S^E(*, *)], [S₁^E(*, *, *)],
 [S⁺(*, *)], [S₁⁺(*, *, *)], [S⁻(*, *)], [S₁⁻(*, *, *)], [S^{*}(*, *)], [S₁^{*}(*, *, *)],
 [S₂^{*}(*, *, *, *)], [S[⊗](*, *)], [S₁[⊗](*, *, *, *)], [S[†](*, *)], [S₁[†](*, *, *, *)], [S[‡](*, *)],
 [S₁[‡](*, *, *, *)], [S^{i.e.}(*, *)], [S₁^{i.e.}(*, *, *, *)], [S₂^{i.e.}(*, *, *, *, *)], [S^v(*, *)],
 [S₁^v(*, *, *, *)], [S[·](*, *)], [S₁[·](*, *, *)], [S₂[·](*, *, *, *)], [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], [parm(*, *, *)], [parm^{*}(*, *, *)], [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], [Block₁(*, *, *)], [Block₂(*)];

Preassociative

[*-{*}], [* /indexintro(*, *, *, *)], [* /intro(*, *, *)], [* /bothintro(*, *, *, *, *)], [* /nameintro(*, *, *, *)], [*'], [* [*]], [* [* → *]], [* [* ⇒ *]], [* 0], [* 1], [0b], [* -color(*)], [* -color*(*)], [*^H], [*^T], [*^U], [*^h], [*^t], [*^s], [*^c], [*^d], [*^a], [*^C], [*^M], [*^B], [*^r], [*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

[* ∪ { * }, [* ∪ *], [* \ { * }];

Postassociative

[* . : *], [* . : *], [* : : *], [* + 2 * *], [* : : *], [* + 2 * *];

Postassociative

[*, *];

Preassociative

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

Preassociative

[\neg *];

Preassociative

[* \wedge *], [* $\overset{\sim}{\wedge}$ *], [* $\overset{\sim}{\wedge}$ *], [* \wedge_c *];

Preassociative

[* \vee *], [* \parallel *], [* $\overset{\sim}{\vee}$ *];

Preassociative

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

Postassociative

[* $\overset{\sim}{\Rightarrow}$ *], [* \Rightarrow *], [* \Leftrightarrow *];

Postassociative

[* : *], [* spy *], [*!*];

Preassociative

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

Preassociative

[λ * .*], [Λ * .*], [Λ *], [if * then * else *], [let * = * in *], [let * $\overset{\sim}{=}$ * in *];

Preassociative

[*#*];

Preassociative

[*^I], [*^{\triangleright}], [*^V], [*⁺], [*⁻], [*^{*}];

Preassociative

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

Postassociative

[* \vdash *], [* \vdash *], [* i.e. *];

Preassociative

[\forall *: *], [Π *: *];

Postassociative

[* \oplus *];

Postassociative

[*; *];

Preassociative

[* 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

[*&*, [→];

Preassociative

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