

# Logiweb sequent calculus, Chores

Klaus Grue

30. juni 2006

## Indhold

<b>1</b>	<b>Test cases</b>	<b>1</b>
<b>2</b>	<b>Pyk definitions</b>	<b>1</b>
<b>3</b>	<b>T<sub>E</sub>X definitions</b>	<b>5</b>
3.1	Variables . . . . .	14
<b>4</b>	<b>Numerals</b>	<b>14</b>
<b>5</b>	<b>Priority table</b>	<b>15</b>

## 1 Test cases

## 2 Pyk definitions

- $[\overline{0} \xrightarrow{\text{pyk}} \text{“numeral zero”}]$
- $[\overline{1} \xrightarrow{\text{pyk}} \text{“numeral one”}]$
- $[\overline{2} \xrightarrow{\text{pyk}} \text{“numeral two”}]$
- $[\overline{3} \xrightarrow{\text{pyk}} \text{“numeral three”}]$
- $[\overline{4} \xrightarrow{\text{pyk}} \text{“numeral four”}]$
- $[\overline{5} \xrightarrow{\text{pyk}} \text{“numeral five”}]$
- $[\overline{6} \xrightarrow{\text{pyk}} \text{“numeral six”}]$
- $[\overline{7} \xrightarrow{\text{pyk}} \text{“numeral seven”}]$
- $[\overline{8} \xrightarrow{\text{pyk}} \text{“numeral eight”}]$
- $[\overline{9} \xrightarrow{\text{pyk}} \text{“numeral nine”}]$
- $[\overline{n} \xrightarrow{\text{pyk}} \text{“numeral n”}]$
- $[\text{rule div} \xrightarrow{\text{pyk}} \text{“rule div”}]$
- $[\text{R} \xrightarrow{\text{pyk}} \text{“rule r”}]$

- [R1  $\xrightarrow{\text{pyk}}$  “rule r one”]
- [R2  $\xrightarrow{\text{pyk}}$  “rule r two”]
- [R3  $\xrightarrow{\text{pyk}}$  “rule r three”]
- [R4  $\xrightarrow{\text{pyk}}$  “rule r four”]
- [R5  $\xrightarrow{\text{pyk}}$  “rule r five”]
- [R6  $\xrightarrow{\text{pyk}}$  “rule r six”]
- [Con1  $\xrightarrow{\text{pyk}}$  “conjel1”]
- [Con2  $\xrightarrow{\text{pyk}}$  “conjel2”]
- [Con  $\xrightarrow{\text{pyk}}$  “conjin”]
- [Dis1  $\xrightarrow{\text{pyk}}$  “disjin1”]
- [Dis2  $\xrightarrow{\text{pyk}}$  “disjin2”]
- [Lem1.11c  $\xrightarrow{\text{pyk}}$  “t one”]
- [Cor1.10a  $\xrightarrow{\text{pyk}}$  “h zero a”]
- [Cor1.10b  $\xrightarrow{\text{pyk}}$  “h zero b”]
- [Lem1.11a  $\xrightarrow{\text{pyk}}$  “h one”]
- [Lem1.11b  $\xrightarrow{\text{pyk}}$  “h two”]
- [H3  $\xrightarrow{\text{pyk}}$  “h three”]
- [Prop3.2c'  $\xrightarrow{\text{pyk}}$  “h four”]
- [S1''  $\xrightarrow{\text{pyk}}$  “h four mark”]
- [Neg'  $\xrightarrow{\text{pyk}}$  “h five”]
- [Repetition'  $\xrightarrow{\text{pyk}}$  “h six”]
- [Lem1.11e  $\xrightarrow{\text{pyk}}$  “h seven”]
- [Lem1.11d  $\xrightarrow{\text{pyk}}$  “h eight”]
- [Prop3.2b'  $\xrightarrow{\text{pyk}}$  “h nine”]
- [H10  $\xrightarrow{\text{pyk}}$  “h ten”]
- [H11  $\xrightarrow{\text{pyk}}$  “h eleven”]
- [Lem1.11g  $\xrightarrow{\text{pyk}}$  “h twelwe”]
- [MT  $\xrightarrow{\text{pyk}}$  “modus tollens”]
- [S10  $\xrightarrow{\text{pyk}}$  “axiom s ten”]
- [Prop 3.2  $\xrightarrow{\text{pyk}}$  “prop three two”]
- [Prop 3.2i  $\xrightarrow{\text{pyk}}$  “prop three two i”]
- [Prop 3.2j<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three two j one”]
- [Prop 3.2j<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three two j two”]
- [Prop 3.2j  $\xrightarrow{\text{pyk}}$  “prop three two j”]
- [Prop 3.2k<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three two k one”]

- [Prop 3.2k<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three two k two”]
- [Prop 3.2k  $\xrightarrow{\text{pyk}}$  “prop three two k”]
- [Prop 3.2l<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three two l one”]
- [Prop 3.2l<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three two l two”]
- [Prop 3.2l  $\xrightarrow{\text{pyk}}$  “prop three two l”]
- [Prop 3.2m<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three two m one”]
- [Prop 3.2m<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three two m two”]
- [Prop 3.2m  $\xrightarrow{\text{pyk}}$  “prop three two m”]
- [Prop 3.2n<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three two n one”]
- [Prop 3.2n<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three two n two”]
- [Prop 3.2n  $\xrightarrow{\text{pyk}}$  “prop three two n”]
- [Prop 3.2o  $\xrightarrow{\text{pyk}}$  “prop three two o”]
- [Prop 3.4  $\xrightarrow{\text{pyk}}$  “prop three four”]
- [Prop 3.4a<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three four a one”]
- [Prop 3.4a<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three four a two”]
- [Prop 3.4a  $\xrightarrow{\text{pyk}}$  “prop three four a”]
- [Prop 3.4b  $\xrightarrow{\text{pyk}}$  “prop three four b”]
- [Prop 3.4c<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three four c one”]
- [Prop 3.4c<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three four c two”]
- [Prop 3.4c  $\xrightarrow{\text{pyk}}$  “prop three four c”]
- [Prop 3.4d<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three four d one”]
- [Prop 3.4d<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three four d two”]
- [Prop 3.4d  $\xrightarrow{\text{pyk}}$  “prop three four d”]
- [Prop 3.5  $\xrightarrow{\text{pyk}}$  “prop three five”]
- [Prop 3.5a  $\xrightarrow{\text{pyk}}$  “prop three five a”]
- [Prop 3.5b  $\xrightarrow{\text{pyk}}$  “prop three five b”]
- [Prop 3.5c  $\xrightarrow{\text{pyk}}$  “prop three five c”]
- [Prop 3.5d<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five d one”]
- [Prop 3.5d<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five d two”]
- [Prop 3.5d  $\xrightarrow{\text{pyk}}$  “prop three five d”]
- [Prop 3.5e<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five e one”]
- [Prop 3.5e<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five e two”]
- [Prop 3.5e  $\xrightarrow{\text{pyk}}$  “prop three five e”]
- [Prop 3.5f<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five f one”]
- [Prop 3.5f<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five f two”]

- [Prop 3.5f  $\xrightarrow{\text{pyk}}$  “prop three five f”]
- [Prop 3.5g<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five g one”]
- [Prop 3.5g<sub>4</sub>  $\xrightarrow{\text{pyk}}$  “prop three five g two”]
- [Prop 3.5g<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five g three”]
- [Prop 3.5g<sub>3</sub>  $\xrightarrow{\text{pyk}}$  “prop three five g four”]
- [Prop 3.5g  $\xrightarrow{\text{pyk}}$  “prop three five g”]
- [Prop 3.5h<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five h one”]
- [Prop 3.5h<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five h two”]
- [Prop 3.5h  $\xrightarrow{\text{pyk}}$  “prop three five h”]
- [Prop 3.5i<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five i one”]
- [Prop 3.5i<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five i two”]
- [Prop 3.5i  $\xrightarrow{\text{pyk}}$  “prop three five i”]
- [Prop 3.5j<sub>1</sub>  $\xrightarrow{\text{pyk}}$  “prop three five j one”]
- [Prop 3.5j<sub>2</sub>  $\xrightarrow{\text{pyk}}$  “prop three five j two”]
- [Prop 3.5j  $\xrightarrow{\text{pyk}}$  “prop three five j”]
- [Prop 3.7  $\xrightarrow{\text{pyk}}$  “prop three seven”]
- [Prop 3.7a  $\xrightarrow{\text{pyk}}$  “prop three seven a”]
- [Prop 3.7b  $\xrightarrow{\text{pyk}}$  “prop three seven b”]
- [Prop 3.7c  $\xrightarrow{\text{pyk}}$  “prop three seven c”]
- [Prop 3.7d  $\xrightarrow{\text{pyk}}$  “prop three seven d”]
- [Prop 3.7e  $\xrightarrow{\text{pyk}}$  “prop three seven e”]
- [Prop 3.7f  $\xrightarrow{\text{pyk}}$  “prop three seven f”]
- [Prop 3.7g  $\xrightarrow{\text{pyk}}$  “prop three seven g”]
- [Prop 3.7g'  $\xrightarrow{\text{pyk}}$  “prop three seven g mark”]
- [Prop 3.7h  $\xrightarrow{\text{pyk}}$  “prop three seven h”]
- [Prop 3.7i  $\xrightarrow{\text{pyk}}$  “prop three seven i”]
- [Prop 3.7j  $\xrightarrow{\text{pyk}}$  “prop three seven j”]
- [Prop 3.7k  $\xrightarrow{\text{pyk}}$  “prop three seven k”]
- [Prop 3.7k'  $\xrightarrow{\text{pyk}}$  “prop three seven k mark”]
- [Prop 3.7l  $\xrightarrow{\text{pyk}}$  “prop three seven l”]
- [Prop 3.7l'  $\xrightarrow{\text{pyk}}$  “prop three seven l mark”]
- [Prop 3.7m  $\xrightarrow{\text{pyk}}$  “prop three seven m”]
- [Prop 3.7n  $\xrightarrow{\text{pyk}}$  “prop three seven n”]
- [Prop 3.7o  $\xrightarrow{\text{pyk}}$  “prop three seven o”]
- [Prop 3.7p  $\xrightarrow{\text{pyk}}$  “prop three seven p”]

- [Prop 3.7q  $\xrightarrow{\text{pyk}}$  “prop three seven q”]  
 [Prop 3.7r  $\xrightarrow{\text{pyk}}$  “prop three seven r”]  
 [Prop 3.7s  $\xrightarrow{\text{pyk}}$  “prop three seven s”]  
 [Prop 3.7t  $\xrightarrow{\text{pyk}}$  “prop three seven t”]  
 [Prop 3.7u  $\xrightarrow{\text{pyk}}$  “prop three seven u”]  
 [Prop 3.7u'  $\xrightarrow{\text{pyk}}$  “prop three seven u mark”]  
 [Prop 3.7v  $\xrightarrow{\text{pyk}}$  “prop three seven v”]  
 [Prop 3.7w  $\xrightarrow{\text{pyk}}$  “prop three seven w”]  
 [Prop 3.7x  $\xrightarrow{\text{pyk}}$  “prop three seven x”]  
 [Prop 3.7x'  $\xrightarrow{\text{pyk}}$  “prop three seven x mark”]  
 [Prop 3.7y  $\xrightarrow{\text{pyk}}$  “prop three seven y”]  
 [Prop 3.7y'  $\xrightarrow{\text{pyk}}$  “prop three seven y mark”]  
 [Prop 3.7z  $\xrightarrow{\text{pyk}}$  “prop three seven z”]  
 [Prop 3.7z'  $\xrightarrow{\text{pyk}}$  “prop three seven z mark”]  
 [Prop 3.10  $\xrightarrow{\text{pyk}}$  “prop three ten”]  
 [Prop 3.10a  $\xrightarrow{\text{pyk}}$  “prop three ten a”]  
 [Prop 3.10b  $\xrightarrow{\text{pyk}}$  “prop three ten b”]  
 [Prop 3.10c  $\xrightarrow{\text{pyk}}$  “prop three ten c”]  
 [Prop 3.10d  $\xrightarrow{\text{pyk}}$  “prop three ten d”]  
 [Prop 3.10e  $\xrightarrow{\text{pyk}}$  “prop three ten e”]  
 [Prop 3.10f  $\xrightarrow{\text{pyk}}$  “prop three ten f”]  
 [Prop 3.10g  $\xrightarrow{\text{pyk}}$  “prop three ten g”]  
 [Prop 3.10h  $\xrightarrow{\text{pyk}}$  “prop three ten h”]  
 [Prop 3.11  $\xrightarrow{\text{pyk}}$  “prop three eleven”]  
 [\* < \*  $\xrightarrow{\text{pyk}}$  “" ist ””]  
 [\* ≤ \*  $\xrightarrow{\text{pyk}}$  “" istq ””]  
 [\* < \*  $\xrightarrow{\text{pyk}}$  “" inst ””]  
 [\* > \*  $\xrightarrow{\text{pyk}}$  “" igt ””]  
 [\* ≥ \*  $\xrightarrow{\text{pyk}}$  “" igtq ””]  
 [\* > \*  $\xrightarrow{\text{pyk}}$  “" ingt ””]  
 [\* ≠ \*  $\xrightarrow{\text{pyk}}$  “" neq ””]  
 [\* ∧ \*  $\xrightarrow{\text{pyk}}$  “" and1 ””]  
 [\* ∨ \*  $\xrightarrow{\text{pyk}}$  “" or1 ””]  
 [∃\*: \*  $\xrightarrow{\text{pyk}}$  “exists " indeed ””]  
 [\* | \*  $\xrightarrow{\text{pyk}}$  “" divides ””]

[\*...  $\xrightarrow{\text{pyk}}$  “`“\ldots”`”]  
[opgave  $\xrightarrow{\text{pyk}}$  “opgave”]

### 3 T<sub>E</sub>X definitions

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

[S10  $\xrightarrow{\text{tex}}$  “  
    S10”]

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

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

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

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

[Prop 3.2j<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
    Prop\ 3.2j\_1”]

[Prop 3.2j<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
    Prop\ 3.2j\_2”]

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

[Prop 3.2k<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
    Prop\ 3.2k\_1”]

[Prop 3.2k<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
    Prop\ 3.2k\_2”]

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

[Prop 3.2l<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
    Prop\ 3.2l\_1”]

[Prop 3.2l<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.2l\_2”]

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

[Prop 3.2m<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.2m\_1”]

[Prop 3.2m<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.2m\_2”]

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

[Prop 3.2n<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.2n\_1”]

[Prop 3.2n<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.2n\_2”]

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

[Prop 3.4  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4”]

[Prop 3.4a<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4a\_1”]

[Prop 3.4a<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4a\_2”]

[Prop 3.4a  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4a”]

[Prop 3.4b  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4b”]

[Prop 3.4c<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4c\_1”]

[Prop 3.4c<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4c\_2”]

[Prop 3.4c  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4c”]

[Prop 3.4d<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4d\_1”]

[Prop 3.4d<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4d\_2”]

[Prop 3.4d  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.4d”]

[Prop 3.5  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5”]

[Prop 3.5a  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5a”]

[Prop 3.5b  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5b”]

[Prop 3.5c  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5c”]

[Prop 3.5d<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5d\_1”]

[Prop 3.5d<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5d\_2”]

[Prop 3.5d  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5d”]

[Prop 3.5e<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5e\_1”]

[Prop 3.5e<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5e\_2”]

[Prop 3.5e  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5e”]

[Prop 3.5f<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5f\_1”]

[Prop 3.5f<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5f\_2”]

[Prop 3.5f  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5f”]



[Prop 3.5g<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5g\_1”]

[Prop 3.5g<sub>4</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5g\_4”]

[Prop 3.5g<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5g\_2”]

[Prop 3.5g<sub>3</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5g\_3”]

[Prop 3.5g  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5g”]

[Prop 3.5h<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5h\_1”]

[Prop 3.5h<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5h\_2”]

[Prop 3.5h  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5h”]

[Prop 3.5i<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5i\_1”]

[Prop 3.5i<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5i\_2”]

[Prop 3.5i  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5i”]

[Prop 3.5j<sub>1</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5j\_1”]

[Prop 3.5j<sub>2</sub>  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5j\_2”]

[Prop 3.5j  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.5j”]

[Prop 3.7  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7”]

[Prop 3.7a  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7a”]

[Prop 3.7b  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7b”]

[Prop 3.7c  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7c”]

[Prop 3.7d  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7d”]

[Prop 3.7e  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7e”]

[Prop 3.7f  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7f”]

[Prop 3.7g  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7g”]

[Prop 3.7g'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7g'”]

[Prop 3.7h  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7h”]

[Prop 3.7i  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7i”]

[Prop 3.7j  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7j”]

[Prop 3.7k  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7k”]

[Prop 3.7k'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7k'”]

[Prop 3.7l  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7l”]

[Prop 3.7l'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7l'”]

[Prop 3.7m  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7m”]

[Prop 3.7n  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7n”]

[Prop 3.7o  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7o”]

[Prop 3.7p  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7p”]

[Prop 3.7q  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7q”]

[Prop 3.7r  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7r”]

[Prop 3.7s  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7s”]

[Prop 3.7t  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7t”]

[Prop 3.7u  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7u”]

[Prop 3.7u'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7u'”]

[Prop 3.7v  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7v”]

[Prop 3.7w  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7w”]

[Prop 3.7x  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7x”]

[Prop 3.7x'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7x'”]

[Prop 3.7y  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7y”]

[Prop 3.7y'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7y'”]

[Prop 3.7z  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7z”]

[Prop 3.7z'  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.7z'”]

[Prop 3.10  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10”]

[Prop 3.10a  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10a”]

[Prop 3.10b  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10b”]

[Prop 3.10c  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10c”]

[Prop 3.10d  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10d”]

[Prop 3.10e  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10e”]

[Prop 3.10f  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10f”]

[Prop 3.10g  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10g”]

[Prop 3.10h  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.10h”]

[Prop 3.11  $\xrightarrow{\text{tex}}$  “  
Prop\ 3.11”]

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

[R1  $\xrightarrow{\text{tex}}$  “  
R1”]

[R2  $\xrightarrow{\text{tex}}$  “  
R2”]

[R3  $\xrightarrow{\text{tex}}$  “  
R3”]

[R4  $\xrightarrow{\text{tex}}$  “  
R4”]

[R5  $\xrightarrow{\text{tex}}$  “  
R5”]

[R6  $\xrightarrow{\text{tex}}$  “  
R6”]

[Con1  $\xrightarrow{\text{tex}}$  “  
Con1”]

[Con2  $\xrightarrow{\text{tex}}$  “  
Con2”]

[Dis1  $\xrightarrow{\text{tex}}$  “  
Dis1”]

[Dis2  $\xrightarrow{\text{tex}}$  “  
Dis2”]

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

[Lem1.11c  $\xrightarrow{\text{tex}}$  “  
Lem 1.11c”]

[Lem1.11a  $\xrightarrow{\text{tex}}$  “  
Lem 1.11a”]

[Lem1.11b  $\xrightarrow{\text{tex}}$  “  
Lem 1.11b”]

[H3  $\xrightarrow{\text{tex}}$  “  
H3”]

[Prop3.2c'  $\xrightarrow{\text{tex}}$  “  
Prop 3.2c”]

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

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

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

[Lem1.11e  $\xrightarrow{\text{tex}}$  “  
Lem 1.11e”]

[Lem1.11d  $\xrightarrow{\text{tex}}$  “  
Lem 1.11d”]

[Prop3.2b'  $\xrightarrow{\text{tex}}$  “  
Prop 3.2b”]

[H10  $\xrightarrow{\text{tex}}$  “  
H10”]

[H11  $\xrightarrow{\text{tex}}$  “  
H11”]

[Lem1.11g  $\xrightarrow{\text{tex}}$  “  
Lem 1.11g”]

[Cor1.10a  $\xrightarrow{\text{tex}}$  “  
Cor 1.10a”]

[Cor1.10b  $\xrightarrow{\text{tex}}$  “  
Cor 1.10b”]

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

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

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

[ $x \not< y \xrightarrow{\text{tex}}$  “#1.  
\not < #2.”]

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

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

[ $x \not> y \xrightarrow{\text{tex}}$  “#1.  
\not > #2.”]

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

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

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

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

### 3.1 Variables

## 4 Numerals

$[x \neq y \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[x \neq y \doteq \neg(x = y)])]]$   
 $[\bar{0} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{0} \doteq 0]])]$   $[\bar{1} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{1} \doteq 0']]])]$   
 $[\bar{2} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{2} \doteq 0'']]])]$   $[\bar{3} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{3} \doteq 0''']]])]$   
 $[\bar{4} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{4} \doteq 0''''']]])]$   $[\bar{5} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{5} \doteq 0''''''']]])]$   
 $[\bar{6} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{6} \doteq 0''''''''']]])]$   $[\bar{7} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{7} \doteq 0''''''''''']]])]$   
 $[\bar{8} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{8} \doteq 0''''''''''''']]])]$   $[\bar{9} \xrightarrow{\text{macro}} \lambda t. \lambda s. \lambda c. \tilde{\mathcal{M}}_4(t, s, c, [[\bar{9} \doteq 0''''''''''''''']]])]$   
 $[\bar{0} \xrightarrow{\text{tex}} \overline{\{0\}}]$  “  
 $\overline{\{1\}}$ ”  $[\bar{2} \xrightarrow{\text{tex}} \overline{\{2\}}$  “  
 $\overline{\{3\}}$ ”  $[\bar{4} \xrightarrow{\text{tex}} \overline{\{4\}}$  “  
 $\overline{\{5\}}$ ”  $[\bar{5} \xrightarrow{\text{tex}} \overline{\{6\}}$  “  
 $\overline{\{6\}}$ ”  $[\bar{6} \xrightarrow{\text{tex}} \overline{\{7\}}$  “  
 $\overline{\{7\}}$ ”  $[\bar{7} \xrightarrow{\text{tex}} \overline{\{8\}}$  “  
 $\overline{\{8\}}$ ”  $[\bar{8} \xrightarrow{\text{tex}} \overline{\{9\}}$  “  
 $\overline{\{9\}}$ ”  $[\bar{n} \xrightarrow{\text{tex}} \overline{\{n\}}$ ”

## 5 Priority table

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

### Preassociative

$[\text{opgave}]$ ,  $[\text{base}]$ ,  $[\text{bracket } * \text{ end bracket}]$ ,  $[\text{big bracket } * \text{ end bracket}]$ ,  $[\$ * \$]$ ,  
 $[\text{flush left } *]$ ,  $[x]$ ,  $[y]$ ,  $[z]$ ,  $[[* \bowtie *]]$ ,  $[[* \overset{*}{*} *]]$ ,  $[\text{pyk}]$ ,  $[\text{tex}]$ ,  $[\text{name}]$ ,  $[\text{prio}]$ ,  $[*]$ ,  $[\text{T}]$ ,  
 $[\text{if}(*, *, *)]$ ,  $[[* \overset{*}{\Rightarrow} *]]$ ,  $[\text{val}]$ ,  $[\text{claim}]$ ,  $[\perp]$ ,  $[\text{f}(*)]$ ,  $[(*)^!]$ ,  $[\text{F}]$ ,  $[\text{0}]$ ,  $[\text{1}]$ ,  $[\text{2}]$ ,  $[\text{3}]$ ,  $[\text{4}]$ ,  $[\text{5}]$ ,  $[\text{6}]$ ,  
 $[\text{7}]$ ,  $[\text{8}]$ ,  $[\text{9}]$ ,  $[\text{0}]$ ,  $[\text{1}]$ ,  $[\text{2}]$ ,  $[\text{3}]$ ,  $[\text{4}]$ ,  $[\text{5}]$ ,  $[\text{6}]$ ,  $[\text{7}]$ ,  $[\text{8}]$ ,  $[\text{9}]$ ,  $[\text{a}]$ ,  $[\text{b}]$ ,  $[\text{c}]$ ,  $[\text{d}]$ ,  $[\text{e}]$ ,  $[\text{f}]$ ,  $[\text{g}]$ ,  $[\text{h}]$ ,  $[\text{i}]$ ,  $[\text{j}]$ ,  
 $[\text{k}]$ ,  $[\text{l}]$ ,  $[\text{m}]$ ,  $[\text{n}]$ ,  $[\text{o}]$ ,  $[\text{p}]$ ,  $[\text{q}]$ ,  $[\text{r}]$ ,  $[\text{s}]$ ,  $[\text{t}]$ ,  $[\text{u}]$ ,  $[\text{v}]$ ,  $[\text{w}]$ ,  $[(*)^M]$ ,  $[\text{If}(*, *, *)]$ ,  
 $[\text{array}\{*\} * \text{end array}]$ ,  $[\text{l}]$ ,  $[\text{c}]$ ,  $[\text{r}]$ ,  $[\text{empty}]$ ,  $[\langle * | * := * \rangle]$ ,  $[\mathcal{M}(*)]$ ,  $[\tilde{\mathcal{U}}(*)]$ ,  $[\mathcal{U}(*)]$ ,  
 $[\mathcal{U}^M(*)]$ ,  $[\text{apply}(*, *)]$ ,  $[\text{apply}_1(*, *)]$ ,  $[\text{identifier}(*)]$ ,  $[\text{identifier}_1(*, *)]$ ,  $[\text{array-}$   
 $\text{plus}(*, *)]$ ,  $[\text{array-remove}(*, *, *)]$ ,  $[\text{array-put}(*, *, *, *)]$ ,  $[\text{array-add}(*, *, *, *, *)]$ ,  
 $[\text{bit}(*, *)]$ ,  $[\text{bit}_1(*, *)]$ ,  $[\text{rack}]$ ,  $[\text{"vector"}]$ ,  $[\text{"bibliography"}]$ ,  $[\text{"dictionary"}]$ ,  
 $[\text{"body"}]$ ,  $[\text{"codex"}]$ ,  $[\text{"expansion"}]$ ,  $[\text{"code"}]$ ,  $[\text{"cache"}]$ ,  $[\text{"diagnose"}]$ ,  $[\text{"pyk"}]$ ,  
 $[\text{"tex"}]$ ,  $[\text{"texname"}]$ ,  $[\text{"value"}]$ ,  $[\text{"message"}]$ ,  $[\text{"macro"}]$ ,  $[\text{"definition"}]$ ,  
 $[\text{"unpack"}]$ ,  $[\text{"claim"}]$ ,  $[\text{"priority"}]$ ,  $[\text{"lambda"}]$ ,  $[\text{"apply"}]$ ,  $[\text{"true"}]$ ,  $[\text{"if"}]$ ,  
 $[\text{"quote"}]$ ,  $[\text{"proclaim"}]$ ,  $[\text{"define"}]$ ,  $[\text{"introduce"}]$ ,  $[\text{"hide"}]$ ,  $[\text{"pre"}]$ ,  $[\text{"post"}]$ ,  
 $[\mathcal{E}(*, *, *)]$ ,  $[\mathcal{E}_2(*, *, *, *, *)]$ ,  $[\mathcal{E}_3(*, *, *, *, *)]$ ,  $[\mathcal{E}_4(*, *, *, *, *)]$ ,  $[\text{look up}(*, *, *)]$ ,

**abstract**(\* , \* , \* , \* ), [[\* ]], [ $\mathcal{M}$ (\* , \* , \* )], [ $\mathcal{M}_2$ (\* , \* , \* , \* )], [ $\mathcal{M}^*$ (\* , \* , \* )], [macro],  
[s<sub>0</sub>], [**zip**(\* , \* )], [**assoc**<sub>1</sub>(\* , \* , \* )], [(\*)<sup>P</sup>], [self], [[\*  $\doteq$  \*]], [[\*  $\doteq$  \*]], [[\*  $\doteq$  \*]],  
[[\*  $\stackrel{\text{pyk}}{=}$  \*]], [[\*  $\stackrel{\text{tex}}{=}$  \*]], [[\*  $\stackrel{\text{name}}{=}$  \*]], [**Priority table**[\* ]], [ $\tilde{\mathcal{M}}_1$ ], [ $\tilde{\mathcal{M}}_2$ (\* )], [ $\tilde{\mathcal{M}}_3$ (\* )],  
[ $\tilde{\mathcal{M}}_4$ (\* , \* , \* , \* )], [ $\mathcal{M}$ (\* , \* , \* )], [ $\tilde{\mathcal{Q}}$ (\* , \* , \* )], [ $\tilde{\mathcal{Q}}_2$ (\* , \* , \* )], [ $\tilde{\mathcal{Q}}_3$ (\* , \* , \* , \* )], [ $\tilde{\mathcal{Q}}^*$ (\* , \* , \* )],  
[(\*)], [(\*)], [display(\* )], [statement(\* )], [[\* ]], [[\* ]<sup>-</sup>], [**aspect**(\* , \* )],  
**aspect**(\* , \* , \* ), [(\*)], [**tuple**<sub>1</sub>(\* )], [**tuple**<sub>2</sub>(\* )], [let<sub>2</sub>(\* , \* )], [let<sub>1</sub>(\* , \* )],  
[[\*  $\stackrel{\text{claim}}{=}$  \*]], [checker], [**check**(\* , \* )], [**check**<sub>2</sub>(\* , \* , \* )], [**check**<sub>3</sub>(\* , \* , \* )],  
**check**<sup>\*</sup>(\* , \* ), [**check**<sub>2</sub><sup>\*</sup>(\* , \* , \* )], [[\* ]], [[\* ]<sup>-</sup>], [[\* ]<sup>o</sup>], [msg], [[\*  $\stackrel{\text{msg}}{=}$  \*]], [<stmt>],  
[stmt], [[\*  $\stackrel{\text{stmt}}{=}$  \*]], [HeadNil'], [HeadPair'], [Transitivity'], [ $\perp$ ], [Contra'], [T'<sub>E</sub>],  
[L<sub>1</sub>], [\*], [ $\mathcal{A}$ ], [ $\mathcal{B}$ ], [ $\mathcal{C}$ ], [ $\mathcal{D}$ ], [ $\mathcal{E}$ ], [ $\mathcal{F}$ ], [ $\mathcal{G}$ ], [ $\mathcal{H}$ ], [ $\mathcal{I}$ ], [ $\mathcal{J}$ ], [ $\mathcal{K}$ ], [ $\mathcal{L}$ ], [ $\mathcal{M}$ ], [ $\mathcal{N}$ ], [ $\mathcal{O}$ ], [ $\mathcal{P}$ ], [ $\mathcal{Q}$ ],  
[ $\mathcal{R}$ ], [ $\mathcal{S}$ ], [ $\mathcal{T}$ ], [ $\mathcal{U}$ ], [ $\mathcal{V}$ ], [ $\mathcal{W}$ ], [ $\mathcal{X}$ ], [ $\mathcal{Y}$ ], [ $\mathcal{Z}$ ], [( \* | \* := \* )], [( \* \* | \* := \* )], [ $\emptyset$ ], [Remainder],  
[( \* )<sup>v</sup>], [intro(\* , \* , \* , \* )], [intro(\* , \* , \* )], [error(\* , \* )], [error<sub>2</sub>(\* , \* )], [proof(\* , \* , \* )],  
[proof<sub>2</sub>(\* , \* )], [ $\mathcal{S}$ (\* , \* )], [ $\mathcal{S}^1$ (\* , \* )], [ $\mathcal{S}^\triangleright$ (\* , \* )], [ $\mathcal{S}_1^\triangleright$ (\* , \* , \* )], [ $\mathcal{S}^E$ (\* , \* )], [ $\mathcal{S}_1^E$ (\* , \* , \* )],  
[ $\mathcal{S}^+$ (\* , \* )], [ $\mathcal{S}_1^+$ (\* , \* , \* )], [ $\mathcal{S}^-$ (\* , \* )], [ $\mathcal{S}_1^-$ (\* , \* , \* )], [ $\mathcal{S}^*$ (\* , \* )], [ $\mathcal{S}_1^*$ (\* , \* , \* )],  
[ $\mathcal{S}_2^*$ (\* , \* , \* , \* )], [ $\mathcal{S}^\oplus$ (\* , \* )], [ $\mathcal{S}_1^\oplus$ (\* , \* , \* )], [ $\mathcal{S}^+$ (\* , \* )], [ $\mathcal{S}_1^+$ (\* , \* , \* , \* )], [ $\mathcal{S}^{\text{H}}$ (\* , \* )],  
[ $\mathcal{S}_1^{\text{H}}$ (\* , \* , \* , \* )], [ $\mathcal{S}^{\text{i.e.}}$ (\* , \* )], [ $\mathcal{S}_1^{\text{i.e.}}$ (\* , \* , \* , \* )], [ $\mathcal{S}_2^{\text{i.e.}}$ (\* , \* , \* , \* , \* )], [ $\mathcal{S}^{\text{V}}$ (\* , \* )],  
[ $\mathcal{S}_1^{\text{V}}$ (\* , \* , \* , \* )], [ $\mathcal{S}^:$ (\* , \* )], [ $\mathcal{S}_1^:$ (\* , \* , \* )], [ $\mathcal{S}_2^:$ (\* , \* , \* , \* )], [ $\mathcal{T}$ (\* )], [claims(\* , \* , \* )],  
[claims<sub>2</sub>(\* , \* , \* )], [<proof>], [proof], [[**Lemma** \* : \* ]], [[**Proof of** \* : \* ]],  
[[ \* **lemma** \* : \* ]], [[ \* **antilemma** \* : \* ]], [[ \* **rule** \* : \* ]], [[ \* **antirule** \* : \* ]],  
[verifier], [ $\mathcal{V}_1$ (\* )], [ $\mathcal{V}_2$ (\* , \* )], [ $\mathcal{V}_3$ (\* , \* , \* , \* )], [ $\mathcal{V}_4$ (\* , \* )], [ $\mathcal{V}_5$ (\* , \* , \* , \* )], [ $\mathcal{V}_6$ (\* , \* , \* , \* )],  
[ $\mathcal{V}_7$ (\* , \* , \* , \* )], [Cut(\* , \* )], [Head $\oplus$ (\* )], [Tail $\oplus$ (\* )], [rule<sub>1</sub>(\* , \* )], [rule(\* , \* )],  
[Rule tactic], [Plus(\* , \* )], [[**Theory** \* ]], [theory<sub>2</sub>(\* , \* )], [theory<sub>3</sub>(\* , \* )],  
[theory<sub>4</sub>(\* , \* , \* )], [HeadNil''], [HeadPair''], [Transitivity''], [Contra''], [HeadNil],  
[HeadPair], [Transitivity], [Contra], [T<sub>E</sub>], [ragged right],  
[ragged right expansion ], [parm(\* , \* , \* )], [parm<sup>\*</sup>(\* , \* , \* )], [inst(\* , \* )],  
[inst<sup>\*</sup>(\* , \* )], [occur(\* , \* , \* )], [occur<sup>\*</sup>(\* , \* , \* )], [unify(\* = \* , \* )], [unify<sup>\*</sup>(\* = \* , \* )],  
[unify<sub>2</sub>(\* = \* , \* )], [L<sub>a</sub>], [L<sub>b</sub>], [L<sub>c</sub>], [L<sub>d</sub>], [L<sub>e</sub>], [L<sub>f</sub>], [L<sub>g</sub>], [L<sub>h</sub>], [L<sub>i</sub>], [L<sub>j</sub>], [L<sub>k</sub>], [L<sub>l</sub>], [L<sub>m</sub>],  
[L<sub>n</sub>], [L<sub>o</sub>], [L<sub>p</sub>], [L<sub>q</sub>], [L<sub>r</sub>], [L<sub>s</sub>], [L<sub>t</sub>], [L<sub>u</sub>], [L<sub>v</sub>], [L<sub>w</sub>], [L<sub>x</sub>], [L<sub>y</sub>], [L<sub>z</sub>], [L<sub>A</sub>], [L<sub>B</sub>], [L<sub>C</sub>],  
[L<sub>D</sub>], [L<sub>E</sub>], [L<sub>F</sub>], [L<sub>G</sub>], [L<sub>H</sub>], [L<sub>I</sub>], [L<sub>J</sub>], [L<sub>K</sub>], [L<sub>L</sub>], [L<sub>M</sub>], [L<sub>N</sub>], [L<sub>O</sub>], [L<sub>P</sub>], [L<sub>Q</sub>], [L<sub>R</sub>],  
[L<sub>S</sub>], [L<sub>T</sub>], [L<sub>U</sub>], [L<sub>V</sub>], [L<sub>W</sub>], [L<sub>X</sub>], [L<sub>Y</sub>], [L<sub>Z</sub>], [L<sub>?</sub>], [Reflexivity], [Reflexivity<sub>1</sub>],  
[Commutativity], [Commutativity<sub>1</sub>], [<tactic>], [tactic], [[\*  $\stackrel{\text{tactic}}{=}$  \*]], [ $\mathcal{P}$ (\* , \* , \* )],  
[ $\mathcal{P}^*$ (\* , \* , \* )], [p<sub>0</sub>], [conclude<sub>1</sub>(\* , \* )], [conclude<sub>2</sub>(\* , \* , \* )], [conclude<sub>3</sub>(\* , \* , \* , \* )],  
[conclude<sub>4</sub>(\* , \* )], [check], [[\*  $\stackrel{=}{=}$  \*]], [RootVisible(\* )], [A], [R], [C], [T], [L], [{\* }], [ $\bar{*}$ ],  
[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], [( \*  $\equiv$  \* | \* := \* )], [( \*  $\equiv^0$  \* | \* := \* )], [( \*  $\equiv^1$  \* | \* := \* )], [( \*  $\equiv^*$  \* | \* := \* )],  
[Ded(\* , \* )], [Ded<sub>0</sub>(\* , \* )], [Ded<sub>1</sub>(\* , \* , \* )], [Ded<sub>2</sub>(\* , \* , \* )], [Ded<sub>3</sub>(\* , \* , \* , \* )],  
[Ded<sub>4</sub>(\* , \* , \* , \* )], [Ded<sub>4</sub><sup>\*</sup>(\* , \* , \* , \* )], [Ded<sub>5</sub>(\* , \* , \* )], [Ded<sub>6</sub>(\* , \* , \* , \* )],  
[Ded<sub>6</sub><sup>\*</sup>(\* , \* , \* , \* )], [Ded<sub>7</sub>(\* )], [Ded<sub>8</sub>(\* , \* )], [Ded<sub>8</sub><sup>\*</sup>(\* , \* )], [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 3.2e<sub>1</sub>],  
[Prop 3.2e<sub>2</sub>], [Prop 3.2e], [Prop 3.2f<sub>1</sub>], [Prop 3.2f<sub>2</sub>], [Prop 3.2f], [Prop 3.2g<sub>1</sub>],  
[Prop 3.2g<sub>2</sub>], [Prop 3.2g], [Prop 3.2h<sub>1</sub>], [Prop 3.2h<sub>2</sub>], [Prop 3.2h],  
[Block<sub>1</sub>(\* , \* , \* )], [Block<sub>2</sub>(\* )], [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [ $\bar{n}$ ], [rule div],  
[R], [R1], [R2], [R3], [R4], [R5], [R6], [Con1], [Con2], [Con], [Dis1], [Dis2],



[Lem1.11c], [Cor1.10a], [Cor1.10b], [Lem1.11a], [Lem1.11b], [H3], [Prop3.2c'], [S1''], [Neg'], [Repetition'], [Lem1.11e], [Lem1.11d], [Prop3.2b'], [H10], [H11], [Lem1.11g], [MT], [S10], [Prop 3.2], [Prop 3.2i], [Prop 3.2j<sub>1</sub>], [Prop 3.2j<sub>2</sub>], [Prop 3.2j], [Prop 3.2k<sub>1</sub>], [Prop 3.2k<sub>2</sub>], [Prop 3.2k], [Prop 3.2l<sub>1</sub>], [Prop 3.2l<sub>2</sub>], [Prop 3.2l], [Prop 3.2m<sub>1</sub>], [Prop 3.2m<sub>2</sub>], [Prop 3.2m], [Prop 3.2n<sub>1</sub>], [Prop 3.2n<sub>2</sub>], [Prop 3.2n], [Prop 3.2o], [Prop 3.4], [Prop 3.4a<sub>1</sub>], [Prop 3.4a<sub>2</sub>], [Prop 3.4a], [Prop 3.4b], [Prop 3.4c<sub>1</sub>], [Prop 3.4c<sub>2</sub>], [Prop 3.4c], [Prop 3.4d<sub>1</sub>], [Prop 3.4d<sub>2</sub>], [Prop 3.4d], [Prop 3.5], [Prop 3.5a], [Prop 3.5b], [Prop 3.5c], [Prop 3.5d<sub>1</sub>], [Prop 3.5d<sub>2</sub>], [Prop 3.5d], [Prop 3.5e<sub>1</sub>], [Prop 3.5e<sub>2</sub>], [Prop 3.5e], [Prop 3.5f<sub>1</sub>], [Prop 3.5f<sub>2</sub>], [Prop 3.5f], [Prop 3.5g<sub>1</sub>], [Prop 3.5g<sub>4</sub>], [Prop 3.5g<sub>2</sub>], [Prop 3.5g<sub>3</sub>], [Prop 3.5g], [Prop 3.5h<sub>1</sub>], [Prop 3.5h<sub>2</sub>], [Prop 3.5h], [Prop 3.5i<sub>1</sub>], [Prop 3.5i<sub>2</sub>], [Prop 3.5i], [Prop 3.5j<sub>1</sub>], [Prop 3.5j<sub>2</sub>], [Prop 3.5j], [Prop 3.7], [Prop 3.7a], [Prop 3.7b], [Prop 3.7c], [Prop 3.7d], [Prop 3.7e], [Prop 3.7f], [Prop 3.7g], [Prop 3.7g'], [Prop 3.7h], [Prop 3.7i], [Prop 3.7j], [Prop 3.7k], [Prop 3.7k'], [Prop 3.7l], [Prop 3.7l'], [Prop 3.7m], [Prop 3.7n], [Prop 3.7o], [Prop 3.7p], [Prop 3.7q], [Prop 3.7r], [Prop 3.7s], [Prop 3.7t], [Prop 3.7u], [Prop 3.7u'], [Prop 3.7v], [Prop 3.7w], [Prop 3.7x], [Prop 3.7x'], [Prop 3.7y], [Prop 3.7y'], [Prop 3.7z], [Prop 3.7z'], [Prop 3.10], [Prop 3.10a], [Prop 3.10b], [Prop 3.10c], [Prop 3.10d], [Prop 3.10e], [Prop 3.10f], [Prop 3.10g], [Prop 3.10h], [Prop 3.11];

### Preassociative

[\*\_{\*}], [\*/\_indexintro(\*, \*, \*, \*)], [\*/\_intro(\*, \*, \*)], [\*/\_bothintro(\*, \*, \*, \*, \*)], [\*/\_nameintro(\*, \*, \*, \*)], [\*'], [\*[\* \*]], [\*[\* $\rightarrow$ \*]], [\*[\* $\Rightarrow$ \*]], [\*0], [\*1], [0b], [\*-color(\*)], [\*-color\*(\*)], [\*<sup>H</sup>], [\*<sup>T</sup>], [\*<sup>U</sup>], [\*<sup>h</sup>], [\*<sup>t</sup>], [\*<sup>s</sup>], [\*<sup>c</sup>], [\*<sup>d</sup>], [\*<sup>a</sup>], [\*<sup>C</sup>], [\*<sup>M</sup>], [\*<sup>B</sup>], [\*<sup>r</sup>], [\*<sup>i</sup>], [\*<sup>d</sup>], [\*<sup>R</sup>], [\*<sup>0</sup>], [\*<sup>1</sup>], [\*<sup>2</sup>], [\*<sup>3</sup>], [\*<sup>4</sup>], [\*<sup>5</sup>], [\*<sup>6</sup>], [\*<sup>7</sup>], [\*<sup>8</sup>], [\*<sup>9</sup>], [\*<sup>E</sup>], [\*<sup>V</sup>], [\*<sup>C</sup>], [\*<sup>C\*</sup>], [\*hide];

### Preassociative

[“ \* ”], [], [(\*)<sup>t</sup>], [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

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

### Postassociative

[\* ∴ \*], [\* ∷ \*], [\* ∴ ∴ \*], [\* +2\* \*], [\* ∴ ∴ \*], [\* +2\* \* \*];

**Postassociative**

[\* , \*];

**Preassociative**

[\*  $\overset{B}{\approx}$  \*], [\*  $\overset{D}{\approx}$  \*], [\*  $\overset{C}{\approx}$  \*], [\*  $\overset{P}{\approx}$  \*], [\*  $\approx$  \*], [\* = \*], [\*  $\dashv$  \*], [\*  $\overset{t}{=}$  \*], [\*  $\overset{t^*}{=}$  \*], [\*  $\overset{r}{=}$  \*],  
[\*  $\in_t$  \*], [\*  $\subseteq_T$  \*], [\*  $\overset{T}{=}$  \*], [\*  $\overset{s}{=}$  \*], [\* free in \*], [\* free in\* \*], [\* free for \* in \*],  
[\* free for\* \* in \*], [\*  $\in_c$  \*], [\* < \*], [\* <' \*], [\*  $\leq'$  \*], [\* = \*], [\* ≠ \*], [\*<sup>var</sup>],  
[\* #<sup>0</sup> \*], [\* #<sup>1</sup> \*], [\* #\* \*], [\* < \*], [\* ≤ \*], [\*  $\not<$  \*], [\* > \*], [\* ≥ \*], [\*  $\not>$  \*], [\* ≠ \*];

**Preassociative**

[¬\*];

**Preassociative**

[\* ∧ \*], [\*  $\overset{\sim}{\wedge}$  \*], [\*  $\overset{\sim}{\wedge}$  \*], [\* ∧<sub>c</sub> \*], [\* ∧ \*];

**Preassociative**

[\* ∨ \*], [\* || \*], [\*  $\overset{\vee}{\vee}$  \*], [\* ∨ \*];

**Preassociative**

[∃\* : \*], [∀\* : \*], [∀<sub>obj</sub>\* : \*], [∃\* : \*];

**Postassociative**

[\*  $\overset{\Rightarrow}{\Rightarrow}$  \*], [\* ⇒ \*], [\* ⇔ \*];

**Postassociative**

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

**Preassociative**

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

**Preassociative**

[λ \* . \*], [Λ \* . \*], [Λ \*], [if \* then \* else \*], [let \* = \* in \*], [let \* ≐ \* in \*];

**Preassociative**

[\* #\*];

**Preassociative**

[\*<sup>I</sup>], [\*<sup>▷</sup>], [\*<sup>V</sup>], [\*<sup>+</sup>], [\*<sup>-</sup>], [\*\*];

**Preassociative**

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

**Postassociative**

[\* ⊢ \*], [\* ⊢ \*], [\* i.e. \*];

**Preassociative**

[∀\* : \*], [Π\* : \*];

**Postassociative**

[\* ⊕ \*];

**Postassociative**

[\* , \*];

**Preassociative**

[\* proves \*];

**Preassociative**

[\* **proof of** \* : \*], [Line \* : \*  $\gg$  \*; \*], [Last line \*  $\gg$  \* □],  
[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] \*], [\*\\\*], [\* | \*], [\*...];]